BEFORE THE

U. S. ENVIRONMENTAL PROTECTION AGENCY

- - - - - - - - - - - - - - - - x

IN THE MATTER OF: :

PUBLIC HEARING - REPROPOSED :

UNDERGROUND INJECTION CONTROL : VOLUME I

PROGRAM :

- - - - - - - - - - - - - - - - x

North Ballroom
North Park Inn
Dallas, Texas

Monday, July 16, 1979

Met, pursuant to Notice, at 9:00 a.m.

BEFORE:

ALAN LEVIN, Chairman
Director, State Programs Division
Office of Drinking Water
Environmental Protection Agency
Washington, D.C. 20460

PANEL:

PAUL BALTAY
Deputy Director, State Programs Division
Office of Drinking Water
Environmental Protection Agency
Washington, D.C. 20460

DAVID SCHNAPF
Attorney, Permit Division
Office of Enforcement
Environmental Protection Agency
Washington, D.C. 20460

PANEL: (Continued)

SAM MOREKAS
Program Manager, Hazardous Waste State Program
State Program Branch
State Programs & Resource Recovery Division
Office of Solid Waste
Environmental Protection Agency
Washington, D.C. 20460

MARK GORDON
Attorney
Office of General Counsel
Environmental Protection Agency
Washington, D.C. 20460

MYRON KNUDSON
Director, Water Division
Environmental Protection Agency
Region VI
Dallas, Texas 75270

I N D E X

INDEX (Continued)

INDEX (Continued)

P R O C E E D I N G S

CHAIRMAN: Good morning, Ladies and gentlemen, my name is Alan Levin. I'm Director of the State Programs Divisions Office of Drinking Water, Environmental Protectio Agency, Washington, D.C. I will be serving as your Chairma for today's hearing.

The first individual I'd like to introduce this morning is Ms. Fran Phillips, Assistant Administrator, Region VI, here in Dallas of the Environmental Protection Agency. Ms. Phillips.

FRAN PHILLIPS: Good morning. Welcome to Dallas As Alan said, my name is Fran Phillips, and I am the newly appointed Assistant Administrator for EPA Region VI. I'd like to welcome you to this public hearing on behalf of Ms. Adelene Harrison, the Regional Administrator, who is no able to be with us this morning.

I am very pleased that this, the first public hearing on EPA's Proposed Underground Injection Control Program,is being held in Region VI. I think it is appropri ate that the hearings start here. As you may know, our 5 State Region consisting of Arkansas, Louisiana, New Mexico, Oklahoma and Texas, contain a great number of the under- ground injection wells which are covered by these proposed regulations. We have estimated that more that 60,000 injec tion wells exists in Region VI. Included in this figure, a more than 1/2 of the nation's total of so-called Class One injection wells. Our 5 States produce nearly 70 percent of the nation's domestic oil, activities associated with this production such as reinjection of brine, advance recovery methods and the petrochemical industry, are major users of injection wells. In addition, Region VI counts for 55 percent of the solution mining of salt, nearly all fresh sulphur mining wells, and 30 percent of active uranium leaching operations. Each of these activities is closely associated with the use of injection wells.

Now, also, I would like to say that I am very pleased that we are having the public hearing here today in Dallas, the first public hearing that EPA has held since President Carter's energy announcement and energy message last night. He spoke of a crisis in confidence and our inability to perceive reality. You know I think that's true. We bicker and complain and point the finger. One week big oil is the culprit, the next week big government, we never put the blame on ourselves. I agree with the President that part of the solution to this problem is the ability to accept, not avoid, responsibility. According to President Carter, we are now embarking on a massive program of energy conservation and energy self-reliance. That is a reality. In this effort, we will be balancing energy concerns with environmental concerns. But we can't forget that environmental concerns indeed, environmental responsibility, is also a reality.

As we receive public comments today, I'm going to ask the listeners in the audience, the commentors and EPA's Regulation Writers to accept both responsibilities as reali It's really time to change our attitude now, and start working together toward solutions to our problems if we are going to avoid this crisis in confidence. To this end, I would like to pledge the support of our Regional Staff, Myr Knudson, Water Division Director-where are you Myron-and Linda Tucker who is in charge of our Underground Injection Control Program for the Region,to assist you as we work together. Thank you very much.

CHAIRMAN: Thank you Fran. The next thing I'd like to do is introduce our Panel. Am I coming through all right? Can you all hear me? Okay, good.

~~To my far right is Mr. Sam Morekas, he's the~~ Program Manager of the Hazardous Waste State Program, State Program Branch, State Programs and Resouce Recovery Divisi Office of Solid Waste, EPA, Washington. Sitting to Mr. Morekas' left, to my right, Mr. Mark Gordon, he's an attor with the Office of General Counsel, EPA in Washington. At my far left, is Mr. David Schnapf, he's an attorney with t Permits Division, Office of Enforcement, EPA in Washington Sitting next to Mr. Schnapf is Mr. Paul Baltay, he's the Deputy Director, State Programs Division, Office of Drinki

Water, Environmental Protection Agency, Washington. To my immediate left is Mr. Myron Knudson, he is the Director of the Water Division, EPA Region VI here in Dallas. At another table to my far right are a number of EPA Staff people, and since I don't know them all, I would like for them to please stand and introduce themselves.

LINDA TUCKER: I'm Linda Tucker, Chief of the Water Supply Branch, Region VI, Dallas EPA.

DWIGHT HOENIG: I'm Dwight Hoenig, I am a Geologist here in Region VI, Water Supply Branch.

ERLECE ALLEN: I'm Erlece Allen, Water Supply Branch, here in Region VI.

CHARLES SEVER: I'm Charles Sever, Environmental Scientist, Special Assistant to Mr. Levin in Washington.

DAN DURKAS: Dan Durkas with the Hazardous Waste Program, Washington, D.C.

GIL STAUFFER: I'm Gil Stauffer, Hazardous Waste Program, Washington.

CHAIRMAN: Ladies and gentlemen, this hearing concerns Part 146, The Technical Criterion Standards, for the Underground Injection Control Program called for by the Safe Drinking Water Act. We are here to receive comments on the reproposed regulations. We are not here to debate the regulations but to listen to public comments.

Regulation setting that impacts peoples lives is a very serious and complex matter, and as a result, we also consider the public's comments very seriously. Some of you may recall that these regulations were initially proposed o August 31, 1976. At that time, we received a voluminous comments on the regulations. The public played a great par in developing the package that is out on the street today. As a result of the public's comments, perhaps some of the comments of the people in this room, EPA has undergone 3 ye of study to try to refine and make these regulations more responsive to the public's needs. We have hired 4 contract who have worked diligently on these regulations. As a resu of that effort, these regulations have been changed signifi cantly so that once again we are reproposing them so the public may have an opportunity, once again, to comment. In addition, these regulations do go hand in hand with the EPA effort to consolidate procedural regulations under a number of its permit programs. Those hearings will be held tomorr

However, just so you can focus on today's hearing the regulations under Part 146, the Underground Injection Control Regulations, were reproposed on April 20, 1979. Th Consolidated Permit Regulations were proposed on June 14, 1 Very briefly about the Consolidated Permit Regulations, Pa 122 is the Programmatic Description and Requirements where EPA as primary enforcement responsibility. Part 123, desc what an acceptable State Program will be. The approval pr and how EPA intends to oversight the State programs. Part 124, concerns permanent issuance process and public participation. Part 146, which is the part we will be discussing today once again are the Technical Criterion Standard for the Underground Injection Control Program under the State Drinking Water Act.

Now, there are some over-lapse between Part 146 and Parts 122,3, and 4. That was intentional for the sake of comprehensibility since the Underground Injection Control Regulations were reproposed in advance of the Consolidated Regulations. However, when the regulations are promulgated and final, those requirements will be consolidated and there will be a single set of regulations if things go well.

In order to insure adequate public participation and that the public is informed about the regulations, there may be one or two of you in the audience that may not have read Part 146 yet. In that unlikely event, we want to make sure that you do understand what is in these regulations. So, therefore, I have asked this morning Mr. Paul Baltay, the Deputy Director of the State Programs Division, Office of Drinking Water, to give you about a 20 to 25 minutes briefing before we begin our formal hearings. Mr. Baltay.

MR. PAUL BALTAY: Thank you. My job is to give you a quick over-view of what is contained in the UIC program as it is currently proposed as of April 20.

As Alan said for those of you who have taken the trouble to be thoroughly familar with these regulations, I ask your forbearance, I will try not to be that long or boring.

The legislative mandate for the Underground Injection Control Program is contained in the Safe Drinking Water Act of 1974. Most of you also probably know that that Act was amended in 1977, and at that time Congress essential reaffirmed the mandate that gave us the basic Act. What the law basically requires is that EPA promulgate minimal national requirements and that such requirements do a number of things. First of all, the requirements that EPA is to promulgate are to insure State Programs which will prohibit the subsurface implacement of fluids through wells unless th are authorized, no unauthorized wells. Beyond that basic mission, there were a number of special things the law required the national minimum requirements to do. First of all, such requirements that EPA set were to try to avoid disrupting existing affective State Programs. Such minimal requirements were to take geologic, hydrologic and historica variations into account. Finally, such national minimum requirements were to avoid interfering with or impeding with all the gas production unless necessary to protect undergrou sources of drinking water.

Under the legislative mandate EPA was also to list states, which in the judgment of the Administrator, required a UIC program. That judgment was not to term on the question of a report card or whether we thought the states were doing a good job or a bad job. That question of needing a program terms on a question of the degree of dependence on underground sources of drinking water, and on a variety of factors which attempt to measure in a surrogate form the degree of threat or potential threat to that resource.

As of the 19th of June, EPA has now listed 40 states in jurisdiction as requiring a UIC Program. Our current intention is to list the remaining jurisdictions by May of next year The major reason why we have accelerated the schedule of listing the states, during the course of writing the Consolidated Regulations, it became clear to us that the Hazardous Waste Management Program which potentially, at least, controls some of the same practices was going to come on line much more rapid then our original intentions phasing in the UIC Program. This raised the possibility of allowing in some states, at least, a possibility where hazardous waste disposal would be forbidden under the terms of RCRA, but that underground injection would not be controlled and you would, in fact, create a loophole or even a positive incentive for people to dispose of underground. To avoid that possibility, we have now tried to match up the time in which these two controls would come in unparallel.

Once a state has listed, according to the legislation, the state has 270 days to develop a program with which it ta the primacy for implementing these regulations. That 270 da may be extended for another 270 days. The law also stipulat that EPA may approve a program in whole or in part. By whic is meant that either all the types of wells controlled by th regulations would be controlled by the state, and it will ta primary responsibility in implementing those coltrols; or th state could choose to take responsibility for control of certain types of wells, EPA would promulgate a type of progr to control the wells that the state did not control. If a state chooses not to participate in the program, of if its application is not approved, then under the law EPA must promulgate a UIC program for the listed state. There is als a grant program provided for in the law to support the state implementation of primary enforcement responsibility.

Taking this legislative mandate, EPA developed a se of regulations proposed on April 20th, where the fundamental concept was one of containment, basically to try to permit injection but to try to assure that the injected fluids stay where they are suppose to stay. There are several terms in here which might be worth mentioning. One of these is that a test of containment, the regulations now offer the term, the migration of fluids into underground sources of drinking water. This is a change from the earlier proposal and comme is requested in the preamble on that concept on the test of do you tell whether endangerment of a drinking water source occurred.

The regulations also propose a definition of underground source of drinking water and again, comment has been requested in the preamble on that definition.

Fundamentally, what we've said as a general rule, anything which is currently in use as a source of drinking water, or anything which is capable of yielding water with fewer then 10,000 parts per million of total dissolved solids should also be designated as a protective underground source of drinking water. However, if the aquifer is not in use, and if it meets one of three conditions, it is oil or mineral or geothermal energy producing, it is located in such a fashion that it is impractical or dis-economic to use that water, or if it is already contaminated in some other fashion that aquifer need not be designated as an underground source of drinking water. Comment is again requested on that proposed definition in the regulations.

That concept of containment that I speak of is to be achieved in the regulations through the application of technological requirements, basically good engineering practices applied by class of weld to the siding construction operation and abandonment of these practices.

There is a provision in the proposed regulations which say that, if migration of fluid still occurs even after all of these requirements have been applied, the director, the reponsible official for the program, may apply additional requirements including the closing of the well if migration is still occurring.

Let me quickly turn to the basic program requiremen what are sone of these things that we are talking about? We looked at a number of possible ways of contamination and tri to fashion various kinds of restrictions or controls to meet the various pathways of contamination. First of all, one way in which these fluids can escape into the environment is through faulty well construction itself. To meet this pathwa we have proposed a concept of mechanical integrity which basically says that the well has to be sound in construction and there cannot be significant migration in between the out casing and the well bore. Comments have again been requeste in the preamble on this specific approach, the test that we suggest in demonstrating mechanical integrity as the over-al concept.

Another pathway of contamination is nearby wells. Once the pressure, the incremental pressure in the injection zone is created there is a possibility of forcing either nat. fluids or injected fluids back up out of that area through man made conduits. The concept of meeting this is proposed as the area of review which may be done either as set as a flap 1/4 mile or other arbitrary distance, or it may be

determined on the basis of a mathematical equation. Once th area of review is described, the wells which penetrate, thes may be abandoned wells or active wells, which penetrate the injection zone within the area of review must be looked at. If those wells are faulty or could serve as conduits for the pressurized liquids to come up, some appropriate corrective action must be taken. Comments again are requested on this approach.

Third possible way in which you could have fluids move into underground sources of drinking water is through faulty or fractured confining layers. Here there is a varie of sighting requirements, control of injection pressure and various other operating requirements.

A further way in which contamination could occur i through the direct injection either into or above the drinki water source. Basically, we couldn't imagine very much to about this engineering practices and essentially there is a ban or a phase out suggested for these kinds of practices.

Finally, another pathway is the lateral displaceme of fluids, and here again a variety of sighting controls, controls on injection pressure and monitoring requirements are applied. There is comment sought especially with regar this fifth class of area, because in order to pick up all o the wells we can,by lateral displacement create some kind of contamination, we also extended the scope of covera of these regulations for only those wells which inject into or above a drinking water source to all injection practices. That is highlighted for you in the preamble and, again, comment is requested on that extension of scope in the regulations particularly with respect to any problems that might be created by picking up off-shore wells.

What are the tools for control that the regulations propose? There are basically 5 of them. The law says EPA may set the minimum requirements to control either through permits, specific case by case permits, or by rules. In the event we have proposed 5 tools. Certain kinds of wells, Class I wells, new Class II and Salt water disposal wells, Class III wells must be controlled by permits. There is a comment requested whether we are using the permit tool in an appropriate fashion.

One variant of the permit is a concept called the area permit, wherein if a well is operated under the control of a single operator, if it is injecting into the same stratum, if it's for the same purpose, if it's essentially of the same construction, the operator may apply for and obtain the single area permit to cover an unlimited number of holes in the ground The big advantage is that once you obtain that that additional wells that meet the same criteria of being of the same construction, for the same purpose et cetera, may be granted administratively and you need not go through the formal public hearing process. Comment is requested on all aspects of the area permit concept.

We also have interim rules specified here. In the case of existing wells, the regulations say there are 5 year: in which the permitting authority must repermit existing wel! While a well is waiting for its turn to come up, it will be authorized by interim rules. There are also permanent rules Existing under Class II, Class IV and Class V wells are pro- posed to be controlled by general rules. The rules are to apply essentially the same requirements that would apply to that type or class of well under the permit.

Finally, we have also recognized in certain instanc it is required that injection be possible in very quick orde and so we have propsed the possibility of a temporary author ization of two types. In cases where you would have signifi cant risk to the environment, temporary authorization may be given for injection. The kind of situation this is intended to cover is, for example, if you have a spill of toxic chemi and environmentally the soundest way to get rid of that stuf is to put it down the well which could in fact accept that; but at the moment, no such injection is authorized into that well. It is desirable to be able to have this toxic chemic: disposed of through that particular well and a temporary authorization should be possible. Another situation is wher in gas operations an irretrievable loss of natural resource:

might occur unless injection were possible. This is the second type of situation in which temporary authorization would be contemplated. Again, comment is requested on the entire concept of temporary authorization whether it is too strict,or too loose, or whether it is properly formulated.

As I mentioned, the requirements are to be applied by classes of wells. We have tried to divide the universe of practices into five major groupings to enable us to set reasonably consistent requirements by type of well.

Class I wells are those by definition which involve the industrial, municipal disposal of waste for the nuclear storage disposal, and by definition these are to inject below the deepest source of drinking water in the area. Our best estimate is that there are approximately 400 of such practices or will be the first 5 years in operation.

Class II embraces all of those classes which are related to the production of oil or gas.

Class III wells are all of the special process wells, which may be either the solution mining of chemicals or minerals, in-situ classification and the production of geothermal energy. We estimate that approximately 2,000 of those exists as far as we know today.

Class IV wells are ones which are strictly defined as shallow wells which inject into or above drinking water sources which are operated either by generators of hazardous waste as defined under RCRA, or are operated by hazardous waster management facilities as defined under RCRA. We estimate that approximately 7500 of those exists. I should point out that when we drafted that particular language, we did so again to line up with the Hazardous Waste Management regulations and we were aware when we drew that requirement that such a formulation could in fact embrace shallow wells operated by one of these facilities which itself, in fact, ma not dispose of hazardous waste. And so a comment was put in the preamble specifically to elicit information on how often this would occur and what that particular definition would cause in the way of problems.

Finally, Class V is the all other wells, this embra a broad variety of beneficial practices like intentional recharge of aquifers to air conditioning return flows, agricultural irrigation wells, etcetera. Our best estimate is that there are at least about 1/4 of a million of such pract

To turn to the specific requirements class by class let me first quickly run over the requirements that apply to Class I, the industrial, and municipal and nuclear wells, an Classes III, IV and V. Classes I and III are to be controll by permits, as I said before. They are to demonstrate mechacal integrity initially and at least once every 5 years ther after. The area of review must be applied and corrective action must be taken on faulty wells within the area of revi

Construction requirements are set for these wells, and the preamble request comments on the appropriateness of those construction requirements. Abandonment requirements also apply and there is a financial stipulation that the operator of that well must demonstrate in some form, not necessarily a bond, but in some form must demonstrate financial responsibility sufficient to abandon the well properly at the end of its usefulness. Monitoring requirements are applied, orderly reporting requirements to the permitting authority are applied. I should point out in this regard, that on Class III in the early 1976 proposal we did get extensive comments, we did make changes in response to those comments but certain others we want to confess one more time, and so the preamble goes through a very lengthy explanation of the kinds of considerations that we've looked at, the kinds of alternatives we've thought about for Class III, and solicit explicit comments from you, the public, on the appropriateness of what we have done so far, and what other things we might do in the area of Class III. The central question here is that given the diversity of wells which may be covered by Class III whether we have tried to span too great a diversity of wells with a single set of controls, and what if anything we should do about that problem. If indeed a problem exists.

Class IV wells, as I mentioned, are those owned or operated either by a generator of hazardous waste or a

Hazardous Waste Management facility. We could think of no good engineering practices to apply to these wells to make them safe if they were injecting into or above a drinking water source. And so basically, the requirements are that no new such wells may be constructed, existing ones are to b phased out in three years. There are monitoring and reporti requirements for these wells, but we have chosen not to appl either area of review or mechanical integrity requirements. First, because the construction of these wells may not be amicable to mechanical integrity tests; secondly, since they are being phased out in three years, there wasn't very much point in making people go to the expense if the final result was the phase out in any case. The abandonment of su wells was to be a part of the enforcement plan developed by the responsible authority. Comment, of course, is requested ~~our formulation of Class IV.~~

Finally, on Class V which includes this huge catego of all other, we did not feel that at this particular time E had the wisdon or the knowledge to formulate adequate requir ments for this class. So there is one action requirement fo these wells which is, that anyone of them which poses a significant risk to human health must receive immediate attention, and some kind of appropriate corrective action. Beyond that, there is a requirement for a two year assessmer to be supervised by the permitting authority; and based upon that assessment and the recommendations flowing from them, future regulatory requirements may be laid by EPA. There is a comment requested both on the basic approach to Class V, its appropriateness, as well as the two year assessment, is it realistic?

Finally, on these particular classes, the cost that our contractor estimates is approximately in the neighborhood of $143,000,000, total cost over the first five years of program operation. That breaks down roughly about $125 or so for industry, about $17,000,000 for the states. The biggest item of cost in there is about $120,000,000 for Class IV wells and that largely estimates the alternative means of disposal that we anticipate that Class IV operators will have to go to once the Class IV well itself is closed.

Let me finally turn now to Class II wells where virtually everyone of the things I'm going to mention now is specifically identified for you in the preamble, discussed at some length, and comments are requested in detail. The method of control that we have proposed for Class II, we have proposed permits for all new Class II wells and all existing salt water disposal wells. We have proposed that a rule for existing enhance recovery of hydrocarbon storage wells would be appropriate. We felt here to some extent that there was a greater incentive for the operator of an enhance recovery well to take care of his well and to make sure that it is appropriately sound and so we felt that some loosening of a case by case permitting requirement would be accomplished wi out an undue loss of environmental benefits. Mechanical integrity is required for all Class II wells. Area of revie requirement is applied to the new wells only in Class II. T give us an opportunity to re-think this particular judgment, we are going to have a mid-course assessment after the first full year of program operation which will allow us to look a actual fuel data to see what we are finding in terms of the abandoned well problem, and that particular decision will be reconsidered as part of that mid-course evaluation. Comment again of course, are requested on all of these specific item In terms of casing and cementing requirements for Class II, we here, again, varied the requirement from the other classe Wells in new injection fields must, in fact, protect all und ground source of drinking water as defined in the regulation Wells in existing injection fields whether it be existing we or new wells, or newly converted wells, as long as they are an existing injection field, are to protect the historical l if the state has regulated, and if the state has applied som level of protection that an existing fields that historical level is acceptable under the way we have proposed it. Comm is, of course, requested on that.

Finally, the abandonment of financial responsibilit requirements are the same as for the other classes. Varying frequency of monitoring is required, and annual reporting is required from the operator. The total 5 year cost estimated for Class II wells alone for the first 5 years of program operation is in the neighborhood of $665,000,000, this breaks down to something on the order of $646,000,000 for industry and approximately $19,000,000 for states. One thing that is worth mentioning here is that the way these estimates were constructed. The contractor tried to estimate the number of faulty wells that would have to have some kind of corrective action taken on them. Then multiplied that frequency by an assumed unit cost for that particular kind of operation, recementing or whatever, so the bulk of the cost approximately $487,000,000 out of the $665 that I was speaking of, directly relates to the size of the environmental problem. To the extent that the contractor was conservative in his assumptions, and there are a great many more leaky or faulty wells out there the cost will be higher. To the extent that the contractor over estimated the problem, and there are many fewer wells that need attention, the cost will not be anywhere near that high. The contractor estimated something on the order of 21,000 wells that would need some kind of action on them. Finally, based on EPA's own work, we have tentatively looked at and concluded that the possible impact of these regulations would be something on the order of loss of production of 9,400 barrels per day, which is a fraction of one percent of total annual output of any of the states.

Let me quickly speak now to one more item, the relationship to the Hazardous Waste Management Program. I'v already mentioned the accelerated listing of states, and comment is requested on the states we have listed, and our plans for listing the remainder. Basically, the separation have sought between UIC and Hazardous Waste is that the Underground Injection Control Program would be the controll mechanism for regulating the holes in the ground. To the extent that there are surface facilities associated with an underground injection control operation, which deals in hazardous waste, the surface facility generally would have t obtain permits under the Hazardous Waste Management Program. But the hole in the ground would be subject only to an Under ground Injection Control Program and the requirements in the UIC program. In cases where no surface facilities exist but hole in the ground still deals in hazardous waste, the UIC permit will be the only permit the operator must obtain. Ho ever, in the special section 146.09, the RCRA requirements f record keeping, reporting and fulfilling the manifest cycle are applied through the UIC regulations to such people. All of this, of course, your specific comments are requested.

I think that pretty much wraps up what I wanted to say to give you a quick over-view. I apologize if I've been too long. Let me turn it back to the Chairman, Mr. Levin.

MR. LEVIN: Thank you, Paul. Ladies and gentlemen, because the primary purpose of this hearing is to receive public comment, and because we want to make sure that everybody who has registered to speak has a chance to do so, we will not entertain questions from the floor. However, for your convenience, at the end of the day if there is sufficient time we would be happy to respond to factual questions concerning the regulations which would be off the record and not part of this official hearing. For that purpose there are 3x5 cards available to you at the registration desk for you to jot those questions down.

In addition, a guide has been prepared called A Guide to the Underground Injection Control Program. It looks like this. That covers in summary form everything that Mr. Baltay covered and then some; so, if some of you do not want to go through the trouble of reading the regulations from cover to cover, this guide is a pretty good way for you to get information. I hope there are still some available.

Now for some housekeeping rules that I'd like to talk to you about before we get into the presentations. The room has been divided into smokers and non-smokers, which I'm sure you have already discovered; with smokers to my left and non-smokers to my right and I would request, for everybody's comfort that you would adhere to those rules. There will be an evening session tomorrow evening that will cover both the 146, that's the Underground Injection Control Regulations that we're goi to be talking about today, and the Consolidated Permit Regulations that we'll be having a hearing on tomorrow. There will be a single evening hearing tomorrow evening and that session is primarily for those who could not attend during t day sessions. Registration for that hearing will begin at 7 and end at 7:30, and the hearing will begin at 7:30 in this room.

Comments received at this hearing today and other hearings that will be held throughout the country, along wit any written comments will be made part of the official docke in this rule making process.

Now for your information, I'd like to just review where the additional hearings will be held. The next hearin will be in Washington, D.C. on July 23, 24, and 25, with July 24th designated as an evening session as well as a day session. The hearing will be held in the HEW Auditorium, 330 Independence Avenue Southwest, Washington, D.C. The next hearing will be held on July 26, 27, and 28th, with Jul 26th also designated as an evening hearing as well as a day hearing. That hearing will be held in Chicago at the Water Tower Hyatt, 800 North Michigan Avenue, Chicago, Illinois. The next hearing will be held July 30, 31, and August 1st, w the 31st being designated as an evening session. That heari will be held in Region Ten, 1200 6th Avenue, Seattle, Washin in the auditorium.

Some of you may not be aware, but due to public request, we have now set a fifth hearing. That fifth hearing will be held on August 28, 29, and 30th, U.S. Post Office Auditorium, Room 269, 1823 Stout Street, Denver, Colorado. In addition to having the fifth hearing, we have also extended the comment period for the UIC Part 146 Regulations to coincide with the comment period on the Consolidated Permit Regulations which will now end on September 12, 1979.

The docket or the public record, if you will, may be seen during normal working hours in Room 1045, East Tower, Waterside Mall, 401 M Street Southwest, Washington, D.C., that's EPA Headquarters.

We expect transcripts of each hearing within about two weeks following the close of the hearing. Transcripts will be available for reading at any of the EPA Regional Office Library. A list of those locations is available at the registration table.

Some more rules of conduct. Actually, the rules of conduct will take longer then some of the testimony, but I have to go through them with you. The focus of the public hearing is on the public's response to a regulatory proposal of the Agency. The purpose of the hearing as announced in the April 20, 1979, and the June 1, 1979, Federal Register Notices, is to solicit comments on the reproposed Part 146 UIC regulations. Comments directed to the proposed Consolidated Regulations will not be covered here today. Persons wishing to make comments on any portion of the Consolidated Permit Regulations should do so during the two days following this hearing. If you are interested in making a statement at the Consolidated Permit hearing, please see one of our staff at the registration desk. Now having said that, often times th way the regulations have been written it is difficult, and I am aware that it is, to divorce the parts 122, 123, and 124 from the part 146. In cases where the testimony appears to be germane to the part 146, I will allow that to continue. it is strictly a subject that should be covered tomorrow, I will have to ask the speaker to defer until tomorrow. I wil use my judgment in that area.

This hearing is being held, not primarily to inform the public nor to define the proposed regulations, but rathe to obtain the public's response; and thereafter, to revise them as may seem appropriate.

All major substantive comments made at this hearing and others received throughout the comment period, will be addressed during the preparation of final regulations. The Agency response to comments made by the public will be published as part of the preamble to the final regulations. Be in mind that these are national hearings, there is no need make your comment more then once. If you speak today, you do not have to repeat yourself in Washington next week. Written comments will be given as much weight as oral comments. Again this is not a formal adjudicatory hearing with the right to cross examination.

Member of the public are to present their views on the regulations to the panel, and the panel may ask questions of individuals presenting statements to clarify any ambiguity in their presentation. However, the speaker is under no obligation to answer questions of a broader nature beyond this. Although within the spirit of this information sharing hearing, it would be very helpful to the Agency if speakers would respond to questions. I would appreciate it as each speaker steps up to the rostrum that he indicates to me whether he will respond to questions. If he forgets to do so, I will ask him.

Due to time limitations, I do reserve the right to limit lengthy questions, discussions, or statements. I will ask those of you who have prepared a statement who are going to make it orally, please limit yourself to a maximum of 10 minutes. If you have a written statement, I would appreciate it if you would try to summarize rather then read the statement If you have a copy of your statement, please submit it to the court reporter before beginning your oral presentation. If you wish to submit a written rather then oral statement, please make sure the hearing coordinator, Ms. Sharon Gaskin, has a copy. Ms. Gaskin is sitting at the table and has just raise her hand. Written comments will be included in their entire into the record. If from a speaker's comments, it appears that regulations have been improperly interpreted, I or any panel member may offer a clarification. Persons wishing to make an oral statement who have not made an advance request by telephone or by writing, should indicate their interest o the registration card. If you have not indicated your inten to give a statement at either today's hearings on UIC Part 1 or the following days of hearing on the Consolidated Permit Regulations, and you decide to do so, please return to the registration table and fill out a card. As we call upon an individual to make a statement, he or she should come up to the lecturn after identifying himself or herself to the cour reporter, and deliver his or her statement. We will break for lunch about 12 o'clock, and reconvene at 1:30. Then depending on our progress, we will either conclude today's session or break for dinner at about 5 o'clock and return.

We will make sure that everybody who wants to speak will have an opportunity to speak today. Phone calls will b posted on the registration table at the entrance, and restro are located outside of the main ballroom, I believe its down stairs. If you wish to be added to our mailing list for fut regulations or other material, please leave your business ca or your name and address on a 3x5 card at the registration d

Finally, just relax, this is an informal hearing, it looks like its going to be a long day. If anybody wants to tell an Aggie joke depending on the time, I will allow it.

I will now read the names of the people that I have who have registered and desire to make a statement, in the order that I will call upon them. If there is any error or over-sight, please let someone at the registration desk know. I apologize in advance, for any names I may mispronounced. The first speaker, Mr. Don Schnacke, Executive Vice-President, Kansas Independent Oil and Gas Association; next, Mr. A. W. Dillard, President, Permian Basin Petroleum Association; after Mr. Dillard, Dr. James Miller, Assistant Director of Environment Affairs, testifying on behalf of the American Mining Congress, that's Assistant Director of Environmental Affairs, Freeport Minerals Company. Next, Francis C. Wilson, II, Chairman of Environment and Safety Committee, Independent Petroleum Association of American. Fifth, Mr. Herman A. Engel, President of East Texas Salt Water Disposal Company; sixth, Mr. James C. Frank, Environmental Consultant, Dupont; seventh, Mr. Richard L. Stamets, Technical Support Chief, New Mexico Oil Conservation Division. Next, Mr. Ken Hanby, Assistant Supervisor, Alabama Oil and Gas Board. By the way, if I'm going too fast you don't have to write this down, I'll read them again. Five at a time probably. Steve Kelley,Executive Director, Oklahoma Independent Petroleum Association; next, number 10, no name but

Panhandle Producers and Royalty Owners Association; Mr. Jer Mulligan, Chief Solid Waste and Underground Injection Sectio Texas Department of Water Resources; Ms. Babette Higgins Vice-President, Texas Environmental Coalition; Mr. Harold D. Wright, Chairman, National Energy Policy Committee, Texas Independent Producers Royalty Owners Association. Mr. Ralph A. Dumas, Director of Arkansas Oil and Gas Commission; Mr. James Greco, Director of Government and Industry Affairs Browning, Farris, Industries, Inc.; Mr. John G. Soule, Chie Legal Counsel, Texas Railroad Commission; Mr. Troy Martin, Manager of Engineering, Texas American Oil Corporation. We up to number 18. Mr. Charles W. Farmer, Petroleum Engineer, Wyoming Oil & Gas Commission; Mr. Bob Hill, Vice-President, TISUMEA, Inc., Corpus Christi, Texas. Mr. Clyde D. Ford, Senior Counsel, Texas Gulf, Inc., Houston, Texas. Arnold C. Chauviere, Assistant Commissioner of Conservation, Office of Conservation. Mr. David L. Durler, Supervisor, Environmental Affairs, Texas Uranium Operations, U.S. Stell Corporation, Corpus Christi. Mr. Mark Polizi, Planning Engineer, Union Carbide Corporation, Metals Division, that's in, I'll try to pronounce this name, Benavides, Texas. One more, Mr. J. R. Andersen, Manager, Environmental Affairs, Owen Corporation, Lake Charles, Louisiana.

We will now begin with our initial speaker, Mr. Don Schnacke, Executive Vice-President, Kansas Independent Oil ar

Gas Association, who will be followed by A. W. Dillard, President, Permian Basin Petroleum Association. Mr. Schnacke.

MR. DONALD P. SCHNACKE: I am Don Schnacke of Topeka, Kansas, and I am Executive Vice-President of the Kansas Independent Oil and Gas Association. And I appreciate the opportunity of being put up early in the agenda so that I can move on to another hearing this afternoon, that has equal importance to our association.

KIOGA was founded in 1937--

MR. LEVIN: Mr. Schnacke, will you answer questions?

MR. SCHNACKE: I will.

MR. LEVIN: Thank you.

MR. SCHNACKE: Our association was founded in 1937 primarily to improve the market for the crude oil and natural gas program, and to promote the welfare of the oil and gas industry in our state. We represent the voice of the majority of the oil and gas producers in Kansas.

Our purpose of making these comments today is to call attention to the plight of the small stripper oil producers in Kansas, and to make certain technical comments pertaining to the proposed rules.

We understand the intent of the Act, and for that reason it is difficult for us to generally oppose the plan, but we would hope that a moderate posture could be taken to develop so it will not adversly affect the future of the small oil and gas producers of our state.

Our Association was represented here in Dallas on October 13, 1976, where we presented a brief oral statement. We followed that with written comments later, and filed with your Agency. Some of our objections have been met, and we have still more objections to the procedures which we will briefly leave with you.

We again call to your attention under the heading o the Act, Legal Framework of the Regulations, which states th the proposed rules are not to interfere with or impede oil a gas underground injection, and that it is further meant to mean stop or substantially delay such activity.

We continue to believe that the proposed regulation will stop and substantially delay injection activity in Kans because of the detailed requirements, and economic expense t implement the regulations.

Kansas has nealy 1,900 producers and producing enti operating nearly 51,000 oil and gas well in 87 counties. Mo of the oil produced is classed as stripper, averaging 2.7 ba of oil per day. The overall production per well throughout Kansas is only 4 barrels per day. Out of 1,900 Kansas produ 150 of these produce one barrel or less perday and many of t down to 0.2 barrels or, you probably haven't heard this befo but 8.4 gallons per day. The water produced with this produ is immense, nearly 8 times the amount of water times the oil that we produce. We have approximately 13,000 disposal and injection wells with 2,100 waterflood projects.

For that reason, we continue to believe the regulations will stop or substantially delay oil production in Kansas, Bring on premature abandonment and plugging, because of the increased federal regulation and expense, generally creating an atmosphere of increased economic burden not justifying the future development of minimum production in our state.

In that regard, and responding to your request on page 23748 under Economic Impact, to consider an exemption for small producers from these requirements, we again refer to our January 12, 1977, written comments, produced at considerable expense to our Association by a competent consulting petroleum engineer practicing in Kansas. This report reflects economic impact date, and does justify an exemption for small stripper operators.

We believe the exemption should be at least limited to stripper production, but remain under an approved, recognized and established state jurisdiction which we have been doing since 1936 in Kansas.

Additionally, in face of the national urgency of encouraging increased domestic production to offset out dependency on foreign crude oil import, these proposed regulations should be implemented only in such manner not to disturb the maximizing of the life of low production wells typically found in our state. We believe the regulations should permit the substitution of an ongoing effective state programs for all or part of the federal program. This would be the least dis- ruptive and the least costly action that could be taken. Certainly in Kansas, this would be done with minimal difficu I understand the State of Kansas will probably appear at a later hearing, public hearing, where they will present their view.

We have made, in the interest of time and the numbe of witnesses you have, we have prepared through our Environ- mental Committee 8 technical comments that I'll just put int the record, if the reporter will put them in the record, I think you'll pick them up and debate those in due time.

We do ask that we be permitted to update our 1977 written comments so that we can comment both on this section and on the permit section which we didn't receive until just last week, and we haven't had a chance to circulate those around; however, we'll get those to you by the September 12t period. We will include in that report economic justificati for establishing an exemption for minimum production which f the first time you have reacted to in your proposed rules.

MR. LEVIN: Thank you, Mr. Schnacke. Questions by members of the panel, please. None? Thank you very much.

(The following are the 8 technical comments offered by KIOGA

Section 146.06 Area of Review: The computation of t zone of endangering influence on Class II wells using the alternative 2(C) formula seems too complex and meaningless. We suggest this alternative be dropped.

Section 146.08 (b) Mechanical Integrity: This requires a combination of mechanical integrity tests per well. We believe one test is all that is needed and the expense of more then one is not justified.

Section 146.22 (d) Construction Requirements: Apparently, the rules require that old injection and disposal wells must come into compliance with the requirements for construction of new wells. In Kansas, this requirement would be difficult to comply if not impossible in may cases. The rules should provide for cases where compliance is impossible so that production can continue without disruption.

Section 146.22 (b) Construction Requirements: We believe the number and type of logs and tests should be flexible and left to the discretion of the state director. The cost of these logs and tests are very high and much of these services are not readily available in Kansas.

Section 146.23 (b) Abandonment of Class II Wells: We believe the requirement for a performance bond should be left to discretion of the states. We believe the states should be given broad latitude in establishing one of several acceptable plugging and abandonment procedures. We anticipate small operators having difficulty obtaining a performance bond.

Section 146.24 (b) Monitoring Requirements: Consistent with our comments of October 13, 1976, we believe weekl monitoring is unrealistic for salt water disposal. This sho be on a monthly basis, the same as provided for injection we

Monitoring of gravity disposal wells is meaningless because this type of injection does not endanger ground wate This monitoring requirement should be dropped from the requirements.

Section 146.24 (b) (4) Reporting Requirements: The maintenance of the results of monitoring for three years is impractical for Class II wells because of buying and selling leases and the short life of these wells. The annual report required under Section 146.24 (c) (1) could contain this material.

Section 146.24(c) Operating, Monitoring and Reportii Requirement: We abhor the number of reports and the complexi thereof. Small Kansas stripper operators, many operating out of their homes, do not have sophisticated staff for engineeri and legal reporting. Many do not have secretarial staff and are overwhelmed by federal reporting requirements at all leve We ask that you reduce the reporting requirements and limit them only to that which is absolutely necessary.

Mr. Levin: Next speaker is Mr. A. W. Dillard, President, Permian Basin Petroleum Association, to be followed by Dr. James Miller, Assistant Director of Environmental Affairs

Freeport Mineral Company.

MR. A.W.DILLARD, Jr.: Mr. Levin, thank you, and members of the panel. As Mr. Schnacke said in view of the number of the people testifying, I will skip alot of this but I do wish this whole testimony be put into the record.

The Panhandle Producers Association and the West Texas Oil and Gas Association are joining us in this statement so you can scratch the Panhandle Producers' testimony.

My name is A. W. Dillard, Jr., I am President of the Permian Basin Petroleum Association, representing approximately 1,500 members located in West Texas and Southeastern New Mexico.

I am an independent oil and gas operator, with approximately 32 years of experience in drilling for, finding and producing both crude oil and natural gas in West Texas, New Mexico, Oklahoma and Mississippi.

The proposed, and re-proposed rules of the Environmental Protection Agency, to carry out and implement the intent of Congress, demonstrate major flaws in conception and basic thought.

Firs, the EPA, after 4 years of work in this area, has not yet detailed an existing problem. In the industry, we know of very few problems of groundwater contamination, and these were caused by practices that were in affect 20 to 30 years ago. These practices were changed through cooperative investigation and problem solving by industry and appropriate

State Regulatory Agencies. The recent study of the IOCC sho no active sources of groundwater contamination from oil producing operations in the major producing areas. And this, of course, is Texas, Oklahoma, New Mexico, Louisiana and Arkansas. I believe that report has been submitted to the EPA a couple of times already.

Let's go on to Section 146 itself, and I will deal only with Class II wells.

In West Texas, we have some water out there in the neighborhood of 2 to 3,000 ppm TDS. This can be used for livestock water, but if you do you've got to keep your cattl off the salt blocks. Otherwise, you are going to kill your cattle.

We use some water in the neighborhood of 5,000 ppm TDS for irrigation purposes, but it will ruin the top soil u you have a very good leachate system for the top soil.

Local waters in our area. Midland has a well water supply of 800 to 900, with a surface lake supply that ranges in 1,500, now this is in ppm TDS. Fort Stockton well water 1,700 to 1,800; Odessa, surface lake water supply is 1,800 t 2,300; Monahans is 500 to 750. State recommendations are 1,000 ppm TDS.

By dialysis process alone, to treat waters of 2,500 ppm TDS to 500 ppm TDS is a cost of $1.25 per 1,000. Labor cost will add an additional cost of 30¢ to 40¢ per 1,000 ga more and this doesn't even take into consideration the cost of the plant or the other equipment.

Section 146.06. The formula set forth may be feasible for certain areas, but it should be left to the operator to determine whether to use a 1/4 mile radius of review or use the formula. And would somebody please explain to me, and I've studies hydraulics, what is storage coefficient?

Section 146.07 was misnumbered as 146.01. State regulatory agencies, having jurisdiction of such matters, prescribe to the operator what corrective action must be taken. The agencies have the authority to order suspension of operations of such Class II wells, and order corrective action followed by inspection during, and after completion of such work and approval before recommencement of operations of such wells.

Section 146.08. There appears to be no need to perform two tests to prove mechanical integrity of a Class II well. A simple casing-tubing annular pressure test to some reasonable pressure should be adequate. Care should be exercis so that the casing of an older well is not deliberately destroy by senseless, or stupid pressure test requirements where exterior corrosion or galvanic action could have weakened the casing to a point below original specifications.

If a failure is noted in a tubing-packer-casing pressu test, the operator then has a number of options in which to locate the failure point and take corrective action.

Section 146.08(c). The cementing information shoul prove that no vertical migration is possible. Surface casin cemented by pump and plug method and the circulation of ceme to the surface is requirement enough to protect potable ground waters. The top of cement by temperature survey on a long string is also enough information. The other listed lc are no more conclusive of an adequate cementing job than a temperature log. Past experience in an area dictates the cementing requirements for any type of well.

Section 146.08(d). The administrator should be required to make the decision on new mechanical integrity test within 30 days after the same is submitted to him by the director.

As a note to the EPA. If an operator is drilling a injection well for enhanced recovery operations, or a dispos well for produced waters, he is usually in an area of vast information and past experience. Therefore, your additional information requirements are superfluous and would add nothi except extra expense. The operator has an economic incenti to drill and complete either type of well with the best mechanical integrity possible, because it is his desire to h such a well to last for many years without problems. His knowledge and experience in this area probably far surpasses that of any administrator or staff member with no knowledge oil field operations.

Comment to EPA at the end of 146.08, it would have been better if the EPA had issued the technical guidelines o acceptable methods for conducting and evaluating the permissible test to demonstrate mechanical integrity.

Section 146.09. In the event that Congress decides that the EPA must prove that oil production waters are hazardous waste, will a Class II well be only subject to the 40 CFR 146 until such time?

Section 146.21. Do you propose to issue forms for a Class II well application?

Section 146.22(d)(i). Directional surveys in the State of Texas are only required on those wells which are purposefully deviated or are in areas of known high deviations due to abnormal formations. We use simple inclination tests which are adequate for this, and we have somewhere in the neighborhood of a 5 to 3 inclination variance which is all that is allowed.

Directional surveys are just absolutely not essential in a case such as this, unless your well's facing is maybe on every 2 acres or something like that, you don't have any possibility of getting cross migration.

Section 146.22(d)(2)(i). The logging of a surface hole before casing is run is not only a dangerous situation, due to the possibility of the logging tools getting stuck and be unable to recover same, but it is a useless and unnecessary expense and will not provide any material information not already known.

Section 146.22(d)(2)(ii). The Texas Railroad Commission requirement to circulate cement by the pump and p method on all strings of surface casing, at the depth specified by competent geologists of the Texas Department of Wate Resources, adequately protects the potable subsurface waters of the State of Texas. Even those waters which are not pota at deeper depths, that the state has designated to be protec on intermediate or long string cementing jobs, are done by the Commission's direction.

Other oil and gas producing states adjoining Texas also have more than adequate rules and regulations for the p tection of the underground water resources of their state.

These logs as set forth would be of absolutely no ~~benefit to the EPA, or the operator~~ of ~~such a well, and~~ are an unnecessary added expense.

Section 146.22(d)(3)(i) and (d)(3)(ii). Again, let me emphatically emphasized that in the areas of drilling Cla II wells, the operator has at hand a vast amount of past inf mation and experience, and these logs proposed by EPA are ju not all that necessary. Only logging that need be done is t which the operator deems necessary for his work or informati

Section 146.22(d)(3)(iii). A temperature survey tc indicate the top of cement outside the casing is adequate.

use of cement bond long should be at the discretion of the operator. The temperator log to determine packer setting depth would be more then sufficient.

Let me comment here. The other day on PBS I had a chance to see a Stock Analyst reviewing what he thought was going to be good stocks for buying. His highest recommendati[illegible] was Slumber J. I think he had a look at these proposed rates before we did.

Section 146.22(e). The information, requested under this section, is subject to some wide variations by actual measurement or calculation and/or is subject to interpretation or extrapolation that again can vary by wide multiples. Some of this information may have to be determined by coring, a very expensive operation. Some information may be available from previous operations in the area, but the cost to obtain this on each Class II well is rid~~iculous and of not benefit.~~ The EPA should prove real need, use, value and cost effectiveness.

Section 146.23 Abandonment of Class II wells, part (a) The rules of the Texas Railroad Commission require prior approv of all plugging operations and, in general 100 percent of the operations are currently witnessed by the RRC field inspectors. This is also the case in New Mexico. Any addition, by other agencies, to these methods and procedures are unnecessary and totally wasteful.

Section 146.23(b). The various oil and gas produci states currently have in place either plugging bonds, or sufficient means to reach an operator's assets, such that additional bonds are unnecessary.

Section 146.24 Operating, monitoring and reporting requirements, part (a)(1). The calculation of fracture pressure is a somewhat inexact science and variations in thi range of 267 percent in our part of the country, this fractu rating can run from a 1.2 to a .4 or .5, so that will give y your variance there of 267 percent. No arbitrary standard c be set down that will fit all cases. However, from a practi and economic point of view, the cost of high pressure inject fluids in secondary and tertiary projects is such that every operator checks all projects and wells constantly to assure that the fluids are confined to the zone of interest and not being allowed to escape and be wasted.

Due to the character of most reservois, the horizon permeability and porosity is greater than the vertical. The fore, the fluids normally migrate in the horizontal easier than they do in the vertical. This is where your concern is is vertical movement and not so much in horizontal.

Section 146.24(c). It is hoped that the manner of reporting annual data will demonstrate some semblance of bas intelligence and reasoned thought. A study of the ideaology methods, and forms used by the DOE for the reserves reportin will demonstrate a great variety of things not to do. This information can readily be obtained from current state records.

Section 146.25(a). My only comment there is, what does 122.36 say? I keep getting referred back there all the time and it refers back to 146.

Section 146.25(b and c)--

MR. LEVIN: We do that to see if you've really read the regulations.

MR. DILLARD: Five times. Section 146.25 (b and c). The collection and presentation of these maps and data will be both costly and time consuming to prepare, and represent something that industry has long done on an informal basis. This data must be confined to public reports.

Section 146.25(d). Estimates of proposed rates and pressures present no problem to industry, however, detailed studies of injected fluids are unduly burdensome and serve no useful purposes. When you're running a secondary operation, you know what's going into that fluid all the time because it's a very controlled process. If you have disposal fluids, you know what's coming out and probably a one time analysis of that water is about all you all would need. You wouldn't have to have it every month or every 6 months, or anything on that order, it would appear to me.

Section 146.25(e and f). The requirements proposed under this section are truly burdensome and may, or may not, be impossible to ascertain and report.

Section 146.25(h). It could well be construed that a registered engineer would have to prepare and submit the information as required by the statement of the requirements under this section, and many independent operators are not registered engineers or do not have one working for them. A schematic drawings are more than adequate for such purposes. The industry probably does not have the personnel available carry out this program and this would serve no demonstratabl worthwhile purpose. This requirement does illustrate the fa that EPA has still not become knowledgeable about the indust whose purported problems it seeks to correct, and illustrate the fact that, although industry cannot operate with a staff lacking knowledge and experience, the federal government can

Section 146.25(i). Normally no formation testing programs are run on new injection wells, and industry has nc knowledge of what the Agency is thinking about here.

Section 146.25(l). Books could be written on this subject. Simply, in case of leaks, shut down, repair, and start injection again.The Texas Railroad Commission, the New Mexico Conservation Commission, the Oklahoma Commission, all inspect these things. If you have a problem they inspect it and see to it that mechanically it has the integrity that it should have and then carries on.

Section 146.25(o). Already handled in producing st by appropriate state agencies. Any cash bond will only further slow down or stop domestic production. Suggest the agency read current newspapers regarding energy shortage in the U.S. today.

Section 146.25(p). The statement of this requirement makes the assumption that the applicant will construct the facility, or drill and equip the well, prior to obtaining a permit. No operator of oil and gas properties can afford to make the investment necessary to drill and equip a well, or wells, and then wait on the typical federal agency to issue a permit. This statement demonstrates a complete lack of knowledge of the real economic world we live in. Again, how can mechanical integrity be demonstrated prior to completion?

Thank you, gentlemen. I will answer any questions that I may be able to do so.

MR. LEVIN: Thank you, Mr. Dillard. Members of the panel, any questions?

MR. BALTAY: I'm looking at 122.36, and I guess I'm wondering why you were puzzled by that statement.

MR. DILLARD: I don't have it in front of me at the present time, and I've been in Washington on another matter for about 10 days. When I read that I kept being referred back to something, and I never did figure out what 122.36 was saying. Seems to me I was being referred back to 146, and in 146 I was being referred back to 122.36

MR. BALTAY: You do understand that 122 will lay th fundamental program requirements.

MR. DILLARD: Yes, sir.

MR. BALTAY: So its the requirements of who is to apply for permits, and who may be authorized in other fashio The definition of the content of application is all defined for you in 122.

MR. DILLARD: I think I'm going to be covering 122, 123, and 124 tomorrow. It did appear inappropriate somewher because everytime I looked around I was referring back to 12 At the time when I started all this, we did not have the 12 23, or 24. We just bearly got those in. I'm like Mr. Schna we just bearly got them in. Thank you.

MR. LEVIN: Mr. Dillard, can you stay for a moment.

MR. DILLARD: Yes.

MR. LEVIN: You raised a number of questions in you testimony, and rather then tried to respond to them now, we will reply to you in writing. For example, what is the stor coefficient, et cetera, we will respond to you but not at th time.

MR. DILLARD: I appreciate it, because I tried to l it up in all sorts of hydraulic books and I never did come across it.

MR. LEVIN: You also might want to see one of our technical people here today, who, I think, can explain that you as we see it. Thank you very much.

MR. DILLARD: Thank you.

(The following 5 paragraphs are copied from Mr. Dillard's testimony that he wanted included in the record.)

"Second, the EPA has ignored 'degree of risk'. Oil field produced brines in no way present the same dange to life and health as most of the common chemicals to be disposed of from other industries. The fules, as promulgated, indicate great effort to be 'fail-safe' and do not consider that a 'risk free' society is not possible. We commend their worth-while dream and laudable theoretical goal.

"Third, the EPA apparently has little respect for the value of time or money. All design is a compromise and some trade-offs are inevitable. Economics cannot be ignored, and every activity reaches a point of diminishing returns, at which the prudent operator stops.

"Fourth, the EPA regulations, for injection wells, do not reflect the statement that the EPA has, in truth, inter-faced with competent, experienced state agencies in either the oil and gas producing states, or the BLM, who have been for years learning about underground waters, and developing operat rules to protect them.

"Fifth, the EPA has thoroughly confused people in many industries by the various conflicts between the UIC regulation and RCRA regulations. These differences must be timely resolve to prevent any increased effect on our current economic or energy supply problems.

"Sixth, the EPA has violated Federal regulations by setting public hearing dates prior to publication of propose rules. Thus, industry lacks adequate time to study the proposed regulations and prepare testimony. Surely, the federa agencies should take the lead in adhering to the 'laws of th land.'"

MR. LEVIN: Dr. James Miller.

DOCTOR JAMES MILLER: My name is Jim Miller, I'm Assistant Director of Environmental Affairs, Freeport Minera Company.

The statement that I'm submitting today will be on behalf of the American Mining Congress, an industry associat which encompasses the producers of the bulk of america's coa uranium, metal, industrial and agricultural minerals; and th manufacturers which supply mining industry. I'll be glad to answer any questions after the presentation, and copies of t written statement will be submitted to EPA later on during t week.

Today's AMC comments will address a few of the ma concerns of the UIC regulations part 146. Of necessity, the will be some over-lap of part 122. Although, we will presen those comments tomorrow. Detailed written comments will be submitted in September.

The proposed Underground Injection Control regulatio will affect all in-situ mineral recovery facilities which depend upon injection wells for their operation. These practice come under the regulations of Class III wells. Examples of these types of operations include the solution of mining of uranium, copper, potash, sale, and the recovery of elemental sulphur by the Frasch process. In general, in-situ mining of minerals is the process where fluid is injected underground for the recovery of valuable mineral or material.

United States depends upon this type of mining for a majority of its sulphur and sale production, and increasing amounts of uranium, copper and other mineral production.

Additionally, the use of in-situ mining techniques to develop new sources of domestic energy reserves, such as oil shale is quickly moving out of the experimental stage. In many cases, in-situ mining is the most economical and environmental sound method of developing a mineral resource.

I'd like to address comments to the economic impact given by EPA. The economic impact of the implementation of the underground injection control program to operate as a Class III well have been grossly underestimated by EPA. The total incremental 5 year cost to Class III regulated industries presented in the preamble of the regulations is stated to be between $2,000,000 and $3,000,000. These costs data were developed by EPA's contractor, Temple, Bark and Sloan, and a report and study in the final analysis of cost of undergrou injection control regulations. The economic analysis prese in this study of Class III wells was based on a draft of th regulations dated August, 1977, and contains numerous assum which were not discussed in the preamble by EPA. These assumptions are critical to the accuracy of the cost of UIC compliance for Class III industries. The incremental costs of compliance with geothermal wells and in-situ gasificatio is given a zero. It should be pointed out that these indus will incur significant cost in complying with the UIC regulations that are now proposed. These costs were not report because insufficient data existed as to the nature of these practices. Furthermore, it is assumed that current monitor requirements would be sufficient to meet UIC standards. How ever, the amount of additional information required, that is the mechanical integrity, logging, et cetera, were not considered.

These requirements will add sufficient cost to ope of these wells. And I might make a comment, that due to the push now for developing of alternate sources and of domesti energy reserves, the geothermal and other energy requiremen are going to become more and more important. These regulat will indeed impact them.

The incremental cost for in-situ uranium mining wa also given a zero. This cost was based on the assumption th

current state regulations governing this practice are such t the information now submitted to the state would suffice to obtain a UIC permit. Yet, in the report to the EPA, BPS sta "It is impossible to predict at this time what the economic impact would be to operators. The fact that EPA's contracto could not quantify the cost of compliance by this industry, does not mean that significant cost will not be incurred. I should be pointed out that information requirements of the proposed UIC regulations, such as well logging, and hydro-geological studies, and more comprehensive then most state requirements.

The technical requirements of the regulations also go far beyond what the state now requires.

Maximum compliance cost for the Frasch industry is given as $335. This cost estimate is inordinately low for Frasch operations carried out in marine environment, the requirements for five monitoring wells will cost well over $1,000,000, and that is a very conservative estimate.

The cost of cementing, mechanical integrity testing and logging has been estimated by one company to be over $22,000,000, for that company.

The economic impact associated with the UIC regulations should be re-examined, and refined, based on these pro posed regulations in order that a more accurate measure of t potential severe economic disruption to Class III regulated industries can be quantified.

Area permits. It is imperative that UIC regulations set up a frame work for the granting of true area permits. It is inconsistent to allow the issuance of area wide permits in Section 40 CFR, 122.37, and then structure the procedural and technical requirements of 40 CFR 146 to encompass only individual wells. The purpose of area permitting is to provide a reasonable permitting procedure in those instances where on-going operations are limited to a particular geographical or geological formation, and must have great flexibility in drilling new wells to maintain orderly production in that area of formation.

In operations suitable for area wide permitting, all wells are drilled, completed,operated and abandoned using substantially the same techniques. In these cases, regulations recognize that the operator should be required to obtain only one permit covering the area of operations. Furthermore, as it must be demonstrated that the procedure and techniques currentl in use are proposed for use and the operation meet the standards for approval by the administrator or director. Little is to be gained requiring the submission of duplicate data for each new well drilled in the area covered by the permit. And I refer you to 122.37(c).

The provisions of 122.37(c) requiring administrative authorization for each new injection well covered by the area permit are not consistent with the operation of realities of Class III projects. For example, Frasch projects are charac ized by numerous short lived wells within a compact area oft on 50 foot space. With the necessity of commencing the re- placement of expired wells within hours after their failure order to maintain formation temperatures, pressures, and pre the irreversible loss of valuable mineral production. Furth the location and mining design variables from the new wells depend on the very recent characteristic of the producing system. Thereby limiting the operators ability to provide advance information for permitting.

The requirement of administrative authorization is inconsistent with the area permit concept and is counter- productive to its purpose. So long as new wells are drilled and operated within the perimeters of the area wide permits, simple ~~notification after~~ drilling, giving pertinent data would serve administrative purposes and comply with the requ ments of the act.

In order for the area wide permitting concept to se its intended purposes, Parts 122 and 146 must be modified ar self-consistent. This will require that Section 122.37(a) b rewritten to reflect that once an area permit has been issue no additional authorization or permit should be required for the drilling and operation of new injection wells within the permitted area, except when the new well substantially devia from the condition of the area wide permit.

Area permit application should contain the informatio needed to initially permit the well injection practices taking place, or to take place in the area to be covered by the permit. Because of the dynamic nature of most Class III operations, it is impossible to specify the exact location, the number of wells, or where they will be drilled. The requirement for rapid action for replacement wells prevent loss of valuable mineral resources and mandates that no further authorization be required, and that simple notification be given after the well is drilled. This should satisfy the record keeping requirements of the Agency.

It may also be necessary to add definitions, such as, existing injection projects, new injection projects, and injection project.

To 122.3(c). The phrase, or project, should be added to all instances where permitting procedures are being discussed in order that area wide permit holders are not required to comply with individual well permitting procedures. The technical requirements of Class III in 40 CFR Part 146, should likewise be changed to include the project concept. For exampl 146.31(c) should read, no new Class III wells, and then the addition, or project, may begin to operate after an applicable underground injection control program becomes effective. Detai comments to be submitted later will indicate specific additions and changes that should be made in the proposed regulations allow self-consistency between 122 and 146.

Sub-classification. Class III presently includes well injection for the mining of sulphur by the Frasch proce solution mining, in-situ gasification of fuel sources, recov of geothermal energy. Due to the widely different technique and practices used in Class III injection wells, it is virtu impossible to structure one consistent set of regulations co ing all types of wells in this Class. For this reason, Clas III should be sub-divided. For example, for Frasch sulphur wells and other wells which do not inject into an aquifer, t is no need for a number of the requirements.

EPA has indicated that it is considering not requir such projects to monitor the injection zones, removing the requirement for the use of corrosive resistent materials, requiring formation testing for the project and not each wel and providing more flexibility in the requirement to demonst mechanical integrity. AMC whole heartily supports such effo

On the other hand, the solution mining of uranium a some other minerals, the mineral deposit normally occurs in aquifer. In such projects, it is important that the injecti zone be monitored. Also, thousands of wells may be required successfully solution mine a single uranium ore deposit.

Requirements for well logging and test data should therefore, be reduced to a statistically representative numb which should be retained by the operator and made available for inspection. This last sentence also encompasses, I think, most area wide permitted facilities.

Wells for in-situ gasification of fuel sources and the recovery of geothermal energy are a distinctively differen from either of the two types discussed above.

It thus seems clear that Class III presently includes apples and oranges. Sub-classification is mandatory to face the operation or realities of these several industries and prevent major unnecessary economic burden that would result in the premature abandonment of valuable mineral reservers, and failure to initiate those new projects so necessary for the economic health of our country.

Information has been furnished EPA and EPA's contract over a period of 3 years that conclusive show a strong similarity between underground injection operations and Class II wells and Class III wells. The same economic incentive exists in Class III as in Class II, to conserve fluid characteristics and maintain wells in good conditions free of leaks in order to obtain the maximum production of minerals.

There is, therefore, also an apparent economic incenti to Class III well operators which reduces the need for scrutiny of these operations to an elaborate system of case by case permits for existing operations. It is submitted that existing Class III projects should be regulated by a rule for the life of the project.

It necessarily follows from the similarity of Class and Class III injection wells, from the number of wells dril in Class III projects within a small area, and the fact that sometimes, particularly in salt domes, thousands of wells ar drilled in search of other minerals.

Proposal of an area a review should be applied only to new Class III injection wells. Likewise, the standard fo casing and cementing of Class III injection wells should not exceed the prevailing practice in a particular area or type of formation. If the regulations were cast in such a manner to provide discretion by the director in these matters, rath than as minimum requirements, the local conditions affecting such different types of operations could be adequately addre in the individual area wide permits; thereby, achieve the purpose of the act, the maximum benefit, and the minimum economic disruption.

Let me quickly summarize the principal comments the American Mining Congress with respect to the regulations of Class III wells. First, the economic impact of the proposed regulations which are based on a 1977 draft significantly un estimate the economic impact of these regulations on Class I wells. This proposal will have major economic impact on operators of these types of wells.

Second, no further permitting or authorization is needed for new wells drilled under and in accordance with an area wide permit. Technical requirements of Class III wells should consider the nature of Class III operations and corrective area wide permitting procedures.

Third,subclassification of Class III wells is mandatory, so that the major differences between types of Class III injection wells can be accommodated.

Fourth, there are strong similarities between underground operators of Class II and Class III wells and, therefore, an owner's treatment of Class II wells should be granted Class III wells, also.

Many of the matters brought up in these comments could be adequately addressed by granting broader discretion to the director, rather then maintaining the strict minimum requirement. The compliance with which may be either impossible, impractical or uneconomical. Thank you.

MR. LEVIN: Thank you, Dr. Miller. Questions from the panel, please? Mr. Gordon?

MR. GORDON: I believe, Dr. Miller, you indicated you had data on estimated cost of the proposed regulations. For example, you mentioned a figure, I believe, of $1,000,000 for Frasch mining.

DR. MILLER: That had to do with one site, the drilling of 5 monitor wells.

MR. GORDON: Will you be submitting to us as part of comments specific data on estimated cost that you've been talking about?

DR. MILLER: These are estimates that were presentec I believe, that individual companies when submitting comment: to EPA, will furnish the economic impact.

MR. GORDON: Thank you.

MR. LEVIN: I have a question. You also mentioned : your testimony that many of our requirements such as logging, are more comprehensive than what the states now require. Will your company submit any additional data as to which states these might be, and what specific elements are more comprehensive than the states currently require?

DR. MILLER: I know that one of the provisions of my company, Freeport Sulphur Company, will be submitting differences, specific differences, between the current practices ar the additional practices that are required.

MR. LEVIN: Ok, thank you very much, Dr. Miller.

DR. MILLER: Thank you.

MR. LEVIN: Mr. Wilson followed by Mr. Engel.

FRANCIS C. WILSON: I'll be happy to answer any questions from the panel as they come up.

My name is Tug Wilson, and I am appearing today on behalf of the Independent Petroleum Association of America. My capacity is the Chairman of the Association's Environment and Safety Committee. I'm an officer of Wilson Oil Company, Santa Fe, New Mexico.

The Independent Petroleum Association of America is a national organization with 5,000 domestic explorers producers of crude oil and natural gas. We appreciate the opportunity to be here today and present our general thoughts.

While,individually, the companies of our association are not important contributors to the overall energy supply, but as a group, we draw 90 percent of all the wildcat wells in this country, and have produced about half of all the oil and gas produced in this country.

We feel that we are the leading edge of our industry and the specific area is so important to our nation today, additional supplies. We are part of the solution of the near term energy problem. Mr. Carter, last night, indicated as he had before, that the solution is three-fold, stands on a tripod. One of the legs is alternative fuels, the other leg is conservation, and the third leg is additional supplies.

If any of those legs fail, the program fails and our country is in worse shape then it is today. We are in the business to do just that. Explore and produce more oil, we own no pipelines, we refine no product, and we sell to no consumer. We are at the source of the pipeline. We are anxious to find as much petroleum as this country needs, to meet the demand and avoid an unprecedented vulnerability both economic and strategic to foreign sources.

As a group, producers are frustrated by the ongoing fruitless attempts by government to find political solutions to essentially economic problems. Additional production is the key to the solution to the near term, and we are the suppliers of that production. We are pragmatists at heart. We've a saying in our industry, that if it makes since try i if it works use it, if it doesn't work, try something else.

By accepting the chairmanship of the Environment an Safety Committee, I hope to be helpful in achieving our join goal, protecting the environment.

The industries legitimate goal is producing as much petroleum as possible without unacceptably damaging the environment. The EPA's legitimate goal is to protect our envi ment as much as possible without unacceptably damaging energ production. I feel that these two goals can be made more compatible then they have been, and they must be for us both be successful.

With respect to the nuts and bolts technical commen on Part 146 of the Underground Injection Control Program, we will submit in writing our comments and suggestions of reach our joint objective, protecting the environment we live in the most efficient engineering practices available. We do appreciate the effort of the EPA to make the rules and regulations more workable. Responsiveness and cooperation over the last few years in the development of the regulations is encouraging, and we hope to be able to help further the refinements.

As you well know, the rules will have a serious effect on producer's ability to do our job. We must emphasize that large companies have staffs, and alternatives that we as independents do not have. The efforts, to date, have gone a long way towards that efficiency we both need for the success of the program. But delays and redundancies have to be avoided. The independent producers competitive edge is its flexibility, and its ability to take advantage of quick breaking events. The reduction of that will have a serious effect on independent producers and on their ability to find the sources of petroleum and gas that we need right now.

There are some basic points that must be emphasized, where existing rule, that is to say, state rules are working and problems are in hand and we do not feel that an overlay of more rules, paper work and enforcement is necessary. The EPA's general function is to assure that goal of protecting underground water, but where there are states that have no such rules, the EPA can be most helpful in providing guidance, and assistance in establishing an efficient program. We feel that the states must have the primary responsibility of administering a workable program. EPA can increase its effort to determine if the state programs do in fact work, and where they do, allow them to work.

Well, I am not personally an engineer, the other volunteers working on this project indicate the proposed logging and plugging requirements are redundant and in some places illogical. Detailed comments, as I said, will be for coming.

Both the EPA and the oil and gas producers are seek effective engineering practices for protection of undergroun water sources. We, as producers, simply cannot be permitted to be submerged in complicated, redundant, and unnecessary testing and reporting requirements.

In summary, our position is first, that where the states have adequate rules and regulations for the protectio of subsurface fresh water, the EPA should monitor those state to assure continued success of those programs.

Second, some of the rules that are proposed are larg unneeded and unnecessary and will be wasteful and inflationar and will definitely interfer with the expeditious production oil and gas so desparately needed by this company. The esti mate loss of only 9,500 barrels a days, would appear on first blush to be highly conservative, but even at that, based on current refining abilities,that breaks down to about 200,000 gallons of gasoline a day, and I am not looking forward to explaining that to our President, and certainly not to an independent trucker.

Let us refocus our attention on the new and cumberso regulation but on the desire goal of using what works. You'll find the independent producers of this country interested and supportive of the achievement of our joint goals.

Are there any questions?

MR. LEVIN: Thank you. Questions from the panel. Thank you very much, we'll look forward to your written comments on the regulations.

Mr. Engel followed by Mr. Frank.

HERMAN A. ENGEL: Mr. Chairman, I will answer some questions at the end.

For those on the staff who may not be familiar, we did, Ms. Phillips, accept the real responsibility on the East Texas Salt Water Disposal Company was formed some 38 years ago, with the primary purpose of protecting the environment in and around the largest oil field in the lower 48 states of the United States. Since inception, the Company, ~~under the strick~~ supervision of the Texas Railroad Commission, has injected approximately six billion barrels of sale water that have been recovered in association with oil production industry. Currentl we inject almost 700,000 barrels which is about 1/4 of a billion barrels each year, and that comes from about 6,000 wells that are produced in the largest project of this type of industry.

There has never, and I repeat never, been an instance reported in which these operations have been known to cause damage to, or pollution of, fresh water sources. And if you want to see what happens if we just get a small break in one of our pipelines, or somebody breaks it and one of them star to leak, the Texas Railroad Commission people are there like a covey quail. They just pounce right on us and make sure w keep the environment clean.

Now to stay within your time limit, I'll only highlight a few areas today and submit detailed written report later. And these comments pertain only to those portions of the proposed regulations relating to 146 Class II wells.

Despite the statement by the EPA in the Federal Register of Friday, April 20th that "EPA believes this reproposal represents a more flexible and workable regulatory scheme", the reproposal imposes many costly, non-beneficial and duplicative rules and regulations on those state regulat agencies, such as the Texas Railroad Commission, which have excellent pollution control programs, and on those who opera disposal and/or injection facilities in those states. The East Texas Salt Water Disposal Company then continues to strenuously object to the imposition of these regulations an is of the opinion that the objectives of the Clean Water Act can adequately be accomplished if the EPA will review the state's current control programs, such as Texas, and issue an order for those states with adequate controls saying, "Th State of __________ is required to maintain a program to prc all underground drinking water sources". That's strictly all we need as far as the Class II wells go.

The cumbersome complexity of the proposed rules must, in part, be attributed to EPA's efforts to write one rigid set of regulations applicable for the many thousands fields, oil and gas fields, whether they be 1,000 feet deep or 31,000 feet deep, or whether they happen to be in Alaska or off the coast of New England. There are just no two fields alike and virtually none of the reservoirs have absolutely homogeneity throughout.

The same degree of evvective protection of fresh water sources can be attained in a much less costly and complicated manner by providing a bit more flexibility in the decision making role of the various state directors.

As an illustration, more that 30,000 wells have been drilled to a depth of about 3,500 feet in the East Texas Field. Without fear of contradiction, one can state that no new information of value in protecting sources of drinking water will be forthcoming from many of the numerous required surveys, logs, tests, et cetera, in the drilling and operation of additional enhanced recovery injection wells. Absolutely no new information.

Per haps some of the following specific comments will be useful in considering changes needed to provide this flexibility to the state directors. To be specific, the following comments are for Part 146, Suparts A and C. And I do have one question of the panel that I'll ask you to answer later, 146.03 definition and reference is made to 40 CFR 122.03, and I can't find a .03 in the text anywhere.

Part 146.22, construction requirements. Several of the logs and other tests listed are certainly not needed well developed fields such as this or where existing systems are in operation. For example, (d)(1) deviation surveys wou certainly be adequate in lieu of directional surveys in almo all projects. And, of course, we don't even think that you need deviation surveys.

In (d)(2)(i) Electric logs and caliper logs in surface holes are certainly not needed where sufficient deve ment wells have been drilled and logged.

In (d)(3)(i) Gamma ray logs are unnecessary in almo all developed fields for this particular purpose. It is suggested that the last sentence of (d) be revised as follow The Director shall prescribe which of the following logs and tests shall be required in each field or project, instead of all of the following.

In (e) once the information in this sub-paragraph concerning the injection formation is a matter of record for the director, the required submission of same for each new well is superfluous in almost all instances.

It is suggested that the following be added to paragraph (e): "The information required in paragraph (e) of this section may be included by reference if the referenc is specific in identifying the information in question and is readily available to the direct, or the administrator in cases where EPA issues the permit."

Part 146.23 Abandonment of Class II wells, paragraph (b), what does EPA mean when it says, operators shall assure, through a performance bond or other appropriate means the availability of resources, et cetera?

It is suggested that the item be expanded somewhat so that the directors as well as the operators will know what is acceptable to EPA. There are other references made to these bonds, certificate, and other sources throughout the preamble even in Part 122, and other places; and I suggest that they all be written with the same wording rather then each one being different.

Under 146.24, Operating, monitoring and reporting requirements, (b)(3) mechanical integrity tests. The director should have sufficient authority to utilize any one of the methods listed under 146.08(b) rather than some combination of tests. These are not only costly tests, but they interrupt oil producing operations, and most of them don't tell you much anyway.

From a practical operating point of view, most of the tests listed under 146.08(b) are utilized to isolate a leak once a problem is already known to exist.

Part 146.25, Information to be considered by the director prior to the issuance of a permit. Much of the information required in this permit for new wells in an exis ing project will be readily available to the director by reference to previous permits and other sources.

It is suggested that the sentence in the first para graph, "The information required in paragraphs (b),(c) and (f) of this section may be included by reference, et cetera. be expanded to include paragraphs (d)(3), (e) and (h) throug (n).

Paragraph (o), in contract to the requirement,well I mentioned that. I think that should be the same as in oth places.

Now the following brief comment, Mr. Chairman, I have only one comment with respect to 122.37 and that's bec it's an intragal part of this. I'd like to make that.

Under Area Permits, 122.37(a)(1), the term within a single well fuel project or site in a single space. That tends to eliminate all projects when you say a single well field. There are no single well fields where you conduct injection. The following word is suggested, within the sam field (or reservoir) and within the same state. I think th your intent but you've got a single well field and there ju isn't such a thing.

In view of the uncertainty as to whether oil fields brimes and drilling fluids will, by any stretch of the imagination, be classified as hazardous waste, I'll defer any related comments for the appropriate time.

MR. LEVIN: Thank you, Mr. Engel. Are there any questions from the members of the panel?

This is an easy one so I'll clarify. You are correct, 122,03 was suppose to be 122.3.

MR. ENGEL: I just wanted to show you that I read it.

MR. LEVIN: I might add that I recall Mr. Engel's testimony 3 years ago, and he was much kinder this time. I might also add, that in case it is not clear, that silence doesn't necessary constitute acquiescence.

Mr. Frank followed by Mr. Stamets.

JAMES C. FRANK: My name is Jim Frank, and I am employed by Dupont. But today I'm appearing on behalf of the Texas Chemical Council. I am Chairman of the sub-committee dealing with the use of industrial disposal wells by industry.

The Council is an association of 77 companied with over 62,000 employees in the State of Texas. Over half of the nation's petrochemicals are produced by member companies in Texas.

The Council has a long history of cooperation with state and federal agencies in the furtherance of responsible environmental legislation and regulation. We appreciate this opportunity to make an input into the standards setting regu lations for the UIC rules and regulations.

The TCC, or Texas Chemical Council, has followed th development of the UIC rules and regulations under the Safe Drinking Water Act since their proposal in 1976. At that ti our concerns were primarily in the area of industrial dispos wells, although many member companies were also concerned wi the broader scope of controls coveered by the recovery of oi and gas, leachate mining and other well related activities. At that time, it was obvious to the various experts in these fields that the regulations were unnecessarily extreme in so areas and would cause serious economic impact. The EPA wise withdrew the regulations for further study and modifications

I did want to state that the member companies of TC are involved in well activities described in Class I, II, and III. However, the comments that I want to make are for Class I wells, or the industrial waste disposal wells.

During the last 2 years, the TCC and others have participated with EPA in several informal work sessions to help develop regulation which would meet the practical and economic objectives of the Safe Drinking Water Act. General we believe that Class I regulations as currently proposed ha achieved these objectives and provide practical and economic approach to protecting the groundwater without an unreasonab economic penalty to the country. However, we should qualify that by saying that this holds true only perhaps because the[illegible] are slightly less than 400 wells in this classification. Th[illegible] oil and gas industry having hundred of thousands, I can agree with their problems.

In this regard, perhaps the most important facture of the control strategy is the concept of separating the wells into the 5 classes and tailoring the regulations for each class. We support this concept and believe it allows improved opportunity to work out potential problems in one area, while at the same time moving forward in the implementation of the program in other areas.

Overall, we endorse the regulations as they address the permitting procedures. Specifically, the two-step procedure for existing systems, and the concept of area permitting. We also agree with permits for the life of the facility with a 5 year review regulation instead of repermitting. We also support the elements of an approvable state UIC program, and particular the concept of partial approval of a state program for the various classes.

Concerning the various technical aspects of the regulations, we believe they are adequate and do not represent excessive limitations. The optional methods for determining area of review are good; however, we believe the states should be authorized to vary the radius by regulation on the basis of geography and/or the type of well. We also believe that recognizing the potential for overlap between RCPA and the UI regulation is important, and we agree with the separating of them at the wellhead. We believe the other technical aspec such as siting, construction, surface casing, tubing and pack and annular injection are acceptable.

There is some question concerning the economic impac for Class I wells as they apply to industry. We believe the $5,000 to $35,000 range for testing to be reasonable, althoug probably on the low side. However, the cumulative cost shoul be in the range of $1,500,000 to $10,500,000 or roughtly 5 times the EPA estimate. As mentioned earlier, there are abou 400 wells and if you just do a simple multiplication, you see you are off on your numbers.

It also estimates the cost of remedial work at $15,0 to $100,000 to repair a well and the total impact to be $35,000 to $200,000. This apparently assumes only two wells in the whole nation that's going to be needing some upgrading Generally, most of the wells are already built the way the UI regulations define, but we would say that 2 is too small. Th apparently, we believe, this to be low by 5 to 10 based on the upgrading work that is currently being done by companies having Class I wells.

In closing, we appreciate the way the State of Texas particularly the Water Resource Department, and the EPA has worked together with industry and others in the redevelopment of the Class I regulations. This should serve as an example in the development of other regulations, such as those propos[ed] under RCRA. Where practical solutions to real problems are developed, and sufficient flexibility and latitude of engineering is allowed to deal with the unique characteristics of a system within the environment being impacted.

I would try to answer any questions you may have.

MR. LEVIN: Thank you, Mr. Frank. Are there any questions from the members of the panel. Mr. Baltay.

MR. BALTAY: First of all, could you come and speak at all of our hearings? The serious question that I have is that, you know, as you realized that the estimates are what we believe to be the best national economic estimates that we've got, do you have some specifics that will help us refine those numbers as we go through for the promulgation.

MR. FRANK: We could develop some and submit them to you.

MR. BALTAY: We would appreciate any help you could give us along those lines because we will want to refine our national estimates.

MR. LEVIN: Mr. Morekas?

MR. MOREKAS: Your point of comment regarding the Resource Conservation and Recovery Act regulations, would you be able to put forth specifics. Are you addressing to the proposed regulations or the ones that are in Parts 122 and 123?

MR. FRANK: Basically, the approach, I think, speci ally I think the way they subdivided to a greater extent the areas, like in Class I through Class V, it allows industry dealing with a special area to key in on that. In general terms, I think the RCRA rules are trying to solve all the nations problems with one squeaking set of very complex and very detailed regulations; and I don't think we're going to make any progress in the next 5 to 10 years until we deal wi the more serious problems first and not try to regulate ever thing at once.

Now that's still just a general statement, but RCRA I think, is headed for the same type of delay and controvers that the UIC regulations did 2 years ago. Everything was, I believe, was an overkill, and then there was a practical approach by EPA and they backed off and people who were bein impacted were able to discuss in non-adversary conditions wi EPA the type of controls.

I think the Class II and Class III people still wou not agree with me that the UIC regs have reached that degree of practical approach.

MR. MOREKAS: I understand you are referring to the over-all designation of hazardous waste as broad definition instead of relying to some form of hazard classification.

MR. FRANK: Yes, right.

MR. MOREKAS: Okay, thank you.

MR. LEVIN: Thank you, Mr. Frank.

I might add because we are no where near half done of our list of speakers, I do not intend to call a break. So if anybody feels that they need to leave the room, please do so when you have to. I've also been asked to scratch Mr. Charles Farmer for today of Petroleum Engineer Wyoming Gas and Oil Commission, he'll testify tomorrow.

Next speaker is Mr. Stamets followed by Mr. Hanby of the Alabama Oil and Gas Board.

RICHARD L. STAMETS: Thank you, Alan.

The only Aggie story I know is about the Aggie who left the State of Texas and joined the EPA Staff thereby, increasing the average intelligence level of both. (Laughter) Up until that time, I wasn't even aware that they had a Law School down there.

I am Dick Stamets, Technical Support Chief, with the Oil Conservation Division of the State of New Mexico. Besides that, I happen to be the Chairman of the Environmental Protection Committee of the Interstate Oil Contact Commission, and a member of the National Drinking Water Advisory Council. However, I am here today representing my position with the state.

These are preliminary comments that I am submitting here today on the reproposed regulations; and I would expect that our final comments when they are submitted to be somewhat more extensive, and perhaps changed due to clarification of issues which we have raised at this hearing today.

Further, due to the length and the complexities of regulations, we would request that the extension of comment period be made to October 15, 1979. We feel that it is inappropriate that EPA expect the state oil and gas regulatory agencies to review and develope comments on this tremendous package to all 4 sections, and you've got to read all 4 toge at a time when we are experiencing the highest drilling rate in years, and to do this over the summer when about half of staff is on vacation half of the time, it is really a tremen task and is something that EPA ought not to have dumped on u

The first three comments are in the preamble of the UIC Part. We concur with EPA's two proposals for aquifer exemptions. We feel that the states working with the Region offices of EPA can utilize these exemptions to reduce cost t ~~the states and~~ industry while still protecting usable underg sources of drinking water.

We agree that the annualus monitoring is one of the better methods of determining continued mechanical integrity of injection wells. However, some wells cannot be completed such a manner as to permit such a test to be taken, and it i believed that flexibility needs to be provided in this regula tion.

Further, we believe that it is useless to report re of annulus pressure data which show that there is no problem with the injection well, and we certainly hope that is left out of any final regulation.

We believe that Class III wells should be subdivided, so that each one is dealt with individually. For example, geo-thermal wells which return condensed geothermal steam, or hot water, to the originating formation should not be subjected to the same rigorous Class III requirements as a solution mining well. These more properly fit the requirements of Class II wells in that they are normally drilled, produced, and operated in the same general manner.

Section 146.04. The shpaes of aquifers and how they interfinger with, underlie or overlie mineral or oil or geo - thermal producing horizons do not lend themselves to simple geographic description such as by section, township and range. For example, one may be able to define aquifer and the line where it interfingers with an oil or gas zone as being an aquifer on one side and a non-aquifer on the other side today. But tomorrow, the operators have to drill on the other side of that line and develop an addition to this oil pool, so that 6 months or a year down the line, the line has affectively moved over. At that point, to require the operator to come in and has to ask the state to change the state's plan and send a new set of maps off to the EPA in Washington, is really ridiculous. What we need is a definition which allows for the situation where we have additional development which demonstrat that the zone called an aquifer before is no longer an aquif at that point. I think this can be done, we will be making some proposals along that line.

We use the 1/2 mile area of review in the state, so we are not going to have any problem with the EPA's proposal for the area of review.

Section 146.07, you've already got the misnumbering there. It talks about corrective action. In New Mexico, we usually take what the operators submit, review it, review ou records and we find out which are the bad wells in our opini and which wells need to have some corrective action taken, a we tell the operator, you must do this.

Apparently 122,38, contemplates that it will be don in this manner, whereas 146.07 says the operator will tell u At the very least, you should provide that it be either way. We feel like the director is the one normally who is going t say who will do what. Also, if we do it this way--what we d is say that now you can't inject until you get this repaired If we can do it that way then we can get rid of these compli schedules which have no place relative to Class II wells. T are just too many Class II wells to set up a bunch of compli schedule and hire 500 clerks to sit there and see that every-body files the paper work on time to no particular use.

We noted the mechanical integrity tests, one is enou in most cases unless you have an indication there is a probl and if you would substitute the words "one or more of the following" for the first line of paragraph (b) of this section, we believe you can resolve that problem.

I'm going to skip over my comments relative to 146.12 and 146.13, because they are going to be essentially identical to 146.22 and 146.23.

There seems to be an improper reference in Section 146.21(f) to 122.42(b). I don't think it cross checks there.

Section 146.22, the wording of this section seems to prohibit the use of anything but newly drilled wells for injection after the effective date of these regulations. While the wording of the section is not specific as to this point, the requirements such as logging and directional surveys could not be met, necessarily, by a well which had already been drilled. Now the common practice of disposing of oil field brine is putting in a new waterflood project is to use an existing well for injection wells. These wells are reviewed for casing, cementing, construction and must meet essentially the same requirements as a newly drilled well. Further, new wells are costing anywhere from $100,000 to half a million dollars,for wells the depth that we are talking about. Actually, we are having quite a few wells drilled now at $1,000,000 to $1,500,000 It would seem highly improper to enact requirements that would prohibit the use of sound old wells for injection. The opening paragraph of this section appears to require that existing enhanced recovery and hydrocarbon storage wells come into compliance with all the requirements for newly drilled injec wells; these being requirements for construction, operating, monitoring, reporting, et cetera. As such wells cannot be redrilled, recased and recemented, there is a possibility th: some could not be in such compliance, however, if such wells are not a threat to underground sources of drinking water, tl should be allowed to continue to be utilized as injection we: EPA needs to spell this out clearly in this section of the regulation.

In paragraph (d) of that same section, the requireme for directional surveys on new injection wells borders on the ludicrous. In conducting numerous, literally thousands, of tests to determine mechanical integrity, we have never seen a indication of leakage resulting from the diverging holes as anticipated by this paragraph. Directional surveys should or be required if excessive hole deviation is encountered. The requirement for logging of the surface before running of casi again, is unnecessary. It can result in colapse hole and al kinds of problems.

In many of our oil and gas areas, there are literall thousands of wells drilled in the same vicinity and little significant additional data would be generated by these logs. Division rules require the circulation of cement on surface casing, and little valuable information would be gained by th proposed logging. The same would hold true for the long string or intermediate casing except for the circulation requirement. It is felt that the variety and type of logs run should be left to the discretion of the operator. Except in those cases where the director has determined that other logs should be run depending on a unique circumstance. We do agree with the requirement that a cement bond log or a temperature survey should be run on the long string or any proposed injection well if cement is not circulated. SP logs have had no significant usage in New Mexico oil fields in 20 years. EPA should spell out the information that they seek to determine from such logging and permit the applicant to submit that information in the best form available to him. This might include other logs or data derived from other sources besides the well itself.

Section 146.23. Most injection wells at the time they are to be plugged retain a considerable amount of formation pressure and can backflow for an extended period of time. Plugging procedures normally require that this zone be shut off by a bridge plug with some kind of cement on top, or by squeeze cementing before the well is plugged, before the mud would be put in in this case. In such cases that we are talking about, to obtain a solid mud column from top to bottom before setting this bridge plugger, before squeezing the zone, would be essentially impossible. The regulation might be revised to provide that the injection interval shall be squeeze-cemented or otherwise isolated, and that the hold shall be filled from t to bottom and equalized with mud if indeed such a requiremen necessary at all.

Section 146.24. Most major oil and gas producing st have existing reporting systems for production of oil and ga injection of water, and so forth. If EPA now requires signi cantly different reports, forms, et cetera, the cost to the states for processing and for industry in reporting could be increased tremendously. In New Mexico's case, a single repo provides monthly data on production, injection, injection pressure, sale of oil, sale of gas, storage, and one time we got it all.

Paragraph (b)(1) requires monitoring of the nature injected fluids at intervals sufficiently frequent to yield data representative of its characteristics. EPA's comment o Page 34277~~, following Section 122.14(a)(1) indicates that su~~ monitoring is not generally required in UIC applications. W concue with EPA's comment in this matter and we feel that th paragraph, in 146, should be corrected by beginning it with the words "where appropriate".

Paragraph (c) requires that the owner or operator s be required to identify the types of tests and methods used generate the monitoring data. We feel that this should incl the modifying statement "where appropriate" or "as required the director". In most instances it is obvious to our field personnel what methods are being used and there is no need in just simply duplicating this information.

Section 146.25. In paragraph (b) of this section, the second sentence, change the word "show the number or name and location of" to "identify and locate". You are talking about the wells on the map, most of the maps are so darn small that if you try to show all that information on there, the map will be black. The appropriate place for showing this information is on the tabulation, and the map just needs to identify the well as closely so that the two can tie together.

Paragraph (c)(3) talks about the chemical analysis of the injected fluid, and we feel like we should also include the analysis of any additives that are going to be included with the injection fluid.

Paragraph (f) talks about the applicant showing aquifers on the application. By and large, he comes in and asks us where they are, and this means that we would tell him then he would tell us. We certainly agree with the gentlemen from the Texas Water--East Texas Disposal Systems on that, I thought that was an excellent idea, and I'm certainly going to include something like that in our final comments. If the director has the information, the applicant can submit it by reference, and if the director is happy with that he should be allowed to go ahead.

Paragraph (n) for consistency needs to have "or required by the director" at the end of the paragraph.

Paragraph (p) should be removed from this section entirely. This talks about mechanical integrity prior to permit. That mechanical integrity certainly needs to be shc before injection is permitted but not before the permit.

The biggest thing of all, if EPA would accept ongoi proven state programs in lieu of their minimum requirements, we could do this whole thing with minimum expense to the federal government. I know we've had this argument for a long time, but I see no reason why EPA can't go to Congress and say, look now, we could do it this way and it would cost us about half or 1/3 of what we are going to spend otherwise and they'd probably give you guys a medal. And I will answe any questions.

(Applause)

MR. LEVIN: It sounds like you brought your fan clul Questions from the panel. I have one.

In discussing the area of review, you indicated tha in New Mexico that you don't allow an operator to inject unt: he makes the correction--

MR. STAMETS: I perhaps wasn't thorough on that poi We go a couple of ways. One we say no injection or no injection above hydrostatic pressure until it's fixed. It depends on the problem.

MR. LEVIN: Is that applicable to new wells as well as existing wells?

MR. STAMETS: Well, at this point I would say that it is essentially only applicable to new wells. Anything since 1977 or starting in '77.

MR. LEVIN: Let me clarify once again. If he already has an injection well operation, do you make him shut down if he is already injecting?

MR. STAMETS: No. Now if we find a problem, we might and in one instance, there was one well within the confines of a very heavily drilled and injected area, and the new well was simply replacing an existing well on the same 40 acre tract. A field investigation showed no indication of ground water contamination or any leaks, and also this was in an area where there was essentially no ground water, and we said to heck with it, we'll wait until its program comes out, go ahead.

MR. LEVIN: Any other questions from the panel? Thank you very much, Mr. Stamets.

MR. STAMETS: Thank you.

MR. LEVIN: The next gentlemen is Mr. Hanby followed by Steve Kelley.

MR. KEN HANBY: Mr. Chairman, other members of the Environmental Protection Agency, ladies and gentlemen, I am Ken Hanby, Assistant Oil and Gas Supervisor, State Oil and Gas Board, State of Alabama. I do not have a copy of my prepared talk but I will get it to the clerk before the hearing is over, and I will address questions.

My comments are directed to the proposed regulation pertaining strongly to salt water disposal wells and injecti wells for enhanced oil or gas recovery.

Oil and gas operations in the 30 producing oil and states in this country have been regulated for many years by the various state regulatory agencies. In this respect, Ala bama, has adopted rules and regulations which include specif requirements for permitting of disposal wells and injection wells for enhanced recovery. Although no two states have identical regulations, the purpose of the regulations are th same. With these wells, it is the intention to drill, to complete and to operate in such a manner that the injected fluid will not enter an existing or a potential water supply This is the same purpose that you in EPA have.

Our regulatory staff consists of petroleum engineer geologists, hydrologists, civil engineers, and biologists an other technical people who have very important responsibilit We are proud of our efforts and feel a strong responsibility the states which we serve, and to the citizens of those stat and to the need to insure that at all times the fresh water resources of our state are protected.

The results of the state regulatory efforts speak f themselves. I will not go into the studies there were condu they have been mentioned previously, and EPA is very familia with these. These were the studies conducted by underground resource management and Lewis R. Reeder and Associates. I was going to comment and quote from those studies which show that pollution was evident from the oil and gas operations in the states studies.

Since EPA's first proposed regulations in 1976, the regulatory agencies in the various states have insisted that their programs work. These studies indicate that that is true. If the proposed EPA program does not result in elimination of pollution or possible pollution, and if it is not occurring it will now eliminate that, then the only result will be increased operating costs in the various states and a contribution to the spiraling inflation in this country. EPA has been urged, and by this statement we are urging again that EPA exempt from the EPA regulations, those states which can demonstrate that they have a sound ~~program of administering~~ and monitoring injection well programs.

I will make a few favorable comments since the original regulations were proposed. They are better, there is more flexibility. Existing wells can be permitted by rules, permits can be issued for the life of the facility, the area of review has been modified.

Going specifically to comments on the sections in 146.04, it provides that the director shall designate as underground sources of drinking water, all aquifers or parts thereof which currently serve as sources of drinking water or which contain fewer than 10,000 milligrams per liter of total di- solved solids. However, and I will comment on 122 at this point because I think it is pertinent, it says the director shall identify all aquifers or parts of aquifers which are n underground sources of drinking water in accordance with the criteria contained in 146.04; and then further states that a aquifers not so identified shall be designated underground sources of drinking water.

This last section approaches the designation of underground drinking water sources in the reverse direction then 146 does. Although it says it is done in accordance with 146. The method in 122 appears to be an unworkable met as it approaches the designation of underground drinking sou by defining first all aquifers that are not underground drin ing water sources. In areas of states where very little sub surface information is available this would be practically impossible. If it was found that in these areas, aquifers w not underground drinking water sources that had previously h been designated because of lack of information, then the sta program would have to go through the lengthy amending proced before an oil and gas operator could get approval for an injection well.

Under Section 146.22(d) minimum requirements for lo and other tests are given. These requirements are rigid and parts illogical and do not provide the states with any flexibility. First of all the requirement for directional surveys to be conducted on all holes to assure that vertical avenues for fluid migration in the form of diverging holes are not created. I assume EPA is intending for diverging holes to be the original bore hole that has been abandoned and the well has been sidetracked. Due to the normal reason for sidetracking, that being junk in the hole, it would not be practical nor engineeringly sound to attempt running directional surveying equipment in the area of a hole where junk has been lost.

If this is the intention, it appears that this discretion in judgment should be left with the director of the state program who could require that the entire junked part of the hole be cemented if it was necessary, to prevent possible escape of any injected fluids into fresh water aquifers; not by requiring a directional survey.

Further, under this section, specific logs or curves are required for surface hole and any completed hole. The intention of these regulations is, I am sure, to insure that injections are done in such manner that none of the injected fluids can enter an underground source of drinking water. State regulatory agencies have the same objective, and Alabama has required specific well construction standards, and monitoring procedures for injection wells for years. We are not stating that we are opposed to having the information derived from such logs if it is necessary. However, we do oppose these condit whereby no flexibility is given to the state director in mak these judgments.

Seventy-five percent of the permitted salt water disposal wells or existing wells have been from conversion o either abandoned producers or dry holes. Ninety-seven perce of the converted secondary recovery wells are from conversio of existing abandoned producers. With the inflexibility tha these minimum requirements carry, unless an existing well ha been logged in such fashion to conform to the minimum requir ments any use of these wells for injection purposes would be prohibited. These wells have been drilled, the casing has been set and cemented, the logs have been run and many o these wells were drilled years ago when logging techniques a available tools are not what they are today.

The construction of these wells, and their operatio has been approved by the State Oil and Gas Board in Alabama to assure that underground sources of drinking water are pro tected. With deep wells which have been drilled to 12,000 o greater surface casing has been set at 3,000 and 6,000 feet. In many cases no logs were run on the surface hole; however, there are many shallow wells in the area upon which ES and S logs have been run and these are available for the director the state program to determine the depth of the fresh water resources that must be protected. This is once again the ar where flexibility is needed. It should be left up to the sta[illegible] director to determine if sufficient evidence is available to determine the depth of fresh water, and if the existing well that could be converted to an injection well is properly constructed to prevent the migration of fluids into the fresh water zone. If the operator was attempting to convert a well to an injection well and sufficient information including logs is not available, we would require this information before we would consider issuing a permit.

There are a number of oil fields in Alabama which would be prematurely abandoned if it became impossible to convert dry holes or abandoned producers to salt water disposal wells because of a lack of the minimum required laws.

The required compliance schedules may be logical requirements in construction of a plant or hazardous waste facility. But as we see it, it only complicates and adds additional paper work in permitting Class II wells.

I know we have time limits and I am about out of time and I possibly would have additional comments today on Part 146 except that I just received Parts 122, 23, and 24 last Monday and these parts are extremely complex and confusing and are totally interrelated.

We appreciate EPA's extension of the comment period on part 146 and as Mr. Stamets said earlier, we would urgently request the comment period on all 4 of these items be extended at least until October 15th.

Finally, to reiterate our main comment, we urgently request EPA to seriously consider waiving the requirements p posed in the regulations for states who can demonstrate to EPA that our programs are adequate in terms of compliance wi general regulations. Further, if EPA proceeds and fails to allow a state to administer its own program, if deemed adequ needless waster of energy, money, time and paper work will occur. And if the rules remain inflexibility, unnecessary w will be drilled and production of oil and gas in this countr reduced. And to the member of EPA, you are a part of Washin ton, and the government that President Carter was talking ab last night, we have been and are still trying to reach you. Thank you.

MR. LEVIN: Mr. Baltay?

MR. BALTAY: I have one point of clarification and a question.

Your puzzlement on the way we chose to say designat source of underground drinking water, that was motivated by the finding that to make the state go through and map all th aquifers or the base of the 10,000 zone or whatever, would b inordinately expensive and therefore, we chose to do it the other way seeing that there is a general presumption on prot ing acceptance specific cases where the director chooses not designate portion of an aquifer, is that really an unworkab system? Doesn't that, in fact, save you time and effort to ... have to specify in detail the ones you will not protect?

MR. HANBY: I think it would be easier since public record in most states have the record where zones are producing water into the different counties. There are in public records the depth of the well, the aquifers have been identified by the geological survey. To go in and define all of the zones that are not underground sources would require to move into areas in cases where there are mainly municipal supplies. There is not evidence on enough wells in the area to deferentiate that these are not underground sources. If you say, these are not underground sources which, in turn, says everything else is underground drinking sources, then when you move into these areas then you have to mend your state program. You may find that you included some areas that are not underground drinking sources.

MR. BALTAY: But then if you use the information you have available to you now, you would not propose not to designate certain areas. How would you generate the detail to say this portion is exempted from protection.

MR. HANBY: We have the information in each of the counties and the aquifers that are currently producing water in the state are all known. We feel like this would be a much easier method to approach it, then by going the other way and designating everything that's not.

MR. BALTAY: My other question, your major comment on waiving state requirements would seem to imply some sort of process whereby EPA or the administrator would have to make a judgment or a determination of what state acts we could waive or state why we will not waive. What is your thinking on that type of process? What can EPA do, what extent would EPA get into the state's system and files to get the information to make the kind of judgment?

MR. HANBY: We have just had a recent effort in this manner and I will expand on those. With the Natural Gas Poli Act passing FERC was required to certify gas wells but it cou pass on to the states if they supplied their method of certif ing of gas wells. FERC proposed a set and adopted a set of general guidelines where they emphasized the lack of disrupti of state programs whereby the state, using their own procedur and their own method of gathering data, designing their own forms to present in a narrative form, not 2,500 pages long, b ours was something like 15 legal pages; we could outline our program, what information we have in our files, how we genera how a person could make an application according to the state wide rules, and our notice hearings. Then how we would use t information to make our judgment. This has been done with minimal impact on the states, we have taken this responsibili I will point out that FERC has no money for us to do it, we t this on ourselves because we felt like in doing so it was a critical point in the industry and failure to do this would mean that FERC would certify it, and they may not get around to it.

MR. BALTAY: Do you, for example, foresee any actual field work by EPA to assess the effectiveness of this thing?

MR. HANBY: We have, for example, on every disposal well you must supply us with information including logs, identifying the fresh water zone, your casing program, your cementing program. You must show logs of the proposed injection zone, if you use a nearby well, of course, before you drill a well you don't have a log on that well unless it's a converted well and then we have the logs available when the well was originally drilled. The aquiface must be identified and then in a public hearing we would respond to that.

MR. LEVIN: A follow-up question similarly related to that, would you be receptive to an EPA team going into your state and doing a survey of your state programs?

MR. HANBY: Yes, sir. We would encourage you to actually do that. We have supplied our rules and regulations, we have monitoring requirements, monthly monitoring requirements. As Nex Mexico has, the operator must supply us with production, salt water production, injection, annulus pressure reporting, volume injected, the zone it is injected to, the depth. We have monitor wells in the fields, in Alabama and oil and gas producing states these are mainly water supply wells that was were drilled during the drilling of the wells originally. We have agents that are in the field that monitor annulus pressure, every well is monitored only once a month and more then likely 2 or 3 times a month he goes by, the injection gage is on the well and we carry one with us.

MR. LEVIN: Thank you, I think you have answered th question. Are there any other questions from members of the panel? Mr. Knudson?

MR. KNUDSON: Would you see it acceptable for if the EPA approved your system, then EPA would then have those rule and regulations would become federal rules and regulations enforceable in Federal Court also? Would you see that as an option?

MR. HANBY: Let me see if I understand that. If EPA allowed us to set up and continue our own program, would we expect then that EPA could enforce our regulations in Federal Court.

MR. KNUDSON: Right.

MR. HANDBY: If legally they can do it, I don't see any problem with it. We can enforce them in the State of Alabama.

MR. KNUDSON: We do this in the air program where we accept what the state rules and regulations are, then they be- come Federal rules.

MR. BALTAY: Expound the ground rules for the state program.

MR. HANBY: That's good.

MR. BALTAY: You would feel comfortable with some level of EPA on site look at the program and then in fact say we feel that this is effective.

MR. HANBY: Yes, sir, we've been saying it for 4 years and we would encourage it.

MR. BALTAY: We'll be up there.

MR. LEVIN: Okay, thank you very much. The next gentlemen is Mr. Steve Kelly

MR. STEVE KELLY: I am Steve Kelly, Executive Director of the Oklahoma Independent Petroleum Association. OIPA is an association comprised of more then 1,050 members concerned with and working toward the betterment of the Oil and gas industry in Oklahoma. It's members include individuals and corporations engaged in all aspects of the independent petroleum industry within our state. Members of OIPA are vitally concerned with proposed federal underground injection control program which is being discussed here today.

OIPA is encouraged by the many changes the EPA has made and proposed technical standards for underground injection operations over those originally proposed in August of 1976.

Nevertheless, we believe the Agency has failed to answer the single most important question underlining the proposed UIC program as it relates to oil and gas operations.

Why is the federal program necessary in producing states with adequate injection programs already in place and operational. Production of crude oil and natural gas in Okl homa dates back over 80 years. Presently, Oklahoma is produ approximately 400,000 barrels of crude oil daily from 74,000 wells with approximately salt water production of 1,600,000 barrels.

For a number of years, oil field injection and disp operations have been under close scrutiny and control of the Oklahoma Corporation Commission. The OCC will be testifying at your hearings in Washington.

The effectiveness of this program in safeguarding t state's underground drinking water sources is supported in t study which has been mentioned previously here today. The Federal UIC program assumes the oil and gas production indus utilizes faulty or at least less than optimal engineering practices. Strict OCC rules and regulations in Oklahoma str refutes such an assumption.

Furthermore, poor engineering or bad operating tech could lead to loss production, which no producer can afford. While the OIPA will leave detailed comment of the specific Part 146 to later written submission, we would nevertheless to comment on a few of the requirements, we believe are especially onerous.

First of all, the numerous logs and tests that are required before setting surface casing will be of little practical benefit while adding unnecessarily to the cost of production.

Second, the satisfactory showing of mechanical integrity must be made every 5 years. Given the hundreds of wells that will have to meet this requirement and the associated paper work burden, it seems more prudent to require evidence of mechanical integrity only when the facts suggest there may be a problem present. Furthermore, the OIPA submits financial responsibility provision are accepted.

Oklahoma rules current specify that operators have \$10,000 surety on file to cover plugging of oil, gas and injection wells. We do not believe the additional requirement of a performance bond is necessary or useful.

Finally, the OIPA would like to address EPA's cost versus loss to oil and gas production figures. Perhaps, more disturbing then the actual figures themselves, is the Agency's apparent attitude that the cost while running several hundred million dollars for the entire industry are "actually small relative to the economic potential of the oil and gas industry".

Most of OIPA's members are very small business operations, many consisting of only the producer himself. Many of our members operate marginally economic oil and gas wells. The addition of even minimal operating cost could force many of these wells to be shut down prematurely.

The independent producer also plays a significant role in looking for and developing new supplies in domestic oil and gas. A venture that is becoming increasingly expens Cash flow is a significant concern to my membership.

Government programs whether they are state or feder they add to the paper work endurance contest and the cost of exploration and production activities have a very significan impact on the small producer. Increase cost of production a a result of this program in turn, will impact negatively on the development of our energy reserves.

In closing, let me state on behalf of the OIPA that we share the EPA's priority in protecting underground source of drinking water. After all, most of OIPA's members live i communities that have oil field injection and disposal opera nearby. Nevertheless, we believe that our state currently h adequate rules to assure our drinking water sources will be protected. We do not believe the regulations recently propo by EPA would contribute any additional environmental protect but would have a significant adverse impact on our continued ability to produce and meet the domestic petroleum supplies.

In light of these comments, we must again ask the question, why is a federal program necessary in producing st with adequate injection programs already in place and operat al? Thank you.

MR. LEVIN: Mr. Baltay?

MR. BALTAY: I have several questions. With regard to mechanical integrity, there was a specific comment in the preamble which said that we had thought about sampling techniques rather than the universal mechanical integrity. Do you have a any help for us there? Do you see any possibility for using their requirement in that direction?

MR. KELLY: We would like to--we will be addressing that in our technical comments which we will be submitting.

MR. BALTAY: Ok. Two points of clarification, I've heard the performance bond mentioned several times and I think you are aware that the statement is that some kind of financial responsibilty, bond is one possible form of that but nothing in the regulations require a bond per se. There is a variety of ways in which that financial responsibility can be demonstrated.

The other point that I wanted to mention very quickly, is the IOCC study which EPA has reviewed. Our general conclusion is that the IOCC report wasn't as helpful as we had hoped it would be in establishing whether or not there is indeed contamination related to oil and gas production. The central problem is that you've got a large universe of wells out of which a relatively small fraction is polluting, and the methodology used by URN did not have the power to reveal that kind of marginal statistical problem. So the fundamental conclusion about the IOCC's study, in our opinion, has got to be that it really doesn't demonstrate either way. The statistical meth dology just wasn't powerful enough to show the kind of probl that we think we've got.

MR. LEVIN: May I add something to that? However, what the IOCC study did do was stimulate us to do additional work, which has already begun and will continue during the comment period.

MR. SCHNAPF: I'm David Schnapf with the enforcemen group at EPA. On this bond thing, I want to make one point clear and I think it raises another point that needs to be made.

A lot of you have mentioned that the states program already requires a bond and that the additional federal bond would be superfluous. I think it is our understanding that the state bonds would fulfill the requirement of these regulations, and that you wouldn't need to post more than one bo I think that goes to a broader issue which is, we're hoping that these existing state programs will, in fact, implement these provisions and that there will not be more than one program in the state. We certainly hope that that would be the case; and we certainly would not like to disrupt those existing state programs.

MR. KELLY: What would you propose to do in the cas of the Osage Nation in Oklahoma, for instance, where you don want to have two programs? The State Corporation Commission no authority over the Osage Indian land.

MR. SCHNAPF: In that case, we would probably get a program just for those Indian lands. The rest of the state, if they assume primacy, the rest of the state would be regulated under the state's program. Now what would be particularly helpful in your comments, and in all the comments we receive, is to tell us how the existing state program differs from the federal program; and what obstacles arise from your assuming primacy. Because once the state has assumed primacy, all injection operators have to comply with are the state rules and regulations.

MR. LEVIN: We are getting a little bit into Part 123 of tomorrow, which will discuss the requirements for an acceptable state program.

Thank you, Mr. Kelly.

~~Before we break for lunch, the hotel has asked me to~~ mention to you that if you're eating here, and you order from the menu service would be rather slow. They do have a buffet which they recommend for $6.00. This is not an endorsement, I'm just being a messanger in this case.

This hearing is adjourned until 1:30. Thank you.

(Adjourned for lunch)

MR. LEVIN: I call the hearing to order, please.

We are ready for the afternoon session. We're going to give you folks a break this afternoon. I'm not going to go over the rules once again. You'll just have to remember wha I said this morning. (Applause) That's probably the fi applause I've gotten in 3 years.

We have had our first switch of the afternoon. Mr. Mulligan and Mr. John Soule have switched so, therefore, our next speaker is Mr. John Soule, Chief Legal Counsel for the Texas Railroad Commission.

JOHN G. SOULE: Mr. Chairman, and members of the pa My name is John Soule, I am Chief Legal Counsel for the Oil and Gas Division of the Railroad Commission of Texas. The Commissioners have asked that I appear here today and presen comments of the Railroad Commission of Texas with regard to the proposed UIC regulations.

The Commission has sole responsibility for the prevention of pollution which might result from activities associated with the exploration, development, and production oil, gas, and geothermal resources in Texas. The Commission duties include responsibility for preventing pollution of surface and subsurface waters in the state. Texas has had an effective underground injection control program for more tha 50 years.

Orders regulating underground injection were issued by the Railroad Commission as early as 1928. Those early or contained casing and well completion requirements in order t protect fresh water sands and further made specific provisio that the injected fluids must enter no other formation. Thus, the Railroad Commission of Texas was concerned with the regulation of injection wells to ensure the protection of fresh water for almost a half century before the U.S.Government or any of its representative conceived of the Safe Drinking Water Act.

Almost 700,000 wells have been drilled in Texas in the search for oil and gas to supply a fuel-starved nation. More than 200,000 oil and gas wells are now in production. More than 41,000 wells in Texas are being used for underground injection in connection with the production of oil and gas.

Over the years, there have been very few cases of a alleged contamination, possibly due to oil field operations. In fact, records of the Texas Department of Health show only two cases of alleged contamination over the past 2 years. The Railroad Commission routinely investigates complaints of this nature under its statutory mandate to prevent wast and pollution in connection with the production of oil and gas. When violations are confirmed, immediate remedial action is prescribed. Our experience indicates that eliminating the source generally eliminates the contamination itself.

The Safe Drinking Water Act, passed by a majority of the U.S. Congress and signed by the President, requires the Environmental Protection Agency to promulgate regulations for state UIC programs. Those regulations are to contain minimum and I stress the word minimum, requirements for the protecti of drinking water sources. Protection of drinking water sou requires that underground injection not contaminate undergro water which supplies or can reasonably be expected to supply a public water system. The Act further provides that these regulations may not interfere with oil and gas production, unless necessary to protect underground sources of drinking water, and may not unnecessarily disrupt existing state programs.

The regulations proposed by EPA are unreasonable. adopted as proposed, the regulations would substantially imp the production of oil and gas. They would unnecessarily dis a successful and effective UIC program which has been in eff in Texas for more than 50 years. Adoption of these rules wo create a severe economic burden on the American consumer. Tl rules would accelerate the current decline in oil and gas production in the United States at a time of approaching eco disaster.

The proposed regulations do not provide minimum sta ards for the protection of drinking water. They impose an unnecessary, unreasonable, and extremely onerous burden on t producers of oil and gas, the ultimate consumer, already bes by double digit inflation, and the state agencies charged wi the responsibility of regulation. This burden is being impo at a critical time in our history, when a shortage of oil an gas threatens our very existence as an advanced industrial nation. When the regulations proposed by agencies of the federal government should be striking a reasonable balance between the protection of our environment and increased productio of our available energy resources, the EPA proposes to dismantle an effective and long-lived UIC program in Texas, and substitute for it a program of needless and costly overregulation.

The Railroad Commission will submit detailed written technical comments prior to the September, 1979, deadline. However, by way of further explanation, the following examples of unnecessary and burdensome regulations are provided.

The completion of directional surveys on all injection wells, as required by the proposed regulations, is unnecessary to ensure protection of drinking water sources.

Electrical log requirements are more onerous than they need to be to insure protection of drinking water sources. Fracture findling logs are costly and not sufficiently reliable to justify their being run and submitted for all injection wells.

Determination of physical and chemical characteristics of formation fluids is not necessary to protect fresh water sands.

The EPA has earlier agreed that the existing Texas program for control of underground injection meets the requirements of the Safe Drinking Water Act. Yet, with these proposed regulations, making provision for "minimum" requirements, the EPA would require the Texas program to be altered drastically, increasing the cost in both time and money, without providing any greater protection for our sources of drinking water.

The Railroad Commission of Texas already requires protection of fresh water sands in connection with undergrou injection related to oil, gas, and geothermal activities. T EPA has gone well beyond the mandate provided by Congress in the Act.

These proposed regulations represent yet another la of expense to be borne by the ultimate consumer. Gas lines will be longer. The cost of gas at the pump will increase further, as will the cost of home heating oil. These regula tions are ill-conceived and ignore the Congressional mandate not to impede the production of oil and ~~gas or to disrupt~~ existing state underground injection programs.

There are sensible ways our environmental regulatic can be adjusted to take into account our energy needs. Now the time to restore balance to our national priorities. The proposed regulations should be further revised to insure con sistency with both our energy and environment needs. The Railroad Commission of Texas has written a rulebook for a successful UIC program. EPA would do well to follow the Tex lead.

Mr. Chairman, I will be happy to answer any questions.

MR. LEVIN: Are there any questions? Mr. Baltay?

MR. BALTAY: Did I hear you make reference that EPA has made some kind of finding of definitive statement about the Texas program?

MR. SOULE: Mr. Baltay, we do have a letter from the then administrator of the EPA, indicating at the time the Safe Drinking Water Act was being considered by Congress, that he was satisfied that the existing program in Texas did satisfy the requirements of the Safe Drinking Water Act. I understand that that is probably not a binding opinion of the Agency, but that had been expressed to the members of Congress at the time the Safe Drinking Water Act was enacted.

MR. BALTAY: You are referring to the Pickles/Trane exchange of letters, I think the administrator was fairly careful to say that as far as he knew, and that it seemed, and et cetera..

MR. SOULE: I've been involved in writing letters like that.

MR. LEVIN: I have a few questions. You said you would submit specific comments for the record later on, so if you don't wish to address to this today that is perfectly fine. Can you be more specific where you can tell us where the proposed 146 regulations differ from the Texas regulations, and in what way?

MR. SOULE: I'd have some difficulty in being very specific. I am a relative newcomer, and as George Singletar said several times to me today, I am the mouthpiece here tod

I would suggest those items which I outlined genera with respect to logging requirements and things like that, a the areas which I had reference to. I would prefer to reser until our written comments those specifics, and we do have under way specific analysis. But I am assured by our techni staff there would be a significant change in the program tha Texas now operates.

MR. LEVIN: That is perfectly fine, we will await y written comments. Are there any other questions from the pa Thank you very much.

I forgot to mention that our next speaker was to be Babette Higgins. She is Vice-President of Texas Environment Coalition. I understand Ms Higgins has a virus and won't be able to be here or at least there is some chance that she mi not; so, therefore, I will not scratch her at the moment, an we will come back to Ms. Higgins later on.

We will move to Mr. Harrold E. Wright, Chairman of the National Energy Policy Committee, Texas Independent Producers and Royalty Owners Association, to be followed by Ralph A. Dumas.

HARROLD E. WRIGHT: Mr. Chairman and members of the panel: My name is Harrold E. Wright, and I am an independen petroleum producer from Dallas. I'm also a petroleum engineer and Vice-President of San Juan Exploration Company that does business primarily in the East Texas area.

I'm here today as Chairman of the National Energy Policy Committee of the Texas Independent Producers and Royalty Owners Association. TIPRO is composed of 4,000 members who have an interest in Texas petroleum production.

On behalf of TIPRO, I commend the EPA for its revisions making more realistice the proposed Federal regulation of 1976 intended to promulgate the Safe Water Drinking Act passed by Congress. Without these revisions, there is little doubt that a large portion of domestic crude oil production dependent upon underground injection would have become uneconomic, and millions of barrels of reserves would have been lost forever.

Nevertheless, our Association still believes that the revised regulations relating to Class II wells, which include injection wells utilized for enhanced recovery purposes, remain too stringent and unnecessarily duplicate existing regulation, particularly in states such as Texas, which have developed strong anti-pollution requirements over the past 15 years.

EPA has estimated that its revised regulations would cost the petroleum producing industry little more than one-half billion dollars annually and would jeopardize only some 12,000 barrels of oil production daily. TIPRO contends these statements are much too modest and tend to mask the fact that unnecessary environmental protection requirements can result i extremely costly burdens for the small producer. There is n way to estimate how many current and prospective secondary recovery projects would be eliminated by the EPA requirement still before us concerning injection wells.

There remain several valid suggestions for change i EPA's proposed regulations. These will be covered fully in written testimony by the IPAA next month, which will be endc sed by TIPRO at that time. And, also, I would like to acknc ledge today that we are certainly in a position to endorse the testimony of Mr. Dillard who represents a number of clos association of TIPRO, and we would certainly recognize the v fine work that Mr. Herman Engel has done with the East Texas Salt Water Supply group in handling, for many years, the largest known oil field in the United States under some rath trying conditions with reinjection of water.

TIPRO finds it unreasonable to require expensive directional surveys as proposed in Section 146.22. Since th number of these, Mr. Chairman, have already been covered, I' just going to mention them and then we will go on. I don't like I should take a great deal of time.

MR. LEVIN: The Chair appreciates that.

MR. WRIGHT: The logging problem we talked about is perhaps worn out to some degree under Part 146.22(d)(2) and Where they require electric logs reading spontaneous potenti and caliper logs, cement evaluation logs, gamma ray neutron logs, and the like, we think for the most part are excess requirements that really do not serve the purpose that they are intended.

In addition, there is one other requirement of 146.22 (e)(6) where there is a requirement to determine whether the injected fluids are compatible with the fluids that now exist in the receiving formation. We feel like that is rather unnecessary if we know that the fluids are not safe drinking water fluids that need to be protected in the first place.

I believe that's going to cover most of the problems we had, and in conclusion we strongly urge EPA to make further revisions in the proposed regulations that will eliminate unnecessary, costly and duplicatory requirements which threaten existing and prospective secondary recovery operations in the field. The State of Texas has already shown that maximization of oil reserve recovery can be conducted under reasonable rules protecting fresh water supplies which, at the same time, preserve sound economics for the oil producer.

We think that our State of Texas has done an excellent job through our Railroad Commission over the past 35 years, and most particularly in the last 10 years in protecting our fresh water. We believe we have a workable system in this State and certainly we would like to commend our Railroad Commission for the work they have done. We feel like it would certainly be in order for the EPA to adopt our system to the degree that they can as now carried out by the Railroad Commission.

Thank you for this opportunity to be heard.

MR. LEVIN: Thank you, Mr. Wright. Will you answer questions?

MR. WRIGHT: Yes, sir.

MR. LEVIN: Any questions from the members of the panel? I have one.

Your statement addresses our comment on the possibi of exempting small producers from the regulations, we specif ally requested a comment on that. Do you have any thoughts about how such an exemption might be formulated?

MR. WRIGHT. Well, I suppose as many ways as that could be formulated, small exemptions have been made on the basis of production of an individual operator under other circumstances. The small producer set-up, as you recall bef the FBC set a minimum amount of gas, I think we have had legislation that considers the number of barrels of oil; possibly could consider growth dollars, there are many ways to do it. Probably on the amount of oil, I would suppose wo be the more logical approach.

MR. LEVIN: Do you have any particular cut-off in mind?

MR. WRIGHT: No, sir.

MR. LEVIN: Thank you. Mr. Schnapf?

MR. SCHNAPF: Yes, this is a follow-up question, and I'd advise you to ask it of the former speaker. Does the Texas Railroad Commission have any exemption for small operators or do you know?

MR. WRIGHT: No, sir, I do not believe there are any exemptions. I think all the rules are applied to everyone uniformly and the same.

MR. SCHNAPF: Ok.

MR. LEVIN: Thank you very much, Mr. Wright. The next speaker is Mr. Dumas, I think I pronounced that right on the third try, followed by Mr. James Greco.

RALPH A. DUMAS: I appreciate the opportunity to come up here, I might even say that since I've been Director of Oil and Gas Producers (inaudible).

I won't bore you with a lot of repitition here, I would like to say a number of items here pinpointed to point out but it's been gone over by a number of the other speakers, Mr. Dillard really came down on it. In fact, I think I could endorse most of the statements made here today. I won't endorse the man from Dupont too closely, I notice he got an invitation to come back before you people, his must have been a little bit too lenient there.

But rather than bore you with the various items that I do have notes on that have been touched on, we will submit some written statements at a later date. I'd like to refine some of those and maybe bear down on a little bit more then what I have.

We would like to read into the record this little summary that I have that I think really expresses the opinio of the members of my Oil and Gas Commission and the staff of the Oil and Gas Commission.

We feel to impose the proposed UIC regulations on the states that already have programs that have been in effe several years, and have proven that they are effective by no having any contamination from the injection wells would be a complete waste.

Our oil and gas statutes, setting up the Oil and Gas Commission, which is Act 105, 1939 of the Arkansas General Assembly requires that the Oil and Gas Commission prevent was To put burdensome, costly, time consuming UIC regulations pro posed by EPA into effect, would be creating waste and would b in violation of the Act that puts us into the operation of co serving oil and gas in the State of Arkansas.

The current regulations we have are effective in pro tecting the drinking water sources within the state without a cost to the operators and the regulatory agencies. We have denied or have no intention of applying for a grant to help u support this. We've had visits with our operators in the Sta and they would rather pay more taxes to have us avoid even ge involved in a grant program, then to have us go through the burden of all the bookkeeping and everything that would go along with satisfying accounting and everything that we'd hav to do to justify receiving the grants.

We don't believe there would be a thing to be gained by imposing the new regulations proposed by UIC. We are already protecting our fresh water in the state and we will continue to do so. So to put these regulations in effect would only put a burden on our operators that we feel is unduly necessary. We'd much rather see them spend the money that they will have to lay out to apply for these--to comply with these burdensome regulations.

Our independents make up most of the operators in the state with very few majors, and they would have to go to a consultant, in most cases, to get people to even make an application that could be considered by the Oil and Gas Commission under the UIC regulations.

We have a 2 page advocation right now, if you'll take 10 days to process and I think our record will stand on its own. We do not have any contamination of fresh water by injection systems at all. So, in spite of Mr. Baltay's comments that the study of the IOCC didn't prove to them that there were effective systems in operation.

At any rate, we would like to continue to operate under our current system, which has proven to be effective for some 35 to 40 years, at a very minimum cost, and if we can continue under that operation, we can see that we need to make some minor adjustments and we intend to do so. But we believe th our over-all system will be effective, and we do not see the need for imposing the new UIC regulations on the operators a the state itself. We are already achieving the goal of protecting the fresh water, so what the heck, what could we do?

We ask that you consider fully some method of approc ing the state systems that are in effect. We are open to suggestions where we might make improvement, we intend to improve, and we intend to enforce them and we intend to drin go fresh drinking water for a long, long time. We will be drinking good water a long time before we get down to that 10,000 ppm that you want us to protect without fear that we need to go that far.

With those few comments, I would ask that it be considered by the EPA to allow the State of Arkansas to continue on its own method of regulation at the present. I'll be glad to answer any questions.

MR. LEVIN: Are there any questions? Mr. Schanapf, I think I saw your hand first.

MR. SCHNAPF: I'd like to ask the same question I asked the previous gentlemen. Does the State of Arkansas ha any exemption for the small operators?

MR. DUMAS: No, we do not.

MR. SCHNAPF: And I just wanted to ask if the basic mechanism that the state uses for controlling these injection wells, is it through a permit system, approval by rule, order, how's that done?

MR. DUMAS: We have a permit system, yes. And we have rules and regulations outlining what they must do to apply for a disposal well, or an injection well connected with enhanced recovery operation.

MR. SCHNAPF: Thank you.

MR. LEVIN: Mr. Baltay?

MR. BALTAY: I wonder if I could draw you out a little bit more in terms of specifics on your basic point. If I hear you correctly, you're saying the UIC regs would add nothing to the process, and that they would be much more costly and burdensome. I'm wondering if I could draw you out for some specific examples.

MR. DUMAS: Well, by the increase in cost, we have an ongoing program. To put your program into effect, we would have to hire additional staff, and go into a whole lot more detailed bookkeeping, record keeping and so forth. You are requiring bulky applications which will take considerable time on our part, and the time and the cost to the operators to put these applications to us. To process them and everything, and everybody involved, heck we could drill a million oil well looking for badly needed crew with the money that would be wasted in this manner.

We still feel that we are protecting the water, wha more can we do?

MR. LEVIN: Ok. I have a few questions. Again, no to pin you down this afternoon, we realize there may have be a short time for review of the regulations, but can you specifically state either today or in the future, just what parts of the regulations you find as onerous burdensome that going to increase your work load that's going to cause you t hire additional personnel?

MR. DUMAS: The over-all program, of course, is goi to take alot of personnel to go through the processing and th multitude of papers that will be required to be filed. We realize that you people have given us quite a bit of relief b giving the director the right to judge whether or not he need additional information filed, and gave us considerable relief there. We've been used to handling a 2 page applications com pared to what you're going to get under the UIC program, it's going to take quite a few extra people to go through that mou of paper. Probably have to hire a new janitor to dispose of some of it.

MR. LEVIN: As long as you dispose of it safely. I don't think we consider paper as a hazardous waste yet. The other question I have is if you could get a little more speci about the state's regulatory program. You have mentioned tha you do have a permit program. Do you have an area of review requirement whereby you review abandoned wells in the vicinity of the injection wells?

MR. DUMAS: At present, we have a half mile radius that we use for the area of review.

MR. LEVINE: And do you actually review each well in that half mile radius?

MR. DUMAS: No necessarily. We have a reasonably good idea of how the wells are completed in the area, and if we could find any well that would lead us to believe that we had a problem there, of course, we would be the first ones to turn down an application in that area.

MR. LEVINE: Thank you very much. I'm sorry, just a moment. Mr. Gordon?

MR. GORDON: I would like to ask just one question, I think you mentioned that you saw the need for some minor adjustment and that you would be improving upon your current state program. I wonder if you could tell us as to whether any of the changes that you plan to make in Arkansas, are based on these proposed regulations and if so, or if not rather, how--what differences there are; and then what kind of changes are you planning?

MR. DUMAS: I think some of the review of the UIC regulations brought out some point there that we might want to adopt and strengthen our existing regulations. Frankly, I think we could continue operating under the current regulations without that but we would be willing to make some changes, I hat to admit it, but we do see some good in some of the points.

MR. LEVIN: Could you state that a little louder?

MR. DUMAS: I should have turned my head, but I really believe that there are some points that we could impr after having reviewed the UIC regulations, and we will incorporate those changes as time goes by.

MR. LEVIN: Do you intend to submit any further written comments that we can get some of these specifics.

MR. DUMAS: Yes, I will leave a copy of what I had drafted originally here, and I do intend to submit some additional comments.

MR. LEVIN: Thank you very much, we had to pick on someone, Mr. Dumas.

MR. DUMAS: Ok, we don't mind.

MR. LEVIN: The next speaker is Mr. Greco, who will be followed by the long awaited Mr. Mullican.

Mr. James Greco? Ok, he's not here. Mr. Jerry Mullican, Chief, Solid Wast and Underground Injection Sectic Texas Department of Water Resources. I know he's here. If Mr. Greco comes in, would someone please let me know.

JERRY MULLICAN: Thank you, Mr. Chairman.

MR. LEVIN: Sorry, Jerry, can you hold a minute. Troy Martin, Manager of Engineering Texas American Oil Corporation, will be next.

MR. MULLICAN: You mean now or later?

MR. LEVIN: After you.

MR. MULLICAN: Ok. I will be glad to answer any questions after I finish a very brief statement.

I think there have been alot of the regulations hashed over enough today. I would like to say though, and remind the people that Congress in its wisdom, or maybe the lack of it, passed the Safe Drinking Water Act in 1974. The Safe Drinking Water Act requires the administrator of EPA to promulgate underground injection control regulations. In doing so, the Congress gave the administrator of EPA a broad discretionary power in developing regulations that the administrator felt was necessary to protect underground drinking water sources.

The record is clear on the hearing preceeding the act that Congress intended for the states to run their own program, and protect their own ground work.

We, of the Texas Department of Water Resources, would like to run our own program, as well as the Railroad Commission would too, as far as the activities under their jurisdiction. I would like to compliment Mr. Levin and his staff of the Office of Water Supply for the good job, I think they have done in listening and trying to do what is right, and trying to carry out the intent of Congress.

Over the last 4 and 1/2 years, I've been following the activities and the development of the undergound injection regulations since January of 1975, and I still have a copy c the first working papers that were put together. It's prett scarey if you compare it with what we have today.

I would like to endorse and support Dr. Miller's comments from the American Mining Congress. I believe they are completely appropriate, and our written comments that wi follow will contain much of the substantive type recommendat that he has recommended. As written, and I believe this has been expressed partially by Paul Baltay, that the--or at least I believe he recognized--that we can't live with the Class III well requirements as they are written right now. We couldn't promulgate our own state regulations to be consi with those Federal regulations, because we couldn't enforce some of the items that are impractical and even impossible.

I would like to ask permission, if it is all right Mr. Chairman, to make one statement regarding item that will come up tomorrow in 123, Part 123 discussion.

MR. LEVIN: Is it relevant to the UIC program?

MR. MULLICAN: Well, it's relevant to my department My department's involvement in the UIC Program, and I'd like to solicit support from the people in the audience at the hearings tomorrow.

MR. LEVIN: Go ahead and make your statement.

MR. MULLICAN: The proposed 122,123, and 124 regs h a requirement in them that penalties--state's statutes--must have penalties equal to those penalties in the federal laws both UIC solid waste and NPDES. I'm particularly concerned with solid waste and underground injection, because that is my responsibility. If anyone followed our Texas Legislature this past session, I think you will know that unless there is a change in the atmosphere of our own Legislature where they are wanting to cut rather than give, and they are not out to create anymore taxes for the citizens of Texas. In the few areas, one or two areas, I think it will be entirely impossible that our Legislature amend our Act again to increase penalties, for either civil or criminal.

Our enforcement program in our department is a good enforcement program. Some of the suits for pollution that we secured have been as large as any in the United States, larger than any that EPA has, in fact, collected. With our provisions that we now have, we won't be able to go back to the Legislature even if we wanted to recommend to the Legislature an increase in fines, criminal or civil.

So, I'm only stating that if the people in Texas won't be regulated by the state, then I think it's time for you to speak up and make your comments to EPA as to how well you feel the enforcement program is now in Texas. That's all I have to say.

MR. LEVIN: Thank you very much, Mr. Mullican. Will you stay and answer questions?

MR. MULLICAN: Yes, sir.

MR. LEVIN: Mr. Baltay?

MR. BALTAY: I understand in Texas you relie on a pipe line cut-off. Could you quickly describe for us how that works, and give us an assessment or your judgment of its effectiveness.

MR. MULLICAN: That's the Railroad Commission's responsibility.

MR. BALTAY: Do you apply anything like that in the non-oil and gas areas in Texas?

MR. MULLICAN: Normally, when we have a problem we naturally try to correct that problem administratively. In other words, you have a well problem with a possibility or its actually leaking, we like to get it fixed, and correct it, and stop it right then. Then we worry about, in the event we are going to sue somebody and how much we are going to get from them, we have the authority to refer someone directly to the Attorney General. We have the authority to get temporary restraining orders, injunctions, and what have you. We have the authority to sue for criminal damages, but our authority is not quite as immediate as the Railroad Commissions as far as pipelines are concerned.

MR. BALTAY: Just to clarify for the record, does your department have responsibility for regulating oil wells except Class II?

MR. MULLICAN: I'm glad you brought that up, Mr. Chairman, because I missed part of my notes here. Let me clarify that our department regulates Class I and most of th Class III wells, and Class IV and Class V. We are not regulations at all with the Class II wells, and I am sympathe with the oil and gas industry and the work load that will be imposed upon the Railroad Commission if there is not a highe degree of flexibility built into these regulations.

Our involvement in Class II wells is, I believe, as the speaker pointed out earlier, is providing recommendation on setting of surface pipe.

MR. LEVIN: Thank you. Any further questions from the panel? Mr. Schnapf?

MR. SCHNAPF: I just have one. I think this area o penalty is more appropriately discussed tomorrow, but I assum you will be submitting more detailed comment.

MR. MULLICAN: One of our general counsel will make a statement in this regard tomorrow, but in case some of thes people aren't here tomorrow, I wanted them to hear what I had to say.

MR. SCHNAPF: In making further comments, it would b very helpful for our purposes not only to get the general reaction but to have more specific detail just what remedies have available to you. What fines are available under the st law, in other words, what is it, for example $1,000 a day,

$5,000 a day, that kind of information.

MR. MULLICAN: We will

MR. SCHNAPF: Good, thank you.

MR. LEVIN: Thank you, Mr. Mullican. The next speaker is Mr. Troy Martin to be followed by Mr. Bob Hill.

TROY G. MARTIN: Mr. Chairman, my name is Troy Martin. I am the Manager of Engineering for Texas American Oil Corporation, a relatively small publicly owned, Midland, Texas, based oil and gas producing company. I have the responsibility of determining the economic feasibility of installing Secondary recovery and enhanced recovery projects. Also, I am responsible for these projects' design, implementation, and operation. My engineering staff and I have considerable experience with inject procedures and problems related to secondary recovery injection and disposal of produced waters.

Protecting our envoronment from underground water injection pollution from Class II wells has been the responsibility of the Texas Railroad Commission for over 40 years. For the past 10 years, I have seen substantial improvements in their injection and plugging requirements that more than adequately protect the people of the State of Texas.

I sincerely believe that pollution of subsurface water by underground injection practices is not a significant problem in our state because of their efforts, as I understand your own study performed in 1975, has shown. I am convinced that additional, more complicated procedures and regulations are not needed and will be counter productive to me performing my jc which is eliminating a significant problem in our country. This problem is how we can increase oil and gas production a maximize the recovery of these vital resources.

I am convinced that my company's efforts to work toward reducing the energy crisis in America today, will aga be seriously hampered by another good sounding, well meaning set of regulations that, in reality, simply use up the resou of experienced technical personnel and funds that we have desperate need of in other areas of our business. I need to concentrating on such things as drilling new wells, working over existing wells, or installing secondary and enhanced re covery projects. Instead, I will be bogged down in permitti studying, and periodically preparing additional unproductive government status reports.

It would seem prudent to continue to use the expert of our state agencies in this area, and also to minimize the additional burden you are placing on every oil operator in this nation.

Specifically, Section 146 sets up concrete regulati that the industry and the state regulatory agencies both recognize, should be flexible to handle specific problems in specific areas. There is no need to burden the oil operator with regulations in areas where problems do not exist.

Section 146.04 does not need to be so extreme in its definition of potable water. At 10,000 parts per million tota dissolved solids, I believe we are protecting a resource that has no potential value to our state or nation. A reasonable maximum value of 3,000 to 5,000 parts per million is the quality of waters we should be concentrating our protection on.

Section 146.06, Area of Review is attempting to eliminate any migration of fluids from the oil production zone into a possible fresh water strata. There is little flexibility in the determination of the area of review. A review of all wells located in this zone of endangering influience or the 1/4 mile fixed radius will be an unnecessary burden for the operator. An example is where the operator is attempting to install a secondary project in an old, shallow oil field developed on close spacing like 2 acre spacing, where wells are only several hundred feet apart.

I believe that a reasonable area of endangering influence should be based on the well density established by the operator and the state regulatory agency. Normally, injectio wells in a regular waterflood pattern do not exert significant influence outside of their pattern. For pattern type waterflood projects, a distance somewhat greater than the distance between the injector and the producer would seem to be a more reasonable measure of the area of influence. Water disposal wells and peripheral water injection wells may need to be handled under an arbitray 1/4 mile fixed radius, but a producing wells' drain age radius generally could be tied into an injection wells endangering influence radius.

Section 146.07 appears to be tatally unnecessary fc normal water injection operations. The prudent operator wil take all necessary corrective action for any pollution probl he may be involved in because of the states vast authority c the operator and the possibility of litigation for damages caused to the surface owner's water resources.

Section 146.08, Mechanical integrity in an injectic well should relate to preventing fluid movement into a sourc of drinking water and not non-drinking water zones. Casing leaks in injection wells will almost always occur in deep production casing strings as a result of encountering highly corrosive undrinkable water sections, which are located belc almost always below fresh water sections. The fresh water section by state regulations are cased off and protected by cement and steel casing and are never contaminated as a resu of this major type of casing leak.

Paragraph (b) should not be required as a standard regulation, dual redundant tests to prove mechanical integri Let me try that again. Paragraph (b) should not require, as a standard regulation, dual redundant tests to prove mechan integrity. Also, a small sampling of weels in fields that l experienced limited corrosion problems is recommended.

Flexibility is strongly encouraged in establishing state requirements for mechanical integrity testing, which should be dependant upon the degree of casing leak problems encountered in an area.

Paragraph (c) has no value that I can determine as the previous test should conclusively show the absence of fluid movement.

Item 1, well records are already available in the state and they are available to the government and to the public.

Itme 2, cement type logging programs do not tell the story as effectively as the Railroad Commission Representative, the cementing contractor, and the drilling contractor on the well location watching us circulate cement to the surface on all surface casing or equivalent casing strings, which are set in this state. The sworn statements of eye witnesses is more cost efficient and reliable than the proposed logs.

In problem areas, the industry as a common practice will measure the cement top on production casing to determine whether more or less cement should be used on subsequent wells. A reduction in the cement volume is a cost savings, while increasing the cement volume may be necessary to cover potential problem zones and prevent future possible costly failures. However, measuring the cement tops in all wells is not necessary

Paragraph (d) should allow the state regulatory agency jurisdiction over handling this program with a periodic review by the administrator. In no way, should the administrator be directly involved in approval of individual routine tests

Section 146.22, I believe the state requirements ar more than adequate for new construction of injection wells.

Paragraph (d) lists these additional, unnecessary r quirements, which will substantially burden the operator and do nothing to improve the protection of the drinking water zones.

Item 1 Direction Surveys.

Item 2 Logging surface casing hole or logging cemen tops cannot increase the protection afforded the drinking wa zones. Since cement is always circulated to surface providi the best possible protection to the drinking water zones tha is available.

Item 3, Logging programs below surface pipe as pro- posed under Rules (i) and (ii) are totally irrelevant to the protection of drinking water sources and should be totally omitted. These type logs should be run at the discretion of the operator. Gamma Ray logs can be effectively, and are generally, run inside casing after the casing is set. Rule (iii), I have previously discussed this rule under 146.08 (c (2), where I stated that determining the exact cement top or all wells in most fields is not necessary and increases the and burden to complete new wells.

Paragraph (e), Item (1), Obtaining pressure measur ments on every new injection well would be unnecessary and costly, since each injection project has a state approved maximum injection pressure for all wells permitted to the project.

Item (2) Reservoir temperature will not vary from well to well within a project, and is standard information submitted on each project request for a state injection permit. Also, a temperature survey is not normally included ina standard suite of production logs and would require additional investment.

Item (3) Fracture pressure is not necessary to determine on an individual well basis and requires actual measurements during fracture treatments. Injection wells are not fracture treated unless absolutely necessary due to the high cost, and the possible loss of oil recovery due to channeling from the injection well to the producing well, which can result in tremendous oil loss.

Items (4), (5), and (6) concerning formation rock and fluid properties, in my opinion, have no relevance on the protection of fresh water sources, except in terms of possible plugging off of the injection well face. The maximum allowable injection well head pressure allowed under each state permit is designed to prevent the use of excessive pressures. Also, I believe that this type of information is much more relevant for strata between the fresh water zones and the injection zone

I certainly hope that expensive coring operations are not being considered in these items. Also, again, I believe developing this type information on each injection well is ridiculous and unnecessary. Compatibility tests of fluids on an individual injection well basis for all wells in a project has never even been attempted, in my knowledge, for a waterflood project.

Section 146.23, Abandonment of Class II wells in nc way should be different from the abandonment of any well, producer or injector. The Texas Railroad Commission has mor than adequate requirements for plugging and abandonments, wh are strictly adhered to and witnessed by Commission represen tatives. This is true in all states that I have been involve with. Also plugging bonds are not necessary.

Section 146.24, Paragraph (b), Operating an expensi secondary or enhanced recovery project necessarily involves enormous amount of monitoring and informal recording of production and injection data. Providing the government with weekly or monthly individual injection well fluid analysis, injection pressures, injection rates, and injection cumulati volumes as listed in items 1 and 2 will never prevent pollut of frest water sources.

I complement the preparers for item 3. Demonstrati of mechanical integrity, I believe, is the way to prove that migration of fluids is not occurring. However, I believe th the arbitrary 5 year interval should be flexible and determined by the experts in the state regulatory agencies. Some problem areas may need more frequent testing, perhaps on a 2 or 3 year basis and some areas, having no corrosion problems, will never need testing.

Paragraph (c), Item (1), a summary monitory report should address itself to mechanical integrity testing, instead of monitoring of individual injection well rates, cumulatives, etc., and should be required only after mechanical integrity tests have been run.

Section 146.25, paragraph (d), item (3), and paragraphs (e) and (f) are basic data required by state agencies for the initial project injection permit and do not change because a new injection well is drilled. This information should not be required on an individual well basis.

Paragraph (h), Current drilling forms required by state agencies for permitting all wells, injection, production, and others, adequately describe the proposed well's construction details, and an engineering drawing is both burdensome and unnecessary.

Paragraph (i), formation testing programs are generally not planned, since an operator would not drill injection well unless he is reasonably assured the formation would take injection fluids. This is not necessary for issuance of a permit.

Paragraph (l), normal, prudent operating procedures should be expected of an operator if failures occur, instead of requiring any contingency plans. This is not necessary for the issuance of a permit.

Paragraph (p), the construction data discussed above in 146.25 (h) will demonstrate the operator's plan for mechanical integrity. Any other demonstration of mechanical integrity would need to be performed after the drilling of the well and oil operators will not drill injection wells that, upon completion, may not be permitted by a director.

Thank you for this opportunity to present my views on the technical regulations proposed for underground injection control.

MR. LEVIN: Thank you, Mr. Martin. Any questions from the members of the panel? If not, we will move on. Thank you very much.

Next speaker, Mr. Bob Hill, Vice-President of TISUMI Inc., Corpus Christi, Texas. I'm sure Mr. Hill will explain what that stands for, following Mr. Hill will be Mr. Clyde D Ford, Senior Counsel, Texas Gulf, Inc., Houston, Texas.

BOB HILL: Mr. Chairman, I will be glad to answer any questions that I can.

Members of the panel. My name is Bob Hill. I am Vice-President of the Texas In-Situ Uranium Mining Envirnmen Association, Inc. We are better known by the acronyn TISUMI

TISUMEA membership is composed of 11 companies involved in in-situ mining or have expectation of being involved in the near future.

Due to the time constraint, today I am commenting only on items in CFR, 146 UIC Program that establishes policy or major requirements that are important to the uranium industry.

The association will submit more detailed comments at a later date on these regulations. The association believes the regulations overall have improved since first proposed in August, 1976. For example, solution mining wells are now placed in a class separate from waste disposal wells, that is major industrial waste. However, it appears that the EPA does not yet understand the in-situ uranium industry and how it operates.

One of the principal differences between in-situs uranium mining and other processes, such as the Frasch process, is the greater number of wells in a confined area. For example one of the in-situ uranium operators has over 600 monitor wells which they sample twice a month and operate about 1,000 production and injection wells. Back in 1976, I think there were 2 operators with less than a couple of hundred wells. Hopefully, comments that you receive on these proposed regulations will result in adoption of equitable regulations for this industry.

I want to comment on the preamble of 40 CFR 146.

Subclasses of Class III. We advocate the use of subclasses for the different types of wells within Class III. The use of a subclass for uranium solution mining wells would facilitate the development of regulations that should be singular suitable to this industry.

The design and use of uranium solution mining wells are different from other types of wells in Class III. These wells differ in greater concentrations per unit area, they are used to recover ore from an aquifer which in many instances are hydrologically connected to a source of drinking water; and they recover a product that requires a state or federal license for handling.

The classification of wells within Class III into subclasses would allow promulgation of generic regulations that still could be specific to a subclass. An example of subclass regulations would be adoption of the concept "permit area" for a subclass of uranium mining wells. This adoption would alleviate the permitting process for the use of a permit area could be utilized for a block of wells and not on an individual basis.

In the preamble you discussed economic impact. I find it incredible that EPA indicates there would not be any incremental costs, your table 5, to the uranium industry. Perhaps the agency is unaware that several thousand in-situ injection wells are presently in existence. These regulations

TISUMEA membership is composed of 11 companies involved in in-situ mining or have expectation of being involved in the near future.

Due to the time constraint, today I am commenting only on items in CFR, 146 UIC Program that establishes policy or major requirements that are important to the uranium industry.

The association will submit more detailed comments at a later date on these regulations. The association believes the regulations overall have improved since first proposed in August, 1976. For example, solution mining wells are now placed in a class separate from waste disposal wells, that is major industrial waste. However, it appears that the EPA does not yet understand the in-situ uranium industry and how it operates.

One of the principal differences between in-situs uranium mining and other processes, such as the Frasch process, is the greater number of wells in a confined area. For example one of the in-situ uranium operators has over 600 monitor wells which they sample twice a month and operate about 1,000 production and injection wells. Back in 1976, I think there were 2 operators with less than a couple of hundred wells. Hopefully, comments that you receive on these proposed regulations will result in adoption of equitable regulations for this industry.

I want to comment on the preamble of 40 CFR 146.

Subclasses of Class III. We advocate the use of subclasses the different types of wells within Class III. The use of a subclass for uranium solution mining wells would facilitate the development of regulations that should be singular suita to this industry.

The design and use of uranium solution mining wells are different from other types of wells in Class III. These wells differ in greater concentrations per unit area, they a used to recover ore from an aquifer which in many instances hydrologically connected to a source of drinking water; and they recover a product that requires a state or federal license for handling.

The classification of wells within Class III into subclasses would allow promulgation of generic regulations t still could be specific to a subclass. An example of subcla regulations would be adoption of the concept "permit area" f a subclass of uranium mining wells. This adoption would alleviate the permitting process for the use of a permit are could be utilized for a block of wells and not on an individ basis.

In the preamble you discussed economic impact. I f it incredible that EPA indicates there would not be any incremental costs, your table 5, to the uranium industry. Pe: haps the agency is unaware that several thousand in-situ injection wells are presently in existence. These regulati as proposed would add a considerable cost to each well. One example of the added cost would be the requirement of the installation of a continuous monitoring device on each well, to which, incidentally, we object.

Because of the great number of wells involved in in-situ uranium mining, these regulations could be excessively expensive. Many of the uranium deposits are small in size and cannot support any unnecessarily burdensome requirements. We believe that we can propose monitoring systems which adequately protect the environment and will not be overly expensive. We would like to see these requirements have the flexibility to permit us to use our technical capabilities in attempting this type of mining on small uranium deposits.

Realistically, the regulations are proposed will add a significant financial burden to the uranium industry. Time delays caused by many of these regulations can be just as costly as hiring additional personnel or adding new equipment which these regulations will require. We believe the EPA has not done its homework on assessing the economical impact on the uranium solution mining industry.

In Section 146.04, Underground Sources of Drinking Water. This section requires the director subject to the approval of the administrator to designate all aquifers as a source of drinking water if they presently serve as sources of drinking water with several exceptions. Based on the exceptions, uranium solution mining could occur in an aquife if it is "mineral, oil or geothermal energy producting". Certainly uranium oxide is a mineral. Also, if the aquifer so contaminated that it would be technologically impractical to render it fit for human consumption, it would not be designated a source of drinking water. Here, again, most aquifers from which uranium is produced are high in radioactivity exceeding the drinking water standards.

This section does bring up 2 very important questic 1, Must all aquifers that are sources of drinking water be designated prior to the processing of permit applications? 2, Once all of an aquifer is designated a drinking water sou can part of this be declared a non-source as new information develops? The regulations in regards to these questions should be written so there is clear understanding of the int ~~And it is very important to individuals with the mining op-~~ erations.

Mr. Chairman, I want to comment on 122.37, Area Permits, this has been brought up earlier today. The concep of permitting an area in lieu of individual wells is practic by the Texas regulatory agency for solution mining. It is a practical method for an ongoing operation where numerous we are to be drilled and completed in an area. Because of the erratic nature of the ore body deposition, it is impossible determine the exact location of an injection well prior to sequential development of the field.

An area permit concept is vital to uranium solution mining. It is doubtful that the uranium in-situ industry could survive were it forced to apply for permits for individual wells because of the delay in permit processing. Mr. Mullican seems to concur with that in his testimony.

In view of the importance of the area permit concept to the uranium industry, we request that the option of its use should not rest with the director, but instead with the operator.

These regulations in Part 146 are far too specific. They lack the flexibility needed for practical application. Too often the regulations state "as a minimum", then list a series of requirements. Because every injection operation is different in some respect from all others, it is difficult to determine minimum requirements.

In-situ uranium mining is a new technology and development. There are many new and different techniques being studied Any regulations that are adopted should permit the continued development of new methods. The regulations should be flexibility so that the operator may utilize his expertise and knowledge in processing, mining and monitoring systems which are suitable to the specific intentions at the site being mined if the site has different geologic and engineering parameters. It is not prudent to specify engineering and geologic requirements without allowing flexibility for considering differen between sites and states.

We propose that the regulations must be more gener in nature for all types of injection. The operator must ha the use of more alternatives in the completion and operatio the project. Certainly the regulations need more flexibili as related to well construction, monitoring and reporting requirements.

The objective of the regulations under Part 146 is prevent the degradation of sources of underground drinking water, and the agency should no lose sight of this objective in proposing these regulations.

MR. LEVIN: Thank you, Mr. Hill, would you remain f questions, please?

MR. HILL: Yes, I will.

MR. LEVIN: Any questions? Mr. Baltay.

MR. BALTAY: I have 2 questions. If you will recal we made quite a to do in the preamble about the use of the exemption for oil or mineral producing aquifer portions

MR. HILL: Yes.

MR. BALTAY: It has been argued to us during the development of the regulations that once you be designate or exempt from protection of a portion of an aquifer, you may h no way of preventing any other disposal into that aquifer portion, toxic waste, hazardous waste, whatever, and so we requested specific comments there on ways of limiting the exemptions so that production would not be disrupted but that you would not be opening this up as an alternate waste disposal sink. I wonder if you've got some help that you could give us along those lines.

MR. HILL: I don't have today, Mr. Baltay, but it's a very interesting point and it's a very critical point with us. We will in our comments go further into this it has been brought up today. But I think we really need to talk about do you confine the injection as forever in this locality, or do you clean up the aquifer? We will have comments in our detail comments.

MR. BALTAY: You anticipated my second question, which was going to be on this question of containment versus clean-up or renovation of the aquifer, and soliciting your opinions on that.

MR. LEVIN: To make it more specific, I would request if you could submit proposed specific monitoring requirements in your written comments if that is feasible.

MR. HILL: Yes, sir, we will to some extent. I must also let you know that of the 11 companies in this organization, probably about 6 will be submitting individual comments from the company, and they will cover this even more in detail.

MR. LEVIN: One other thing, if the classification of Class III is subdivided, do you have any specific proposal as to how they should be regulated?

MR. HILL: We could come up with a proposal, we had not done that. Certainly they would be very similar to the manner that the Texas Department of Water Resources is now handling that with some minor change.

MR. LEVIN: Ok, thank you. Mr. Schnapf?

MR. SCHNAPF: I have one question concerning your comment on the area permits. I gather from your testimony t you think area permits are almost necessary for your industr

MR. HILL: That's true.

MR. SCHNAPF: You did, however, state that you thou the use of an area permit should be a matter of the operator choice rather than the director's choice. I was wondering i you could clarify that and elaborate on that a little bit.

MR. HILL: Yes. If we could set up a subclass for in-situ uranium, then I think it would be more or less manda that we go into the area permit. I think the two have to go together. I wouldn't mean this for all Class III, only a sub class of the in-situ mining. Because, primary, it's an ongo operation. We cannot predict ahead where we could drill a we how many wells can we drill and so on; and it's very vital th we have the flexibility to set up an area, and then develop that as the need arises.

MR. LEVIN: Thank you very much. Mr. Ford who will be followed by Mr. Arnold Chauviere from Louisiana.

CLYDE FORD: My name is Clyde Ford, I'm with Texas Gulf. We produce sulphur by the Frasch process and I appreciate the opportunity on behalf of Texas Gulf to be able to make these comments today. I will follow these oral comments with written comments in more detail on much of our objections to the regulations as they currently exist.

These comments that are made are cumulative all of the previous comments which have been made by us, and considering the time and the effort, and the expense that went into producing those comments; and further, considering the amount of education that went into attempting to teach the EPA what sulphur mining was, and it's not pollution mining, we think it would be absolutely necessary that those comments be reconsidered or at least not ignored as alluded in the regulations.

For instance, we have had people, 2 to 5 Texas Gulf employees, at Washington, D.C., at least 4 times, to Denver once, to Dallas 3 times, to Tampa, Florida, once. Those airline tickets plus the expenses and salaries of those people went toward developing that date, and we consider it much too important to be ignored. Texas Gulf submits its prior comments by reference as part of this being made today.

The regulations as strictly applied to Frasch sulphur mining operations would be fatal. We take the position that it is imperative that the regulations provide for area permitting, which will allow the wells to be drilled without the necessity

of a prior permit so long as such wells conform to accepted practices and procedures.

Texas Gulf drills over 300 wells per year in its sulphur mining operations, and the necessity for having to obtain a permit for each one of those wells, albeit administratively, is excessively burdensome.

The well itself, being a short lived type thing, sulphur wells having an average life of less than 1 year, would probably be dead, plugged and abandoned by the time the permits got to the EPA and was considered by. There is no margin for delay in sulphur operations, it's an ongoing process. Just like the uranium mining thing. You put heat to the reservoir, the sulphur is melted and you cannot stop it, when a well dies on you, you've got to continue going with this operation. You don't have time for getting a permit. So we recommend that Part 146 be amended to provide for approval by rule rather than by permit as you do allow for Class II, Class IV and Class V wells.

Texas Gulf has operated a company owned town, known as New Gulf, in connection with its mining operation since 1929. The water supply at an average of 300,000 gallons per day for this town comes from wells drilled on the flanks of Bowling Dome. The current well that supplies this water was drilled in 1968. Since that time, we've drilled hundreds of sulphur wells around it with absolutely no adverse affect on the quality of that water. When considering this extreme longetevity with few if any problems, the method and procedures currently being us should be allowed to be continued. Because of the history demonstrated by the Frasch process operations, Texas Gulf recommends to the EPA to declare those aquifers above the mi areas as being non-drinking water sources. The EPA proposes exempting mineral oil or geothermal producing portions of aquifers from designation as an underground water source, dr ing water source. Since they recognize these certain areas non-drinking water sources, it is suggested that a declarati of the aquifers above the mining area in Frasch operations c be designated as non-drinking water sources with no adverse effect environmentally.

There are only 8 Frasch mining operations in the United States. All 8 of them are in the states of either Louisiana or Texas. All except 1, as been mining for an ex of 10 years with no environmental impact.

The Agency requested comment on the technical requ ments of Class III type wells. Under current regulations, sulphur industries have been grouped with solution mining, situ copper and uranium mining, gasification and geothermal wells. Meeting which have been held with representatives c those subgroups have made it clear that this can no longer continue with common type regulations; and that it must be categorized for each one of those industries. It is our recommendation that wells under subpart (d) Section 146.31

sub-categorized, and as for the sulphur operations because of the unique method you use in the Frasch method of production, regulations must be directed specifically toward those practices to insure that the regulations will not interfer with the production of sulphur. As I said, we can't stop the mining of sulphur. We can't stop or delay the drilling of wells in a Frasch type operations.

The Agency in environmental impact, the economics considered for Class III wells appear to be totally unrealistic, unless it is assumed that the Agency assumed that many exemptions from the regulations would be obtained. No cost was assumed for mechanical integrity test. The tests outlined in the regulations are expensive and it can only be assumed that the Agency did not see the necessity for the test. If there is no necessity for the test, there is no necessity for the regulation.

Further, only $300,000 was provided for monitoring by the entire industry. While we calculate these costs to be $240,000 for Texas Gulf alone. Even more obvious is the failure to consider the additional cost due to electric and radioactive logs, and the necessity for cementing, which we calculate will cost Texas Gulf $22,748,000, a long way from what was presented.

The economic impact presented by the Agency, we don't feel is even in the ballpark. It is noted that the economics developed by the Agency were under draft regulations dated August, 1977, which regulations are, in fact, quite different from those currently being proposed.

Much of the regulation was relieved from Class II wells using a reason there for that this industry has an eco interest in being assured that the wells will contain the wa in the formation into which the injected substance are being placed. In the sulphur industry, the extremely high cost of chemical treatment and heat must be considered when added t the water being injected into sulphur wells. This water is used for one purpose only that's only as a vehicle to convey the heat to the sulphur so that it might be melted, and by t way the water is fresh water.

If any water leaks away prior to entering the sulph formation, all of the expense of treating and heating that w is lost. We suggest that the sulphur industry, in fact, has a much greater economic interest in utilizing the water that injected; and therefore, should have the same consideration were given for Class II wells.

The draft that had been submitted by EPA on March 2 1978, the regulations, draft regulations just prior to the c that were published, were if not perfect, were headed in the right direction and could be made workable. These regulatic were developed after considerable conferences with the EPA. Much of that effort and time was wasted since the final draf regulations constitute a radical departure therefrom. Chang have been made by EPA to the end of totally abrogating an or public input which had been effective at that time to all parties.

Section 146.08 covering mechanical integrity is not effective as to Frasch sulphur mining. The test specified would either be impossible to obtain or the results would be totally meaningless. The measurement of pressure on a casing in a sulphur well means absolutely nothing when the annulus area between the tubing and the casing is where you are injecting your water into the formation.

Section 146.32, construction practices also cannot apply to Frasch wells. In the case of sulphur mining in the Cappa Salt Domes, the necessity for cement to maintain the integrity of the well is not required. Section 146.32, on page 23764 should be amended to provide exception for this type well from the cement requirement.

Secondly, there is no need to require corrosive resistent material in the case of a sulphur mine well. The materials which are used with a very short life are sufficiently resistent to corrosion to last and to protect for the entire life of that well, and therefore, the necessity for having additional type of equipment, as an additional expense, cannot be justified.

Directional logs cannot be justified on sulphur wells. Logs on wells drilled less than 2,000 feet where you have little if any deviation whatsoever, is nothing but an expense that can't be justified. And certainly would do nothing toward protecting fresh water sands.

The other logs required under this particular sectio can't be justified because in sulphur operations where the we last only 3 months to a year, and they're drilled 50 feet apa the information obtained from one well to the next is minimal You could put thellogs side by side and it would show the sar thing. So you are causing unnecessary expense with absolutel nothing being gained from it.

We recommend that the Frasch operation should be exempt from all of these sections. Sub-section (e) should be modified to require monitoring of the wells only where they a required, 5 wells appear to be an arbitrary number, I don't k where it came from. The number of monitored wells, really sh be left to the discretion of the state director. Whatever is necessary to do the job, not 5 arbitrary wells to one operati may be totally different from another. Monitoring, particula in a case where we mined for over 50 years without any impac should be kept to an absolute minimum.

Section 146.33 requires a performance bond to assure the wells will be properly abandoned. Sulphur industry is comprised of companies of substantial means because of the b. cost of plant expenses, we don't have anybody small in our business. All have sufficient financial statute and have bee able to satisfy the obligations of properly abandoning wells without providing a performance bond.

Section 146.34(a)(1) requires injection pressure to be controlled to prevent the migration of fluid into underground aquifers. Our method of operation precludes any such intent. We are controlled by the pressure that is necessary to get the water into the reservoir to get the heat to melt the sulphur. We go no higher, no lower, we've got to go to that pressure. I will point out, however, that it's never high enough to be fractured.

Section 146.34(b)(3) requires demonstration of mechanical integrity at least once every 5 years. Due to the short life of this kind of well, I kind of feel like the golfer after he had sprayed 3 of his balls over into the water hazard, and the caddy said, why don't you get a used ball, he said, I would I've never had one. I've never had a 5 year sulphur well either.

Section 146.34(c) requires quartely reporting. By the time data is collected, prepared and reported and the state analysis the data, sulphur wells having a very short normal life could have been replaced, and the data could not possibly apply when the corrective action was attempted by the state. Information gathered requires instant action on the part of the operator, and by the time the data could reach the state, we would have already taken whatever corrective action was necessary in the interest of a sufficient operation of our own interest. Quartely reports for our sulphur wells should be totally dispensed with or at most, an annual report substitu therefor summarizing the results of the operation.

MR. LEVIN: Mr. Ford, excuse me for interrupting. You are running way over time and in all fairness to additic people who still have to testify, can you summarize very quickly.

MR. FORD: Ok. The only thing that we do have to s is that much of the comment with regard to what I was going say later will be brought out in our written comments, and I do appreciate the opportunity of being here today. I will answer any questions that I can. I have the Manager of the Environmental Affairs with me, if I can't answer it maybe he can.

MR. LEVIN: That will be fine. You can ask him to come up with you if you like. But let's first see if there are any questions. Any questions from the members of the panel? Mr. Baltay?

MR. BALTAY: You mentioned a specific figure as to estimated cost of Texas Gulf alone. I would gather from the specificity of the number, that you must have some detail ba ing that up.

MR. FORD: Yes. It will be in our further comments later on, but the figures were based on our drilling 337 we per year. We went to Slumber J and Halliburton, got the co logs and the cementing that would be required which is $13,500 per year, multiplied that times 5 years and you come up with the $22,748,000 that we feel like it will cost us additionally due to the regulations as presented. With regard to the monitoring, that was based on 5 wells for 3 sites arbitrarily 1,000 feet as the depth of the well, I don't know what it's going to be, but that's what we used in our figures here. $7.00 a foot for drilling plus $7.00 a foot for the cost of the casing and then you've got 5 sites at $2,000 per well for cementing that comes up to $240,000.

MR. BALTAY: But detail will be in your written report.

MR. FORD: Yes.

MR. BALTAY: Ok, thank you.

MR. LEVIN: Any further questions? Thank you very much, Mr. Ford.

Mr. Chauviere followed by Mr. David L. Durler.

ARNOLD C. CHAUVIERE: Mr. Levin and members of the panel, I am Arnold C. Chauviere. I am the Assistant Commissioner of the Office of Conservation, in the State of Louisiana.

Last night we heard the President's plea for help from all of us to solve the energy crisis. He said what I have known for the past several years, that the isolated island, Washington, D.C., so far out of touch with the majority of the people does not have the answer.

In many instances, the stumbling block the bureaucrats place in front of our energy efforts and the name of environ mental protection has given rise to the energy situation whi we find ourselves today.

We in Louisiana are willing to do our share but we cannot if the isolated island representative from Washington will not allow us to. And Mr. Baltay and I had heard it bef I think I was privileged to comment also for Victor Kimm, I think yall all know who he is. In Mr. Baltay's address earlier this morning he outlined several parameters which ar necesssary for the Safe Drinking Water Act for a state to qualify to regulate his own business. I would like you gent ment know today that Louisiana has, and will, comply with th parameters has defined in PL93523. We are doing it now.

In addition, it was stated, which I've heard before that the states were listed in the Federal Register as needi an underground injection control program based on the amount water and the uses of that water. We,in Louisiana, are very fortunate, we do have alot of ground water and we do use it. But I can't see how the uses of ground water is any basis tc determine whether the state has an adequate program or not. On the contrary, if the state uses the ground water, it shou support the position that the state has an adequate injectic program and is not polluting the water.

I've heard comment today, and in your Federal Regis and in the rules you asked for comments relative to small operators whether they should be exempt or not. I think the small operators should be exempt, I think the large operators should be exempt and you go out of business and let the state's regulate their own business. We've been doing that for 40 years. I've been with the State of Louisiana for 32, and to my knowledge, there has not been a single instance that we know of that the ground water has been polluted as a result of injection.

And the gentleman from Dupont who addressed you earlier this morning, I didn't get it if he did say it, but he was giving cost figures as to what the regulations would require; I don't know if he addressed himself to the position where the area of review is a radius of 2 miles. And most of the hazardous waste disposal wells, are in areas where you do not have much oil and gas activity. But in the State of Louisiana, I would say that just about in every instance where we have hazardous waste disposal wells within that 2 mile radius there are several dry holes drilled within that area. Some are old and some are recent. Now if any of these wells, do not meet the requirements of EPA and have to be properly plugged, or properly completed, the disposal well permit cannot be issued, unless someone goes into that well and completes it according to the regulations. And I think of these old wells, and I've heard many instances where people have gone back into old wells, and they never could get back into the wells and do what they wanted to do. And I think that situation will occur again i any hazardous waste disposal tries to go back into an old we and the possibility is excellent he will never accomplish hi task and, therefore, he will not be issued a permit to dispo of waste in any new well.

It has come to my attention, in the last week or so that some of our political leaders throughout the country, s in Congress and some in the various states, have been concer with the federal rule making and they are frustrated with th clear intent of Congress. I'm going to be truthful with you these were in other areas where rule making by federal agenc but they were not directly related to what we are addressing here today. But I think the point is clear, and I am of the firm opinion, that EPA and their rule making was circumventi the intent of Congress in many of these regulations you are presently making.

Two different individuals this morning, and maybe t afternoon, report to the study conducted by the IOCC. I happened to be at that meeting which was held here in Dallas several months ago, which was before the National Drinking W Advisory Council, I think that's the correct title. Anyway, Mr. Johnson, was the Chairman, and the states in Region VI w presenting their position to the Council, and EPA was presen theirs at that time and at other times; and the Chairman ask he said, it's kind of confusing that the EPA is contending t the rest of the panel, that you have succeeded in confusing the regulating states in Revion VI, and I feel sure throughout the nation, by the consolidation of your permits. But I can assure you, you will not divide and counque. Now with all that ad libbing, you can permit that I have about 4 minutes to read to you.

MR. LEVIN: Was that just the introductory?

MR. CHAUVIERE: First, I would like to have my past remarks concerning the EPA-UIC proposed regulations made a part of this record, and that's if yall can find them. We still--

MR. LEVIN: Excuse me, Mr. Chauviere. Could you be specific on what is it we are suppose to find to make a part of the record?

MR. CHAUVIERE: Well, I attended several meetings and have given several statements, and you must have them somewhere. If you can't find them, these will suffice then.

MR. LEVIN: All right. Please continue.

MR. CHAUVIERE: We still object to EPA creating rules unnecessarily for those states which have workable rules and regulations now in effect. We contend these proposed rules will interfere with and impede oil and gas production in the State of Louisiana unnecessarily; and, they will have a disruptive effect on our existing state program.

I think PL93-523 says you shouldn't disrupt a state program.

In order to salvage a degree of flexibility from tl proposed regulations, it is imperative that only the applica for a new Class II and Class III permits be required to comp with the area of review requirements. If old wells were included in this area of review, it would put an impossible task on the operator and the state regulatory authority and would result in shutting in many oil and gas wells needlessl

I would just like to divert from the text a minute let you know that any new wells, and there is a great possib ity that no new wells will ever be issued if the area of rev isn't considered seriously. Because in Louisiana and the re of the producing states they've been drilling oil and gas we since 1900, and you know, and I know, that the regulations o 1900 or 1910, 20, or 30, are not like they are today. So I have no doubt in my mind that someone will find within an ar of review, a well that doesn't comply with the existing rule and regulations as to properly abandonment, and therefore, we could not issue a permit. So your answer usually is, go bacl and fix it. Go back and complete it properly. Well, that's practical and I just informed you that in most instances whe you go back into an oil well, you'll find junk in the well t you cannot go back and accomplish the fete which you are try to do. In essence, you are just eliminating any disposal operations.

In order to obtain EPA approval for primacy, the pr posed rules require that a state must demonstrate the intent and adequate legal authority to assess maximum civil and criminal fines, the same as the miximums specified in the federal law. The State of Louisiana does not have this authority, and it is very doubtful that it could obtain such authority any time in the near future.

The proposed regulations providing for "area permits" where a number of injection wells are within a single parcel of land and under the control of the same individual, is still vague and unclear. Except in a very few instances an operator, individual, will have to go through the entire public notice and hearing process for the vast majority of permits issued in a field or area. Why, why must the permit procedure be this way?

For about 4 years EPA has been involved in writing the Underground Injection Control regulations to protect the environment, and there has been tremendous public, private, state and industry participation. Once the UIC regulations are promulgated, any applicant must comply with the rules in their entirety before a permit or an area permit can be approved and issued. I would like to know why? Why, in the proposed rule draft, is it still necessary to go through the notice and public hearing process before a disposal permit or, so-called, poorly defined, area permit can be issued.

MR. LEVIN: Mr. Chauviere, I'm going to have to interru you for a moment. First, you are entering into an area that will be discussed tomorrow; secondly, you are beginning to g over time. Is there a possibility that you could summarize within the next few minutes?

MR. CHAUVIERE: I have about a page left.

MR. LEVIN: I don't know how long it takes to go ov a page, but I have to be fair to the speakers you have indicated a desire to speak, and who have tried to keep their testimony down to the allowable 10 minutes. So, if you woul please try to summarize it the best you can, we would apprec it.

MR. CHAUVIERE: Yes, sir. Are non-technical commen basis enough to disallow an applicant permission to dispose waste if he is complying with all the rules in their entiret If non-technical objections are sufficient evidence to rejec a disposal permit, we have been wasting our time these past years writing technically sound rules. If this be the case, we can just forget about disposing of waste in the subsurfac by means of disposal well.

When applying for primacy to the EPA for UIC regula authority, one of the requirements is that the applying stat must first hold a public hearing for comments concerning the application for primacy. If a state seeks primacy in accord ance with all the rules promulgated by EPA, what would be gained by the hearing? If there are objections by the publi to the state seeking primacy under EPA guidelines, does this constitute non-approval of the state's application? If the commentors object to the state regulating the program under federal guidelines, it stands to reason they would also object to the federal agency regulating the program under those same guidelines. If this is the case, who would end up reguland the program--the state, the federal government, or the public? If they object to the state applying for primacy under federal guidelines, but not under state guidelines, will the EPA accept their judgment and leave the regulating to the state?

EPA's proposed rules contemplate imposing a requirement for testing annular pressure. I am at a loss as to how an annular pressure test can be accomplished on an annular injection well. EPA guidance is needed in this area.

I feal the proposed regulations will have a crippling effect on the small oil and gas producers who have marginal and stripper wells. However, I do not have information compiled to substantiate this opinion. I hope the impact on the small operators will be known before these regulations are finalized.

Section 146.22(d)(1) requires directional surveys be conducted on all holes, including pilot holes, at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling. Directional surveys should not be required unless a hole is directionally drilled intentionally. The director, at his discretion, should have authority to require directic surveys.

In conclusion, if the EPA will allow the State of Louisiana to continue regulating subsurface injection by the state rules and regulations, we will get on with the job of trying to satisfy the nation'e energy needs. To interfere w and impede the production of oil and gas in the state unnecessarily is in direct conflict with P.L. 93-523, and will result in weakening any possibility we might have in trying meet our energy demands. Thank you. Sorry I ran over.

MR. LEVIN: Thank you, sir. We may have a questior or two?

MR. SCHNAPF: To be fair to you, I've asked several of the other states representatives a question, and I'd like to ask you the same question. First of all, does the state regulate at all, small operators. You've heard the small operator exemption tossed around here today.

MR. CHAUVIERE; Yes, sir. We regulate them all th same.

MR. SCHNAPF: What is the basic system that the state uses for regulation? Is it a permit system?

MR. CHAUVIERE: Yes, sir, I stated in the text.

MR. SCHNAPF: I'm sorry.

MR. CHAUVIERE: You weren't listening.

MR. LEVIN: I'm going to have to ask you to stop intimidating the panel.

(Laughter)

MR. CHAUVIERE: I'm really not.

MR. SCHNAPF: The final question I have was with the area of review. We've heard several of the other states say they do employ the concept of an area of review, and I was wondering if Louisiana uses that concept at all in its program.

MR. CHAUVIERE: No, sir. We don't have any specific area of review. We do review in instances where we think it is necessary. I would like to add at this time, that we have been injecting in the subsurface in the State of Louisiana for 40 years or more, and as I mentioned, I've been there for 32.

MR. SCHNAPF: I heard that.

MR. CHAUVIERE: Atta boy. To my knowledge, and the other knowledge in the department, the injection has not resulted in contamination or pollution of our valuable fresh ground water aquifers. Thank you.

MR. SCHNAPF: Thank you.

MR. LEVIN: Any other questions, I have a few. Mr. Knudson?

MR. KNUDSON: Were you talking, in regard to your area of review, of these holes or wells you are familiar with, is this relating to the oil and gas production that you had some guidance for us on the area of review, different than the hazardous waste? Or are you going in and you have wells in the area that you are unfamiliar with and you are putting a hazardous waste injection operate differently than.

MR. CHAUVIERE: Mr. Knudson, I didn't mean to imply that we would just have that problem with hazardous waste disposal wells. The problem will be more inherit with salt water disposal wells because in a majority of the cases, the salt water injection wells are where they are producing the salt water and that is in the middle of a field in an area that's been drilled from 1900 to the present time. So agai the rules of many, many years ago are not as they are today Under the rules today are designed and have been for many y to protect the fresh ground water. And I would like to add this time, when I was young and foolish many years ago, we protecting ground water and the best information we could g from the most knowledgeable people in the business in Louis and that was the U.S.Geological Survey, Ground Water Divisi which was right across the hall from our office. In those the ground water was fresh potable water was considered to 250 parts per million chloride. Which relates to 500 parts million total dissolved solids, and we have been protecting to that depth. Now, I won't say it Mr. Levin, but, EPA cc along and changes the rules. Our surface casing has been a taking care of the 250 parts per million, and now you're bı it down to 10,000 parts per million and it's kind of difficult to go back and stretch that casing.

MR. LEVIN: You've answered the question. Any other questions before I ask mine? Oh, good.

I just want to make sure I understood you correctly, when you were talking about penalties, you indicated, I think that Louisiana had no penalties. Am I correct.

MR. CHAUVIERE: No, sir, I didn't indicate that.

MR. LEVIN: Ok, could you restate it then.

MR. CHAUVIERE: What I indicated was that we couldn't meet yours. We do have a penalty. Your maximum penalty is $5,000--$10,000, we have several penalties but no criminal. Our penalties are $1,000 a day. Now we can exceed the 5 or 10 if the operator is foolish enough to violate the rules enough days. However, if it is serious, and I have to make the statement the way I did relative to penalties and fines, if it is a serious violation for just one day, we can fine him more than $1,000. So we may like under your rules be $5,000 or $10,000, so therefore, our regulations in my opinion, are not the same as yours.

MR. LEVIN: Thank you.

MR. SCHNAPF: I just want to make one point of clarification. The requirement that the state, and this is probably what we'll discuss tomorrow, but the requirement that the state hold a public hearing before submitting, EPA is directly out of act itself, something that Congress wanted, not us.

MR. CHAUVIERE: Would you go through that again.

MR. SCHNAPF: You were complaining that we required a hearing before the state submitted a program for primacy, that's directly out of the law itself.

MR. CHAUVIERE: Well, I think the law should be ame Thank you.

MR. LEVIN: I have a few others.

MR. CHAUVIERE: Mr. Levin, you're sure you are not exceeding your time.

MR. LEVIN: The comments were only for the speakers There are certain perogatives that the Chair has.

MR. CHAUVIERE: I've been on that side.

MR. LEVIN: One more question. Several states have mentioned this, and I'm not picking on you but since you are up here, I'm just curious why doesn't Louisiana have exempt: for a small operator?

MR. CHAUVIERE: I don't know why we don't have an exemption for small operators. I don't think we should hav an exemption for small operators. They can pollute our fre water acuifer just as well as a large operator.

MR. LEVIN: So you feel they should be treated all alike.

MR. CHAUVIERE: Yes, sir. I said I think they bot should be exempted.

MR. LEVIN: Could we have order here, I just have one other thing. This morning, I indicated that if I felt the regulations were clearly being misinterpreted, that we would allow the panel members to offer clarifications. I feel obligated to do so even when the law is being misinterpreted. So I would like to answer a statement for the record quoting from the House of Representatives, Report 93.1185 or the Safe Drinking Water Act dated July 10, 1974, page 32, which says in part: "The committee was concerned that its definition of endangering drinking water sources also be construed liberally. Injection which causes or increases contamination of such sources may fall within this definition, even if the amount of contaminent which may enter the water source would not by itself cause the maximum allowable levels to be exceeded. The definition would be met if injected material were not completely contained within the well, if it may enter either a present or potential drinking water source, and if it, or some form ito which it might be converted, may pose a threat to human health or render the water source unfit for human consumption.

"In this connection, it is important to note, that actual contamination of drinking water is not a prerequisite either for the establishment of regulations or permit requirements or for the enforcement thereof."

That concludes our questioning for Mr. Chauviere, thank you very much.

MR. CHAUVIERE: Thank you. Well, do you know what 1422 of the Safe Drinking Water Act says?

MR. LEVIN: I would hope so, but I would like to mo on. Thank you very much.

MR. CHAUVIERE: Thank you and excuse me for exceedi my time.

MR. LEVIN: That's quite all right, I think we hel you a little bit.

Mr. Duler to be followed by Mr. Polizi, I'm probab prouncing that wrong but we will correct it.

DAVID L. DULER: Mr. Chairman, that's going to be tough act to follow, so I'll try to keep it short.

My name is David L. Durler, I am presently employe by Texas Uranium Operations, U.S. Steel Corporation, as the Supervisor of Environmental Affairs. The following oral pr entation addresses the recently reproposed regulations for Underground Injection Control Program.

Since our company operates the largest commercial situ uranium leach operation in the United States, and as regulations in their presently reproposed form will have s. cant impact upon our operation, it is our hope that EPA wi careful consideration to each of the comments set forth in presentation.

My initial statements will address our method of and the complexity of our operation, so that those present can get some ideal of how these regulations will have an impa upon us.

Texas Uranium Operations currently has 4 in-situ uranium leach mines in South Texas. In our solution mining technique, an alkaline solution is injected into fresh water aquifer through injection wells that are screened at the desired ore horizon. Recovery wells are located near the injection wells for removal of the uranium enriched solution. Ideally, there is a constant sweeping of leachate solution through the production zone aquifer from the injection wells to the recovery wells Monitor wells surround the production area and are screened in appropriate stratigraphic horizons, both production and non-production zones, to detect any horizontal or vertical migration of leachate.

I should point out at this point, that we currently have over 300 monitoring wells now in operation.

The enriched uranium solution from the recovery wells is pumped to a processing facility where the uranium is further concentrated for eventual sale as yellowcake.

As can be seen from this brief description of our method of mining, it is necessary to inject into a marginal underground source of drinking water for the extraction of a needed energy source. From our experience, the groundwater quality within the immediate vicinity of the ore body does not

conform with EPA standards since the radium 226 concentrations may vary from 100 pCi/l to over 1,000 pCi/l. However, values for TDS will range from 800 milligram per liter to over 1,500 milligram per liter within the limits of the ore horizon. With this initial information, I would like to now comment on what Texas Uranium Operations feels to be our major concerns related to 40 CFR 146 and to a small degree CFR Parts 122.

Our first comment concerns what we consider classification of Class III wells. The criteria and standards applicable to Class III in Parts 146.31 through 146.35 cannot for the most part be rationally applied to our operation. Texas Uranium Operations currently has approximately 600 injection wells in operation throughout the four mine sites. Total depth for each of these wells is no greater than 600 feet and usually averages approximately 350 feet. Each well is cased with 4 or 6 inch I.D. Schedule 40, PVC pipe; no injection tubing is utilized. Our current drilling program averages about 5 to 8 completed injection wells per week. Therefore, it is inapplicable or unnecessarily burdensome for an operator to fulfill many of the requirements in 40 CFR 146.32 through 146.35. Examples of some of the more unflexible rules are as follows:

For example 146.32(d), must we, an operator, submit for each new injection well the fluid pressure, the fracture pressure and the physical and chemical characteristics of the injection fluids and formation fluids?

In 146.32(e), it is not possible in the case of our new Class III wells to determine the natural fluid level, an also the natural water quality prior to operation of an injection well.

Section 146.34(b)(2), it is cost prohibitive for operation to install for each, and I'd like to emphasize th we have 600 injection wells at present, to install for each injection well continuous recording devices for the continu monitoring of injection pressure, flow rate and volume. Fo the most part, our operation does not inject under pressure We just use photographic flow.

These requirements under Subpart D are even more questionable when one remembers that the entire injection w pattern area is surrounded by monitor wells that are screen in appropriate stratigraphic horizons to detect any leacha migration that may occur. It is our recommendation that C III wells be subcategorized in such a way that specific, although general applicable rules can be applied to the in mining process since it already possesses a subsurface mon well system far superior to any other method found in mini

Our second general comment concerns area permits Class III wells.

Under 122.37, it states that the director may is permits on a well by well or an area basis provided that criteria are addressed. Furthermore, it states that afte area permit has been issued, the permittee must still seek administrative approval from the director for additional new injection wells. Based on our foregoing comment that injection wells at our sites are installed at a rate of 6 or 7 per week it seems unnecessarily burdensome for the director to approve beforehand their construction and afterward their mechanical integrity. This is especially unreasonable since the State Director as already approved if a monitor well system that completely surrounds, both horizontally and vertically, the injection well pattern area. It is our recommendation that once an area permit has been issued for an in-situ leach mine, that notification of new injection wells not be required nor that a demonstration of mechanical integrity be necessary.

Our third general comment concerns the permitting scheme for Class I wells in particular.

When considering rule 146.11(c) in light of 122.36(b)(2) and 122.36(d), it is somewhat confusing as to whether the applicant must secure a permit to construct an injection well or a permit to operate an injection well, or both. It is readily apparent that no permit will be issued if the well lacks adequate mechanical integrity. However, in the introductio to 146.12, Construction Requirements, it states that "the owner or operator of a proposed injection well shall submit plans for testing, drilling and construction to the director of the initial plans as a condition of the permit". My question is, how can the director approve of initial construction plans as a conditio of the permit when, according to 122.36(d), the well must al ready be in place and mechanical integrity established befor permit is issued?

Texas Uranium Operations currently has 5 deep dispc wells that serve our South Texas solution mining operation. is apparent that the intent of the EPA in permitting Class I injection wells is to allow for well construction and mechan integrity testing prior to any permit issuance. Based on ou experience in Texas, it would not be acceptable for our com to have an injection well that is constructed, and has pass an integrity test, to remain inactive while the permit goes through the public hearing process. At a minimum, such an interim period will cause an operational delay of 2 months. company would prefer not to invest money in a waste disposa well system before having all requirements firmly agreed up and assurance that, if these requirements are met, injectic can start. We recommend that a permit be issued prior to construction of a Class I injection well, and that drilling completion, logging, formation testing, and mechanical inte testing requirements be incorporated into the permit. It be recognized that this method of permitting is fundamenta easier to grasp and to implement.

It is our concluding recommendation that the Unit States Environmental Protection Agency investigate further technical aspects of the in-situ leach industry and the econom c impact of the subject regulations prior to their drafting any further rules. On behalf of Texas Uranium Operations, I would like to express our appreciation for the opportunity to testify today.

MR. LEVIN: Thank you very much, Mr. Durler. Will you submit to questions?

MR. DURLER: Yes.

MR. LEVIN: Questions by the panel? I don't think we're tired, I think we've gotten the grasp so the testimony on Class III wells pretty much is coming out the same way. The fact that there are no questions, doesn't indicate that there is any lack of interest in your statement.

MR. DURLER: I would like to invite anybody from EPA to come down to see our site. I don't think anybody has to my knowledge.

MR. LEVIN: We do have plans of that nature, depending on our travel vouchers for next year.

MR. DURLER: We wholeheartedly welcome you to come down there, we have enough blinders and blindfolds and then some.

MR. LEVIN: Thank you. Mr. Mark Polizi, please correct me on the pronounciation, Planning Engineer Union Carbide Corporation, Metals Division, Benavides, Texas. Following Mr. Poliza will be Mr. J. R. Anderson; and Mr. Anderson, unless

I get anymore request you will be the final speaker.

MARK POLIZI: My name is Mark Polizi, I'm with Unic Carbide Metals Division, and again you will hear more on Cla III wells.

My remarks today are directed toward the applicatic of UIC regulations to our present and protect in-situ urani solution mining operations. We endorse the comments made tc by the American Mining Congress, and the Texas In-Situ Urani Mining and Environmental Association, as they pertain to the operations.

Although we have numerous comments which will be d. cussed in our written statement, today I will only discuss area wide permit concept as entered in the proposed UIC reg lations. We, as well as other in-situ leach operators, req numerous injection wells within a small area for our proces ~~In addition, Union Carbide uses each well as both an extrac~~ and an injection well. A given well may be used for inject or extraction or may be left idle depending upon production requirements. Therefore, every well we drill will have to considered an injection well for regulation purposes.

Production of uranium during one year from 15 to 2 acres of our ore bodies requires the drilling and operatior hundreds of wells. These wells are spaced from 30 to 50 fe apart. The ore zone under production is treated as an area and leachate migration is monitored by area wide tests and ground water monitoring system around the production area.

In several years of operation, thousands and thousands of wells which have been drilled over only 800 to 1,000 acres, incidentally, these wells would have all been constructed, cemented, completed and testes identically. After uranium has been recovered, the well is plugged and the aquifer restored to pre-production levels as required by current state permit regulations.

Complying with the UIC regulations in their present form would be redundant and create a costly and meaningless paper work suffle for the operator and the regulating agency. For examples, 146(c), Section (146.06, 146.08, 146.31, 146.32, 146.34, 146.35 and 122(a), Section 122.37 employ direct and indirect use of the well by well philosophy. Items such as submittal of plans for testing, drilling, and construction for each well is equivalent to permitting each well. Also, the requirement that we report every well as specified in the area permit definition, is a tremendous burden. Given that formation characteristics and construction techniques are identical for each insitu uranium production well.

The main requirement of the area permit should focus on prevention and detection of leachate migration by area wide integrity test in a sufficient ground water monitoring system. Thank you.

MR. LEVIN: Thank you, sir. Are there any questions?

I have one. You indicated that you have ground water monitor system, there was previous objection to what we have in our regulations, that is the 5 monitoring wells. Can you descri your system as to the number of well, what it looks like, e

MR. DULER: At present we have permitted about 30 acres, a little bit more than that, we have a total of abou 19 production zone monitoring wells encircling our area whi monitors the horizontal migration leachate. We also have a 7 upper aquifer monitoring wells which would monitor the vertical movement of leachate into our upper aquifer.

MR. LEVIN: Thank you. Any other questions? Than you very much.

Mr. Anderson?

JIM ANDERSON: My name is Jim Anderson, I'm with t Olen Corporation, Regional Manager, Environmental Affairs, I have the responsibility for Olen's 5 chemical plants tha in Region VI.

My comments will be very brief since I am last. also will address the Class III area, and I would like to describe an operation we have in Louisiana that points up of the deficiencies in the regulations as they are now pro

This is a sodium chloride solution mining operati in which fresh potable water is injected into the salt dom and leaches out the cavity, the brine is forced out by th injection pressure so the integrity is essential to an eff operation, and the brine is piped to a chemical plant which uses it.

After awhile, the cavity gets larger and larger as the well is used, and soon it becomes an attractive hydrocarbon storage area. As a matter of fact, the government took all of them away that we had down there and created a strategic reserve. But the point of it is, is that it was a Class III well until it was turned over to hydrocarbon storage, and now it becomes a Class II well. To repeat, we put fresh potable water down in there and dissolve the salt and force the brine out. When it becomes a hydrocarbon well, they either pumpt down into the well to displace oil or they pump oil down into the well to displace brine.

In the regulations by transitting from a solution mining well to a hydrocarbon storage well, there are 8 specific areas in which the regulations are less stringent for the hydrocarbon storage than they were for the initial solution mining. Including among that less stringent is the very expensive drilling of 5 monitoring wells into a salt water strata which could not possibly do anything but detect migration of fluid even before you started operations.

I think the point of this story is, the drastic need for more flexibility in the regulations, and also, the need to allow the conduct of the program by knowledgeable people in the local area such as the state. This concludes by comment and the company will include these among those specific comments in letter to EPA by the deadline.

MR. LEVIN: Thank you, Mr. Anderson. Are there an questions by members of the panel? Ok, thank you.

Babette Higgins, has she come in? Mr. James Grecc has he come in? Is there anybody else in the audience who wishes to make a statement?

If not, just a few words, when I adjourn this hea: there is some time left, and I promised you this morning, though I have not received any 3 x 5 cards we will be happ to answer any factual questions about the regulations for members of the audience who have not testified today, for approximately one-half hour or so.

Secondly, a word about tomorrow hearings. The da version will be on Parts 122, 123, and 124. We will begi promptly at 9 o'clock, for those of you who will be happy this, you will have a new Chairman tomorrow.

I would like to thank all of you for the attenti you've given us this afternoon and this morning on behalf the panel. This hearing now stands adjourned.

(Whereupon, at 3:50 p.m. the hearing was adjourr

C E R T I F I C A T E

This is to certify that the attached proceedings before the U. S. Environmental Protection Agency were had as therein appears; and that this is the transcript thereof for the files of the Agency.

Betty Morgan

Betty Morgan, Reporter