

March 8, 2006

Mark Fesmire Chairman Oil Conservation Commission OCD Director Energy, Minerals and Natural Resources Department of New Mexico 1220 S. St. Francis Drive Santa Fe, NM 87505

Dear Chairman Fesmire;

The following comments are made on behalf of the Independent Petroleum Association of New Mexico (IPANM) regarding the Oil Conservation Division's (OCD) Proposed Plugging & Abandonment and Pits & Below-grade Tanks Rules (hereinafter referred to as 'the Pit Rules'). The proposed 'Pit Rules' will be considered at the April 20th, 2006 Oil Conservation Commission (OCC) meeting. IPANM consists of 180 companies who mostly live and work in New Mexico, raise families in New Mexico and hire locally to produce oil and gas in New Mexico. Many companies are second, third or fourth generation oil people. Independents drill some 85% of the domestic wells and produce some 82% of the natural gas and 68% of the crude oil in New Mexico. Our members have a tremendous stake in New Mexico.

. Primarily, the members of IPANM strenuously object to the underlying premise that changes are needed to the current method of pit closure. Over the course of 80 years,

expertise in the industry has developed closure techniques that are cognizant of the individual nature and factors of each pit and geographic locations while protecting the ecosystem. Although there may be anecdotal stories of water well contamination and harm to livestock, empirical evidence indicates that the current methods of pit closure are the safest means of protecting the fresh water, human health, safety and the environment while balancing the very important need of resource development. Established science refuting any changes in the pit rules was presented to the OCD in two separate stakeholder meetings, on January 12, 2006 in relation to the proposed 'Surface Waste Management rule', and on February 27, 2006 in relation to the proposed 'Pit Rule'. Over the course of two days, six experts presented overwhelming written and oral testimony establishing that the current system of using pits, closing pits and remediation presents little or no harm to fresh water, public health or the environment. The experts noted that due to fluid circumstances and differences in geophysical terrain, that a one-size-fits-all approach to regulating pits and surface remediation is not reflective of the best science available. OCD must consider the federal standard of 'best demonstrated available technology" ("BDAT"), see 61 Fed. Reg. 18,780, 18,807 (1996), to determine whether changes in policies relating to pit closures are needed.

Any attempt at creating a Pit rule must consider multiple factors including but not limited to, the degree of risk if any, resulting from the types of residuals in the pits versus the benefits of on-site bioremediation. IPANM feels strongly that no change to the pit procedures are necessary, however, we would point out that there is a fatal flaw in the proposed rule to 'have it both ways'; on the one hand the OCD wants to dry out and close pits within 6 months rather than the current one year practice, on the other hand the OCD wants to excavate pits completely and haul the liners to land farms. First, shortening the

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closure time period to six months is unreasonable, unsafe and it will cause additional scarred pit locations. The better practice is to conduct on site closures after drying the pits within one year from cessation of drilling and surface restoration is completed within eighteen months. Fencing requirements would prevent livestock impingement until the surface restoration is completed. Second, the discussion in the proposed pit rule of transporting wastes and liners from the pit locations to a land farm, the direct harm to the environment, the risk to the public health and the astronomical economic impact far outweigh the minimal hazards of in place pit closure. In addition, there may be direct RCRA violations in the land farms with the dumping of the 'waste' and used synthetic liners. As a basic matter of policy, the OCD must adopt only risk based policies rather than hazard based. Dr. Ben Thomas, an expert on toxicity and remediation, defines hazard as "the ability to cause an adverse effect", while "risk is defined as the probability of an adverse effect". Dr. Thomas testified that this is comparable to the situation of knowing that stepping in front of a bus is a hazard while stepping in the street in front of a bus that is 5 blocks away is a low probability of risk. Comparatively, the OCD must understand that in the oil and gas industry there will be situations where a pit may contain a petroleum based constituent that may independently be considered a danger, but because of its molecular structure the compound can not cause a risk to the public health, fresh water or the environment.

Note that under established federal and state law, additional precautions to protect the public must only be taken if a compound is considered a "hazardous waste" as defined by the EPA. <u>See Association of Battery Recyclers v. U.S. Environmental Protection Agency</u>, 208

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F.3d 1047, 1050–56 (D.C. Cir. 2000), ¹ While established science has determined that the contents of a pit created for oil and gas drilling and operations are non toxic and therefore not hazardous waste, the transport and abandonment of synthetic liners to a land farm could render the liners to be 'hazardous waste' under RCRA and therefore subject to Environmental regulations. In conclusion, any attempt by the OCD to create regulations to prevent *all potential* hazards to the public is a goal that ignores that statutory balance the OCD must take to protect and manage conservation efforts with the responsible development of oil, gas and natural resources to the benefit of New Mexico.

I. General Comments

A. Conclusions based on science provide no technical justification for the proposed pit rule.

As clearly demonstrated by the experts in the Surface Waste Management and the Pit rules meetings, the proposed Pit rule is not based upon sound peer-reviewed science. Since the proposed rule unmistakably conflicts with several portions of the proposed Surface Waste Management rule, IPANM demands that the inconsistencies are identified and addressed.

At the stake-holder's meeting of February 27, 2006, several experts in the fields of soil science, remediation and toxicology presented written and oral testimony regarding the proposed pit rule. Dr. Ben Thomas of Exponent, a recognized expert in hydrocarbon toxicology and risk assessments, addressed the toxicity of pit materials. Dr. Lloyd Deuel, of Chemist-Soil Analytical Resources, Inc., a soil chemist, discussed the required soil and pit

¹ "Solid wastes are "considered hazardous if they possess one of four characteristics (ignitability, corrosivity, reactivity, and toxicity) or if EPA lists them as hazardous following a rulemaking." Columbia Falls Aluminum Co. v. EPA, 139 F.3d 914, 915 (D.C. Cir. 1998) (citing 42 U.S.C. s 6921(a), 40 C.F.R. pt. 261). Disposal of hazardous waste is forbidden unless the waste is treated to reduce its hazardous constituents or stored in a manner ensuring that the hazardous constituents will not migrate from the disposal unit. See id. (citing 42 U.S.C. s 6924(g)(5), (m))."

conditions to prevent salt mobility. Dr. Daniel Erskine, of Maxim Technologies, Inc. in Albuquerque, applied the salt mobility discussion to New Mexico, specifically the differences between the Southeast geophysical attributes to the Northwest water and pit conditions. At the conclusion of the stake holder's meeting, it was clear that no change in policy is necessary for pit closures.

1. Dr. Ben Thomas, PhD, Exponent – Health Sciences Group

Dr. Ben Thomas had over 30 years of experience in toxicology, pathology, risk assessment, regulatory negotiations and strategic planning. He has supervised large multidisciplinary projects using risk-based methods to establish remedial priorities and closure under RCRA, Superfund and state programs.

Dr. Thomas' presentation overwhelmingly achieved two goals: To summarize the understanding of the toxicity of pit contents; and to provide specific technical comments to the OCD's proposed pit rule. In brief, Dr. Thomas outlined the history of the analysis of toxins in the oil field. In 1988, the Environmental Protection Agency concluded a near decade long study of toxicity issues in resource conservation and recovery. The EPA determined that oilfield 'extraction and production wastes' do <u>not</u> present such risks that they warrant regulation as hazardous waste. Documented quantitative risk modeling further indicated that, when managed in accordance with current State and Federal requirements, exempt oil and gas wastes rarely pose significant threats to human health, safety and the environment. Dr. Thomas has personally tested and quantified the toxicity of oilfield wastes for the Louisiana Department of Natural Resources² in 1998. As part of his analysis, Dr.

² Thomas B. <u>Phase 3 Report: Risk-Based Evaluation of Exploration & Production Wastes</u>, Submitted to Louisiana Department of Natural Resources, Office of Conservation, Sept. 14, 2000.

Thomas analyzed oilfield wastes by the Toxicity Characteristic LeachingProcedure 40 C.F.R. §261.24 (TCLP) standard mandated by the EPA.

"Because Congress had defined hazardous waste to include any solid waste that may "pose a substantial present or potential hazard to human health, safety or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed," 42 U.S.C. § 6903(5)(B), the EPA set out to design a test that would determine whether a solid waste would pose a risk to human health, safety or the environment if it was mismanaged. See 55 Fed. Reg. 11,806/1" Association of Battery Recyclers v. U.S. Environmental <u>Protection Agency</u>, 208 F.3d at 1050 (Justice Ginsberg writing the decision for the court) The TCLP scenario assumes the "co-disposal of toxic wastes in an actively decomposing municipal landfill which overlies a groundwater aquifer," 45 Fed. Reg. 33,110/3; this hypothetical landfill is composed of "5 percent industrial solid waste and 95 percent municipal waste," 51 Fed. Reg. 21,653/3; the toxic waste leaches unattenuated to the groundwater strata, see 45 Fed. Reg. 33,111/2; and the closest well for drinking water is 500 feet down gradient from the landfill. See id. In order to conduct the TCLP, the EPA first determines the composition of the waste sample. If the sample contains less than 0.5% dry solid matter, called the "solid phase," then the waste is filtered; the liquid passing through the filter is considered the TCLP extract and is analyzed to determine the concentrations of various chemicals. See Office of Solid Waste, EPA, Method 1311, in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, §§ 2.1, 7.3.15, 7.3.16 (3d ed. 1998) (EPA Publication SW-846). After applying a dilution and attenuation factor to simulate the diminution in concentration "expected to occur between the point of leachate generation and the point of human or environmental exposure," (Edison Electric, 2 F.3d 438, 441 (D.C. Cir.

1993), the EPA determines whether any of the resulting concentrations of certain chemicals are equal to or greater than the concentrations listed in 40 C.F.R. § 261.24, tbl. 1. If they are, then the waste is considered toxic and, consequently, hazardous. 40 C.F.R. § 261.24(a).

In the pit testing conducted by Dr. Thomas, <u>no</u> waste type showed concentrations of the inorganic constituents in excess of the EPA allowable TCLP reference levels for nonexempt waste³. *See, Thomas B. Feb. 27, 2006 OCD power point discussion notes, page 4.* Note that the TCLP standard requires solubility of constituents as a means of achieving potential toxicity to plants, animals or humans. Thus, drill cuttings and natural material additives⁴ used for drilling the wells and the majority of the 'waste' or mud in pits will almost <u>never</u> meet the hazard standards for TCLP. In addition, the TCLP assumptions of landfill directly over a water aquifer are conditions more similar to urban municipal waste regions in the Northeastern parts of the United States rather than the arid Southwest with little water, if any, at very deep well depths. As discussed by Dr. Thomas, of materials potentially in a pit, the only significant constituents are BTEX⁵ or chloride from trace hydrocarbons in formation fluids. In the rare instance that formation fluids in the form of hydrocarbons are in a drilling pit, volatilization to the atmosphere and biodegradation will dissipate any BTEX or Gasoline-range organics while the chlorides are contained by engineering controls and the natural clays of the drilling mud. *Id, page 8.*

³ Dr. Thomas discussed the possibility of contamination from other sources as a potential explanation for raised trace levels of Benzene.

⁴ The natural additives added to a drilling operation are starch, cedar chips and clay. Note that brine or salt water is used in the Southeast drilling operations while in Northwest New Mexico, fresh water is used for drilling. From the toxicity standpoint, the salinity of the brine will increase the levels of chlorides in the pit which will require a different closure standard.

⁵ BTEX made up of benzene, toluene, ethyl benzene and xylenes are defined as having a carbon range number of C6 to C10, and are the most 'light' and therefore toxic, volatile, water-soluble and environmentally mobile constituents of gasoline range organics GROs. The GROs may be in pits from drilling light crude oil or natural gas wells. *See Thomas, B. power point presentation, pg. 6.*

Dr. Thomas concluded his comments to the proposed pit rule by stating, "there is no need to remove pit contents and liners from drilling and work over pits at closure. The presence of clay within the pit has benefits for permanent closure in place. If closed properly, there is little regulatory need or benefit for analyzing residual concentrations of BTEX, or TPH⁶ (of any type)". Thus, consideration of the best available scientific and technical information demonstrates that pit contents exhibit only trace levels of toxicity due to minimal amounts of formation fluid hydrocarbons in the pits, and these trace hydrocarbons are naturally eliminated by volatilization and biodegradation.

2. Dr. Lloyd Deuel, Jr., Chemist-Soil Analytical Services, Inc.

Dr. Lloyd Deuel Jr. has over 30 years of experience as a Soil scientist in field investigations involving environmental impact assessment of historic and recent oil and gas operations and other industries on land resources and development of restoration plans that conserve natural resources. Dr. Deuel currently serves as a 'Technical Advisor' to contractors developing on site remediation processes as alternatives to 'dig and haul' in association with the Texas abandoned oil and gas site restoration program. Dr. Deuel also is a Research Soil Chemist actively involved in evaluating alternative restoration procedures and processes including lime stabilization and bioremediation of petroleum hydrocarbon impacted soil, halophyte restoration of salt impacted soil, converting oil-field wastes into re-useable solid resources, and converting highly eroded, salt scalded landscapes into shallow surface water impoundments.

⁶ TPH or total petroleum hydrocarbons were the primary topic of discussion on the Surface Waste Management Rule. Dr. Thomas maintained that there is no scientific basis for OCD's concern with total TPH numbers, the correct scientific method in EPA 8051B for measuring TPH is TPH-GRO for condensate and TPH-DRO for crude and drilling fluids.

As a soil expert, Dr. Deuel focused his presentation on the explanation of the significance of salt parameters in drilling and work-over pits. Dr. Deuel claimed that the same factors that prevent hydration or that accumulate in native subsurface layers will not result in redistributions by capillary action or leaching. See Deuel, L. Feb. 27, 2006 OCD presentation power point, pg. 3. Salinity refers to the mineral constituents dissolved in water. There is a wide range of distribution and concentration of salinity in native soils and can be measured as electrical conductivity (EC) or salts in solution. Wells drilled in Northwest New Mexico using fresh water will have significantly lower EC levels than Southeast wells that are drilled using saturated brine. Similar to research completed by Dr. Thomas, Dr. Deuel was able to quantitatively prove that a mud liner in a pit will prevent any leaching or passage of chlorides. Id. citing, Deuel, L.E., and G.H. Holiday. 2000. SPE Int. Oil & Gas Conf. Beijing, China. SPE 64637. According to the best scientific practices, salt will not migrate if the soil electro-conductivity (EC) and pit moisture are controlled; measures specific to each pit will dictate when soil EC or pit moisture parameters are exceeded. In addition, liners in pits are recommended only during operations for freshwater drilling pits underlain by shallow ground water of less than 20 feet. In the Southeast, regardless of water depth, the use of a liner during operations is recommended for brinebased drilling. Finally, contrary to the OCD proposed pit rule, the environment, fresh water and public health are best protected with the in place closure of pits with a minimum 3 foot soil cover for freshwater drilling pits and a 4 foot cover for brine-based pits.

3. Dr. Daniel Erskine, Maxim Technologies, Inc.

Dr. Erskine, an Albuquerque based scientist, examined the potential for impact of the current pit procedures on New Mexico ground water. According to Dr. Erskine, the typical

operator in San Juan County will use PVC sheeting to line a pit that will be active for less than six months. Any excess fluids are recycled, evaporated or hauled to regulated disposal facilities, drill cuttings and solids are left in the pit to be dried by evaporation while clays in the pits will retain some moisture through capillary action. Dr. Erskine discussed the newest scientific findings that reverse traditional thinking in how moisture rises to the arid surface rather than migrating downward towards a water table. Xeriscape landscapes are able to pull moisture upward thru capillary action and surface tension. *See, Erskine, D., February 27,* 2006 OCD presentation, power point p. 8-9. Thus, of the very small amount to pit content water available, osmotic pressure, diffusion and chemical interactions will stabilize pit contents and therefore, 'in-situ' pit close will not impact fresh water, human health, safety or the environment.

The scientific findings and response to the proposed pit rule was that there is no need for a change to the current practices of pit closure. An in depth discussion of the contents of a pit reveals that there are no constituents that are hazardous, nor toxic as defined by the EPA in the TCLP testing modality. With the use of lined pits during operation, there is little risk of concentrations of saline migrating down in to the water table. In fact, remediation efforts through planting of native species will result in pulling moisture up towards the surface. It was emphasized that a full evaporation of the pit contents must occur thus the one year time period in the current rule is sufficient and should not be shortened as in the proposed rule.

B. Excavation of all contents including the liner from all pits and transfer to a division approved waste disposal facility is unreasonably costly and is not protective of the fresh water, public health or the environment.

The proposed pit rule fails to determine or indicate which kind of pit needs to be tested or excavated. A clarification in the proposed pit rule of which types of pits need to be lined, which pits can be closed in place and which pits must be excavated must be discussed. Currently, work-over pits are not lined and in regions with high clay concentrations in the soil, the need for a liner should be based on the specifications of each location rather than a one-size-fits all designation. Since there is no verified scientific evidence that contents from a pit, lined or otherwise, have caused harm to fresh water, human health, safety or the environment, until there is demonstrable proof of harm, changes to OCD regulations may violate the agency's statutory mandates.

Moreover, all scientific evidence indicates that there are no toxins in any type of oil and gas pit, thus, removal of the pit will not achieve any additional protections for the public safety. In fact, the excavation of the pit and transport of the contents and the used liners will result in approximately 25 million additional driving miles per year – at a cost of 3.5 million gallons of diesel fuel and an increase in drilling costs of more than 10% per well⁷. Currently the cost of closing a pit is about \$12,000 to \$15,000 which involves rolling the liner into an on-site trench and back filling the pit and the trench with native top soil. With the proposed rules, it is estimated that the cost will increase 15 fold to about \$180,000 to \$200,000 per well to fully excavate, test and remove all contents from the site to a land fill. This is assuming that under the Surface Waste Management rule that permitting for landfills will occur with enough speed to accept the increase in demand for land fill space⁸. It is also interesting to note that none of the other top seven oil producing states require more than evaporation of liquids in the pit and back fill to close industry pits.

⁷ Collins, G. for CARE, "*It's the pits*" comments on NM proposed drilling pit closure rule, March 2006, pg. 2 ⁸ In fact, it would not be surprising to find out of state or tribal concerns accepting industry non hazardous 'waste' product and used liners – a very high price. Currently, all Northwest operators must transport excess cuttings and waste from closed loop systems to Southeastern New Mexico since there are no land fills up North. Note that indemnity issues for the erosion and potential toxicity of pit liners will not be resolved and may result in future extensive environmental litigation against the State.

As discussed by Dr. Thomas, using the EPA's TCLP testing modality, there are no contents in the pit that meet the standard for hazardous wastes which would require testing and removal. The removal of the PVC pit liner to a land fill, however, may meet the EPA's standard for 'hazardous waste' defined as any solid waste that may "pose a substantial present or potential hazard to human health, safety or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed," 42 U.S.C. s 6903(5). Because the synthetic liners would be abandoned on a land fill and left to erode and corrode, or could potentially ignite, this unintended consequence of 'waste' created by this proposed pit rule could result in releasing toxins to the environment.

Thus, the need for excavation of the pits is not based on sound scientific principles. The additional outlay of transporting the pit contents including the liners will cost industry thousands of additional dollars per well site, it will cost the public millions in lost state revenues due to drilling slow downs and increased operational costs – in the form of additional diesel fuel expenses, wear and tear on trucks and tires. The proposed rule will also have the unintended consequence of releasing thousands of tons per year in vehicle emissions and dust and decomposing PVC liners thereby severely affecting the health and public welfare of the citizens of New Mexico.

C. The requirement to take five point samples from the four corners to send to an independent lab ignores established science that pits contain non-toxic materials.

Since all testimony indicates that oil and gas pits continue only trace amounts of any harmful content, there is no need to mandate testing, nor impose the cost of testing for non existent toxins. As discussed, any trace amounts of BTEX which may get to a pit will be volatilized or biodegraded naturally. The cost and wait time imposed by the testing and delay for results will not result in any benefit to protect fresh water, the health and safety of

the public or the environment.

D. There is an over emphasis on the benefits of closed loop systems in the proposed rule. While the language relating to the closed loop systems is permissive, hauling wastes is mandatory. There is no scientific proof that closed loop systems are of a benefit to the human health, safety or the environment.

A typical well has an 12 1/4" hole drilled to 1800' and yields 1473 cubic feet of cuttings, an 8 3/4" hole is drilled to 8200' and yields 2673 cf of cuttings for a total of 4146 cf - assuming a gauge hole and no "swell factors". For every barrel of cuttings that goes over the shaker and centrifuges in a closed loop system, there are about 1.25 barrels of fluid that are lost over the slides totaling about 935 barrels. To contain the 4146 cf of cuttings and the 935 barrels (5,250 cf) of fluid, requires a pit that is approximately 125' by 12" by 6'. The surface area for this pit would be at least 2300 sq.ft. By contrast, a reserve pit for a conventional circulation system is usually 10,000 sq. ft.. However, an on site visit to a working location revealed that the disturbed area for water tanks, overhead centrifuges and cutting holding tanks and a water discharge pit resulted in approximately 9,000 sq. ft of disturbed surface – the same as for a conventional system.

Now consider the guaranteed environmental impact of using a closed-loop system: (1) Additional tanks means more land cleared for well pads; (2) Trucks must haul much more water creating more air pollution, noise, dust in the air, road damage, and fuel consumption; (3) More ore must be mined to create the steel needed for the tanks; (4) These tanks require a lot of intensive welding, which puts more noxious fumes into the air. There are many more unintended consequences. In closed-loop systems controlling the drilling process is much more difficult. It's harder to maintain the proper balance of fluid in the hole. If the mud is too heavy it slows down drilling, which sometimes leads to the mud "gumming up" the porous rock so the well cannot produce. Money is wasted and a new well must be drilled creating more environmental impact. If the mud is too light a "blowout" can occur in which large amounts of gas are vented into the air. Blowouts are also very dangerous for oilfield workers.

Additionally, closed-loop systems cost anywhere from \$100,000 to \$300,000. Because oil and gas are commodities, oilmen cannot charge more for their product even though it's more expensive to produce. The added cost creates a disincentive for oil companies to drill in New Mexico when they can do business elsewhere more cheaply. Fewer producing wells equal fewer tax dollars. Thus, any regulatory requirement for an operator to use a closed loop system should occur only in the case of a real and scientifically identifiable threat to known ground water or known sensitive surface conditions.

II. Other Technical comments

A. Definitions

1. <u>19.15.1.7 (R)(6) Re-vegetation</u>: Since re-vegetation and reclamation do not protect the fresh water, human health, safety or the environment, this issue is outside the statutory responsibility of OCD. Therefore this definition should be deleted from the proposed rule.

2. <u>(W)(2) Definition of Water:</u> Similar to the re-vegetation question, water issues are outside the OCD's jurisdiction. However, IPANM suggests that the definition of water be consistent with the legal definition of water in the regulations of the State

Water Quality Act (§§ 74-6-1 et seq., NMSA 1978). Under this Act, water is defined as "all water, including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water [§ 74-6-2.G, NMSA 1978]". Groundwater is interstitial water which occurs in saturated earth which is capable of entering a well in sufficient amounts to be utilized as a water supply. An aquifer is a subsurface water bearing unit that transmits water rapidly enough to supply useful quantities to springs and wells. Dr. Richard Perkins of EID testified in a May 8,1985 EID hearing that an acceptable water supply must be present on a year round basis. <u>See</u>, Bohannon, P., "New Mexico Environmental Law Handbook", Butterworth Legal Publishers, Austin, Texas.

3. <u>(W)(3) Water contaminant:</u> The OCD must clarify the definition of water contamination to mean 'waters that exceed New Mexico water quality standards as defined in the State Water Quality Act (§§ 74-6-1 et seq. NMSA 1978). A toxic pollutant means a contaminant that would unreasonable threaten to injure human health or the health of plants or animals used by man. The mere listing of a substance as a toxic pollutant does not make it a toxic pollutant unless it is shown to exist at a concentration by scientific data at a level to have a potential to cause one or more adverse health effects.

4. (W)(4): Watercourse should be any 'river, creek, canyon or wash or any other channel having definite banks and beds with visible evidence of *frequent* flow of

water". The evidence of frequent flow of water would require the protection of true waterways rather than a dry water bed from a hundred years ago.

5. <u>(W)(5) Water pollution:</u> Similar to the discussion for water contamination, this definition must be consistent with the Water Quality act [§§ 74-6-1 NMSA 1978] and therefore should refer to that statute.

6. <u>(W)(7) Wellhead protection area</u>: The proposed rule creates a protection area of 200 feet from a domestic well or spring that less than five households use for domestic or stock watering purposes, or within 1000 feet of any other fresh water well or spring. According to the expert testimony and scientific proof, there are no toxins or hazardous materials in a pit, thus, there is no need for a well head protection area or restriction. In addition, since the amount of water in New Mexico is so low, creating a restricted area for drilling effectively imposes a taking under eminent domain provisions.

B. Other substantive concerns:

1. **19.15.4.202 Plugging and Permanent abandonment:** IPANM does not believe rules on plugging should be in a pit rule. In the interest of better information for industry and clarification, the rules on plugging need to be in a rule exclusive to plugging. As to the information necessary to be welded on the marker, only the necessary numbers, such as the unit letter need be added. Any other information such as the API number or the footage information is redundant.

2. <u>19.15.2.50(4)</u> Pits and Below Grade Tanks: Based on testimony there is no scientific evidence of a need for such extensive design requirements. In addition, there is no definition of 'ground water sensitive area'. The language in Section (C)(2)(a) seems to indicate that this area is different or in addition to a well head protection area. As noted above, there is no scientific basis for creating a well head protection area.

3. <u>19.15.2.50 (4)(C)(2)(b) Liners:</u> Based on scientific evidence, there is no need for pit liners – particularly in areas with high clay concentrations. At a minimum, this section needs to be clarified and expanded into list form for clarity. In the alternative, the rule needs to be reorganized to separate all drilling and work over pits into a separate section. The specification of types of liners creates inflexible systems that will ignore the potential for using new science and information.

4. <u>19.15.2.50 (4)(C)(2)(e) Drilling and work over pits:</u> The goal of an operator is to maintain balance of pressure in the hole to prevent flow-over. The rule must state that the 'supply of fluid is available and sufficient to [added] *control and balance the pressures in the hole to* confine oil, natural gas; or water within its native strata.'

5. <u>19.15.2.50 (4)(C)(2)(h) netting</u> Reducing the size of the pits that must be netted is still contrary to established science. There is no evidence that pits between 16 feet and 8 feet in diameter attract more migratory birds. Later on in this subparagraph, drilling and work over pits are exempt from the netting requirement, the placement of this exemption in this section is confusing.

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6. 19.15.2.50 (4)(C)(2)(h) Unlined pits the complete prohibition of the use of unlined pits is contrary to established science. Further, the use of lining in pits was discussed at prior OCC hearings. As noted previously in this document, the contents of a pit, solid minerals, cuttings, saline etc. can not migrate due to their molecular structures. Cuttings etc. are non soluble and therefore will not migrate. BTEX, if any, will volatilize or bio-degrade naturally, regardless of the type of liner in a pit. The use of a clay pit in fact will act as a barrier preventing migration of salts. Finally, if the correct procedures are used to evaporate any moisture in a pit, the remediation will pull moisture up and out of a pit. The placement of a synthetic liner in a pit creates an unnatural barrier that will initially trap moisture, but then will degrade and decompose, releasing foreign molecular structures to the ground. Indeed, at the stakeholder meeting on Feb. 27th, there was concern about requiring liners in all pits. First, due to erosion etc. livestock has been known to attempt eating the liners that come up to the surface. Second, excess liner has been burned out on the oil field, causing release of toxins and potential danger to workers and livestock if the fire gets out of control. Third, the cost of lining pits for discharge after July, 1, 2006 will be prohibitive on industry and has been proven to be unnecessary. Fourth, the true concerns motivating the liner discussion relate to migration to the water table. however, in the very arid conditions of New Mexico with deep water tables, the concerns are moot.

7. <u>19.15.2.50 (4)(C)(3)(a) Below grade tanks</u> Similar to the discussion in opposition to requiring liners for all pits, the requirement that all below-grade tanks must be constructed with second containment and leak detection is not supported by

science. This requirement should be limited only to situations where the pit will be within a watercourse or within 200 horizontal feet of a river. If no surface water exists, there is no need to impose this additional cost on operators.

8. <u>19.15.2.50 (4)(C)(3)(b) overflow of below grade tanks</u> the complete

prohibition of overflow ignores reality and imposes unreasonable regulations on operators. There are other OCD provisions allowing for exemption of the reporting of small spills, which this provision of the proposed pit rule contradicts.

III. CONCLUSION

IPANM notes that the Oil and Conservation Division must be mindful of its statutory mission to protect the fresh water, human health, safety and environment while allowing for the responsible development of natural resources in New Mexico. The proposed pit rule, as written in the October 26, 2005 draft, does not allow for development and is not the best means of protecting our ecosystems. The rule is not based on sound scientific principles as demonstrated by three experts who testified on February 27, 2006 and several others who had previously testified to the same scientific principles in relation to the Surface Waste Management rule. In essence, the contents of an oil and gas drilling, work over or operations pit do not contain toxins of any type that are harmful to the freshwater, human health, safety or the environment. The trace constituents that may be hazardous are generally volatilized or bio degraded such that all that is left in the average drilling pit will be water mud, starch and cedar chips. Depending on whether the pit is in the Southeast or Northwest, the water will be fresh or brine. Since the water with high salinity is normally found in the Southeast, re introduction of this water to the ground does not imbalance the ecostructure. Thus, the use of a liner during operations may be prudent. However, requiring all pits to be lined, including

those in operation presently is not sensible or economically viable for smaller operators. When closing the pit, all scientific evidence points to in-situ closure after a sufficient time for evaporation. Covering the pit with several feet of top soil and native plants will also assist in evaporation of any remaining moisture. The requirement in the rule, section 19.15.2.50(F)(b)(i), that pits be evacuated is completely contrary to established scientific principles. The cost to the human health in increased emissions, dirt disruption, ripped liners spilling moist muds on the grounds, liability in transport of heavy wet liners and final abandonment of the liners in a land farm, are astronomical. The fifteen fold cost of the proposed closure, increasing a typical closure from \$12,000 per pit to \$180,000 will place undue financial burden on small operators. Similarly, it will place additional burdens on large operators, who have a luxury of simply expanding their drilling operations in other states.

Thank you for the opportunity to comment on the proposed pit rules. If you have any questions, please do not hesitate to contact me at 505-238-8385 or 505-771-3200.

Sincerely,

Karin V. Foster Dir. Governmental Affairs IPANM