State of New Mexico
ENVIRONMENTAL IMPROVEMENT BOARD
Harold Runnels Building, N-2150
1190 St. Francis Drive, P. O. Box 5469
Santa Fe, New Mexico 87502

Environmental Improvement Board Meeting
July 11-12, 2011
9:00 a.m.
Room 307, State Capitol Building
490 Old Santa Fe Trail
Santa Fe, New Mexico 87501

EXHIBIT
NMED-10

Members Present: Deborah Peacock, Chair
John Volkerding, Vice-Chair
Elizabeth Ryan, Secretary
Jeffrey Bryce, Member (July 11, 2011 only)
Greg Fulfer, Member
Timothy Morrow, Member (July 11, 2011 only)
James Casciano, Member (July 11, 2011 only)

Others Present: Stephen Vigil, Board Counsel
Felicia Orth, Hearing Officer and Acting Administrator
Laurie Leibowitz, OGC (July 11, 2011)
Sally Worthington, Hearing Clerk (July 12, 2011)
Cheryl Arreguin, Court Reporter
Others-See attached sign-in sheets

Item 1. **Roll Call**

Roll was called; a quorum was present.

Item 2. **How Notice Requirements Were Met**

Ms. Orth described how notice requirements were met for the meeting consistent with the Board's Open Meetings Act Resolution.

Item 3. **Approval of Agenda**

Action: Ms. Ryan moved Board approval of the agenda. Mr. Morrow seconded the motion. The motion passed unanimously.

Item 4. **Public Comment Unrelated to Agenda Items**

Item 9. **Motion to Dismiss in EIB 11-08 (R), Liquid Waste Fee Regulations; argument, discussion and deliberation. Carol Parker and Ryan Flynn, NMED/OGC; Link Summers. Stephen Vigil, NMAGO.**

Action: Ms. Parker presented NMED's position and reasons for granting the motion. Ms. Parker answered questions from the Board. Mr. Summers presented his position and answered questions from the Board. Ms. Parker responded to Mr. Summers presentation.

Mr. Fulfer moved to deny the Motion to Dismiss in EIB 11-08 (R) in its entirety. This motion was not seconded or voted on. The Board discussed the Motion to Dismiss further.

Ms. Ryan moved the Board grant the Motion to Dismiss in part regarding Subsection D referring to the penalty section and to deny all other parts of the Motion to Dismiss. Mr. Volkerding seconded the motion. The motion passed unanimously.

Ms. Orth discussed with the Board how testimony would be presented for the hearing in August, and the Board and parties agreed that a similar procedural order would be issued as in EIB 11-03.

Item 10. **Consideration of postponement of September Hearing in EIB 11-09 (R) and EIB 11-12 (R), Liquid Waste Disposal and Treatment Regulations, 20.7.3 NMAC. Chair Peacock and the Board.**

Action: The Board discussed postponement of the September hearing planned in EIB 11-09 (R) and EIB 11-12 (R) with Mr. McQuillan from the NMED, Mr. Summers, and other parties.

Ms. Ryan moved the Board postpone the hearings from September 1-3, 2011 in EIB 11-09 (R) and EIB 11-12 (R) to Spring 2012 to allow more time for the parties and the department to work together. Mr. Volkerding seconded the motion. The motion passed unanimously.

Item 11. **Request for Hearing in EIB 11-14 (R): Proposed Amendments to the Board's Rulemaking Procedures Regulations, 20.1.1 NMAC. Felicia Orth, Hearing Officer.**

Action: Ms. Orth presented reasons for and contents of proposed amendments to the Board's rulemaking procedures regulations.

Ms. Ryan moved the Board grant the request for hearing. Mr. Volkerding seconded the motion. The motion passed unanimously.

SUSANA MARTINEZ, GOVERNOR
David Martin, *Cabinet Secretary*
Butch Tongate, *Acting Deputy Secretary*

NEWS RELEASE
OCTOBER 4, 2011

EXHIBIT
NMED-11

Contact: Jim Winchester
Communications Director
New Mexico Environment Department
(505)231-8800 / jim.winchester@state.nm.us

Environment Department Seeks Input on Septic Tank Rules

Santa Fe -- The New Mexico Environment Department ("NMED") wants to make the Liquid Waste "Septic Tank" rules friendlier to homeowners and businesses. Proposed amendments to current regulations would also be less costly to administer.

Today, the department announced it will hold 18 public meetings around the state to receive input from homeowners, contractors, realtors and homebuilders on how to improve the Liquid Waste Disposal and Treatment Regulations (20.7.3 NMAC). NMED is also looking to update and amend Liquid Waste Treatment and Disposal Fees Regulations (20.7.11 NMAC).

"Governor Martinez and the New Mexico Environment Department are committed to making sure that regulations are based on good science and common sense," said NMED Secretary David Martin. "The challenge with the Liquid Waste Program is to issue permits that protect groundwater, and are not unreasonably burdensome, at 4,000 unique sites each year in a state with diverse and complex hydrogeology. We want to hear what the community has to say about how to improve our permitting process without compromising water quality."

The department wants to move from a "one-size-fits-all" permitting program to a mapping system which would identify areas with high and low hydrogeologic sensitivity. Depending on the hydrogeologic sensitivity, more or less stringent standards could be applied. Other rule amendments would pave the way for online permitting and fee payment which would save everyone time and money.

Under the proposed amendments, a voluntary certification program would provide incentives for contractors to take annual training which would increase the expertise of the workforce. As a result of the annual training, higher quality septic systems would be installed all around the state.

The Department wishes to obtain stakeholder input on these issues prior to filing a formal petition for proposed regulation amendments with the Environmental Improvement Board (EIB). Drafts of the NMED regulation amendments are posted on the Department's Liquid Waste Program website at this location http://www.nmenv.state.nm.us/fod/LiquidWaste/. We invite you to review these drafts and to submit written comments. Comments should be submitted by close of business on Friday, November 4, 2011, to Brian Schall, NMED Liquid Waste Program, 5500 San Antonio Drive NE, Albuquerque, NM 87109. Mr. Schall also may be reached at 505-222-9513 or at brian.schall@state.nm.us.

The New Mexico Environment Department will host a series of public meetings to discuss possible regulation amendments. Liquid waste system installers, inspectors, septage pumpers, homebuilders, realtors and other interested stakeholders are invited to attend and to provide their comments and suggestions on what amendments should be made.

LIST OF PUBLIC MEETINGS

- **Alamogordo** – Wednesday, October 5, 2011, 11:30 a.m. – New Mexico School for the Blind and Visually Impaired, 1900 N. White Sands Boulevard
- **Angel Fire** – Tuesday, October 25, 2011, 6:30 p.m. – Angel Fire Community Center, 15 CS Ranch Road
- **Carlsbad** – Wednesday, October 19, 2011, 11:30 a.m. – New Mexico State University Carlsbad, 1500 University Drive, Room 106
- **Clovis** – Monday, October 17, 2011, 6:30 p.m. – NMED Clovis Field Office, 100 East Manana Blvd., Unit 3
- **Espanola** – Wednesday, October 26, 2011, 6:30 p.m. – Rio Arriba County Commission Chambers, 1122 Industrial Park Road
- **Farmington** – Wednesday, October 12, 2011, 6:30 p.m. – Farmington Civic Center, 200 West Arrington Street, Meeting Room C
- **Hobbs** – Tuesday, October 18, 2011, 6:30 p.m. – New Mexico Junior College, 5317 Lovington Highway, Training Room 125
- **Las Cruces** – Wednesday, October 5, 2011, 6:30 p.m. – Public Health Building, 1170 North Solano Drive, Room 1101
- **Las Vegas** – Monday, October 24, 2011, 6:30 p.m. – Luna Community College, 366 Luna Drive, Student Services Conference Room
- **Los Lunas** – Thursday, September 29, 2011, 6:30 p.m. – Los Lunas Teacher Resource Center, Los Lunas Elementary School Campus, 801 Coronado St
- **Moriarty** – Thursday, October 20, 2011, 6:30 p.m. – Moriarty Civic Center, 202 Broadway
- **Rio Rancho** – Thursday, October 13, 2011, 6:30 p.m., Sabana Grande Recreation Center, 4110 Sabana Grande Ave.
- **Roswell** – Wednesday, October 19, 2011, 6:30 p.m. – Eastern New Mexico University-Roswell, Campus Union Building, 48 University Blvd., Room 110
- **Ruidoso** – Tuesday, October 4, 2011, 6:30 p.m. – Village of Ruidoso Council Chambers, 313 Cree Meadows Drive
- **Silver City** – Thursday, October 6, 2011, 6:30 p.m. – Silver City Annex Building, 1203 North Hudson, Suite # 2
- **Socorro** – Friday, October 7, 2011, 12:00 noon – NMED Socorro Field Office, 198 Neel Avenue

- **Taos** – Wednesday, October 26, 2011, 11:30 a.m. – Juan I. Gonzales Agricultural Center, 202 Chamisa Road
- **Tucumcari** – Monday, October 17, 2011, 1:00 p.m. – Tucumcari Convention Center, 1500 West Historic Route 66

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Possible Amendments to EIB Liquid Waste Regulations 20.7.3 NMAC

New Mexico Environment Department
Environmental Health Bureau
October 2011

How can the Liquid Waste Program be improved?

What changes to the Liquid Waste Regulations would YOU like to see?

EXHIBIT
NMED-12

Background

- The last major revision to the rules was in 2004-05.
- Governor's Small-Business Friendly Task Force adopted recommendations made by the Liquid Waste Program. http://www.edd.state.nm.us/publications/smallBusinessTaskForceReport.pdf
- Certification regulation 20.7.3.904 was amended earlier this year.

Background, contd.

- Pending petitions and other rule change info posted here: http://www.nmenv.state.nm.us/fod/LiquidWaste/index.html

Anticipated Schedule

- November 4, 2011 – deadline for receipt of public comments
- December 16, 2011 – file petition for proposed amendments with EIB
- April 2, 2012 – EIB public hearing
- July 1, 2012 – effective date of revised regulations

Possible Amendments

- Create voluntary "Installer Specialist" certification
- Map areas with greater and lesser hydrogeologic vulnerability and adjust permitting requirements appropriately
- Reduce laboratory testing for advanced treatment system effluent, allow field measurements

Installer Specialist Qualifications

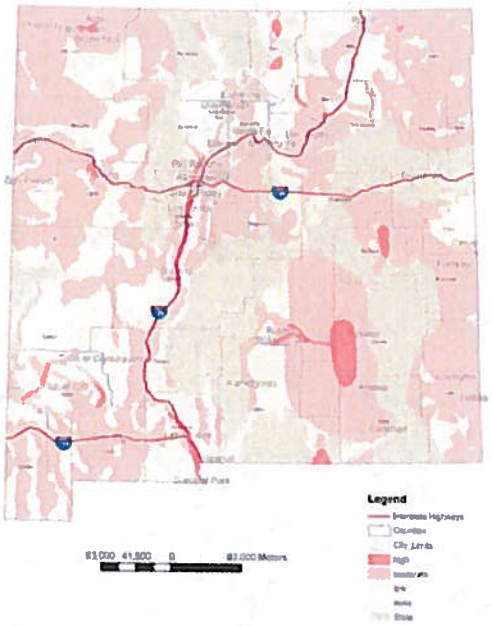
- CID license
- Installation of 150 systems, 100 in N.M.
- 3 references
- 16 credit hours of approved training
- LW regulation training and exam
- No LW Compliance Orders or criminal convictions in last 5 years

Installer Specialist Privileges

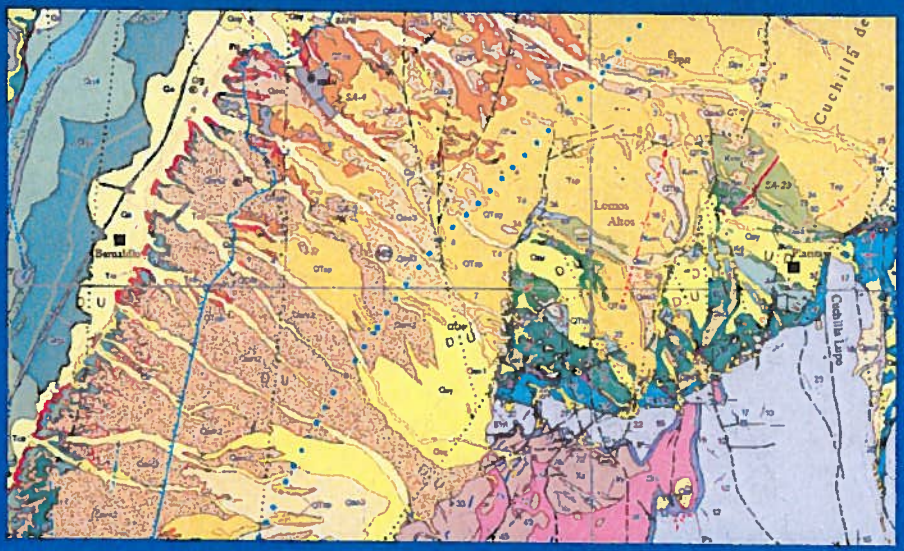
- Pre-authorized to do self-inspection.
- Must give NMED 2 working days advance notice of inspection time, but does not have to schedule inspection with NMED.
- NMED still has authority to show up at the designated time and perform inspection.

Hydrogeologic Vulnerability

Figure 1
Aquifer Sensitivity



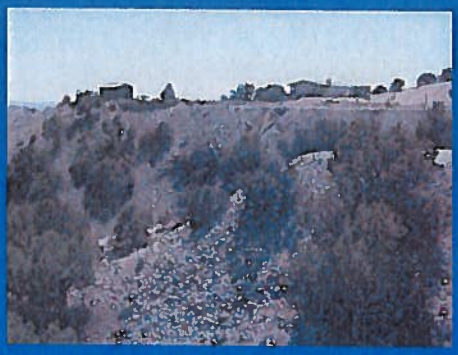
Detailed Geologic Maps



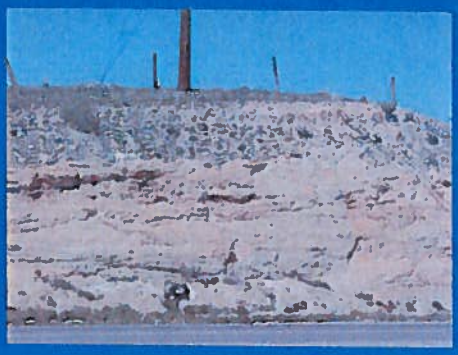
LW Regulations: One Size Does Not Fit All

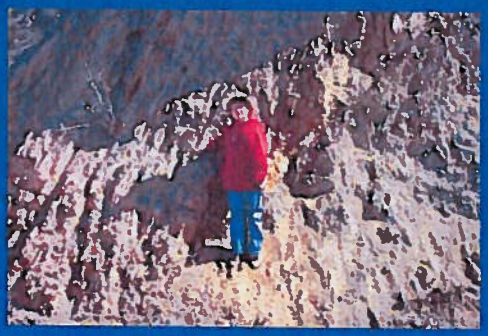
- "The gravel content on in-place soil shall not exceed 30%." (20.7.3.703.I)
- "The design flow for a conventional treatment system shall not exceed 500 gallons per day per acre." (20.7.3.301.C)

Placitas: >30% Gravel, but deep groundwater



San Juan County: >30% Gravel, but deep groundwater



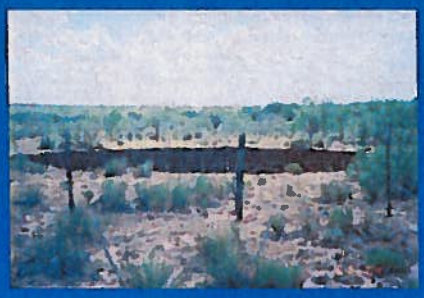


Fractured Granite

Fractured Basalt (Lava)

Fractured, Cavernous Limestone

Sinkholes



How can the Liquid Waste Program be improved?

What changes to the Liquid Waste Regulations would YOU like to see?

Possible Amendments

- Codify Single Lot Issue
- Clarify "alternative disposal"
- Define "installer", "irrigation", "orphaned advanced treatment system", "provisional systems", "qualified homeowner", "split flow", "synthetic aggregate", "water(s) of the state"
- Clarify requirements for hookup to public sewer

Possible Amendments

- Clarify pretreatment of RV waste
- Require copies of sampling contracts, if applicable
- Determination of administrative completeness
- Provisional system permitting

Possible Amendments

- Clarify septic tank certification
- Consistency with Uniform Plumbing Code
- Clarify access risers
- Clarify disposal system design; prohibit paving or covering
- Limit seepage pit width to 10 feet, require bentonite liner
- Define vaults

Possible Amendments

- Require grain size analysis for mounds and ET systems
- Codify TAC recommended guidelines for low pressure disposal systems
- Allow holding tanks for RV dump stations
- Clarify property transfer inspections (good for 180 days), require registration if unpermitted

Possible Amendments

- Clarify maintenance service provider requirements
- Define equitable owner versus legal owner
- Condos with liquid waste systems

How can the Liquid Waste Program be improved?

What changes to the Liquid Waste Regulations would YOU like to see?

Contact Info

- Liquid Waste Program web site: http://www.nmenv.state.nm.us/fod/LiquidWaste/index.html
- Toll Free 1-877-654-8720, ask to be transferred to the Liquid Waste Program
- Dennis McQuillan, Program Manager, 505-476-3236
- Brian Schall, Program Specialist, 505-222-9513
- Tom Brandt, Program Engineer, 505-476-3228

EXHIBIT
NMED-13

Liquid Waste Program
2011 Stakeholder Outreach Initiative
Summary of, and Responses to, Stakeholder Recommendations
December 12, 2011

The New Mexico Environment Department (NMED), Liquid Waste Program initiated an outreach effort to obtain stakeholder recommendations on how to improve the program. The department distributed public notices on its website and by paper copy at each Field Office, and issued a statewide news release announcing public meetings and the opportunity to submit written comments. Notices also were sent to stakeholder organizations for distribution to their members. A total of 20 public meetings were held in Alamogordo, Angel Fire, Carlsbad, Clayton, Clovis, Espanola, Farmington, Hobbs, Las Cruces, Las Vegas, Los Lunas, Moriarty, Rio Rancho, Roswell, Ruidoso, Silver City, Santa Fe, Socorro, Taos, and Tucumcari. Meeting attendance, excluding NMED staff, ranged from zero in Las Vegas and Tucumcari, to approximately 40 in Farmington. Attendees included homeowners, contractors, realtors and local government officials, including several elected officials. Additionally, written comments were received from 11 individuals, 4 organizations, and several NMED staff members.

This document summarizes the recommendations that were received from stakeholders. In the following discussion, the Liquid Waste Regulations, 20.7.3 NMAC, will be referenced only by section and subsection (eg. 904 or 201.L).

NMED's comments, on issues where the department has developed a position, are provided in **green font**. These comments are offered for the purpose of continuing discussion with stakeholders, and do not necessarily reflect what will eventually be incorporated into NMED's petition for regulation amendments.

General Suggestions

- A number of stakeholders felt that some requirements in the Liquid Waste Program are overly prescriptive and overly burdensome. The Single Lot Policy, and the requirement that existing systems meet the requirements that were in effect at the time of initial installation, were provided as examples of regulations that impose unreasonable economic hardships on owners of liquid waste systems. **NMED agrees.**
- There was strong support for NMED's proposal of moving from the historical one-size-fits-all set of regulations, to regulations that are more specific to the hydrogeologic conditions of specific areas. **NMED is going to proceed with its proposal.**

Scope – There was mixed reaction to the idea of raising the 2,000 gpd limit in the scope of the regulations to 5,000 gpd. While the majority of comments supported the idea, some felt that discharges of this magnitude should remain under the authority of WQCC regulations. Some suggested that, if the limit is raised, advanced treatment should be required for discharges greater than 2,000 gpd, and that NMED staff should receive

additional training on advanced treatment. Additionally, the question of whether designing a greater than 2,000 gpd system is within the practice of engineering was raised. The Groundwater Quality Bureau noted that some of the permitted facilities in this discharge range have contaminated groundwater in excess of standards, and that transfer of these facilities to the Liquid Waste Program would remove these facilities from the authority of the WQCC abatement regulations. **NMED is not going to propose to increase the scope of the regulations to 5,000 gpd at this time.**

Single Lot Policy – There is substantial dissatisfaction with this policy. The public has provided examples of how the application of this policy does not serve its original purpose of protecting groundwater from one or more large, but less than 2,000 gpd, systems located in close proximity to each other. Re-platting lots to accommodate the policy was identified as a book-keeping exercise that does not change the physical characteristics of the wastewater discharge, or of the site, and provides no additional groundwater protection. **NMED agrees, and is drafting a revised Single Lot Policy with the Groundwater Bureau.**

Definition of "approved" – A number of Liquid Waste Permits were given approval for construction, but were never granted final approval for operation. These systems typically were not inspected by NMED either because department inspectors were unavailable at the time of completion, or because the installer failed to call for an inspection. The draft amendment to the definition of "approved" would have the effect of invalidating permits for a large number of existing systems. **NMED does not believe it is fair to the owners of these systems, many of whom did not own the system at the time of construction, to invalidate the permits years after installation. NMED is drafting a procedure for granting operational approval for existing systems in this category.**

Definition of "irrigation" – An installer noted that the proposed definition may conflict with provisions in the Uniform Plumbing Code. **(NMED is looking into this issue.)**

Hydrogeologic Vulnerability Mapping – This proposed regulation was generally well received. Many stakeholders agreed with NMED's position that the less than 30% gravel requirement (703.I) and lot size requirements (301) should be adjusted to reflect hydrogeologic sensitivity in some areas of the state.

- It was suggested that the area west of Alamogordo, where groundwater TDS naturally exceeds 10,000 mg/L, should be immediately exempted from the lot size requirements. **NMED agrees.**
- It was suggested that areas on the mountain slopes in Angel Fire, with clay soil and/or deep groundwater, should be immediately exempted from the lot size requirements. **NMED agrees.**
- There seemed to be general consensus that, if the minimum lot size is lowered in areas with low groundwater vulnerability, it should not be set smaller than ½ acre. **NMED agrees.** Concerns were raised, however, that ½ acre lots may not have enough suitable area to designate for the 50% drainfield replacement area

required by 201.H. Please see the comment regarding regulation 201.H in the Drainfield Issues section below.

- One member of the public suggested that the proposed depth to groundwater requirement of 400 to 600 feet be replaced with language requiring 100 feet of vadose zone (which would mean a 100 foot depth to groundwater). **NMED disagrees. A depth to groundwater of 100 feet is well within the range that ½ acre lots have caused widespread groundwater contamination.**

Qualification Requirements

- Homeowner Installations – Several people recommended that homeowner installations be outlawed, while others suggested that the qualification requirements for homeowners be raised. **The qualifications for homeowner installation were just raised by the EIB in amendments to 904 that became effective on November 21, 2011.**
- Installer Specialist – This proposed regulation is being well received by many contractors who would like to see it implemented. Concerns have been raised, however, that the privilege of self inspections could be abused since the installer and inspector would be the same entity. One contractor alleged that approximately 95% of the systems being installed today do not comply with the regulation and that the contracting industry lacks sufficient training and honesty to allow them to perform self inspections. **NMED is unaware of any data to support the assertion that 95% of systems now being installed do not comply with the regulations. While there would be potential for abuse, NMED believes that the Installer Specialist provision, if implemented, would result in a net increase in compliance.**
- Factory Certification for MSPs – Concerns were expressed that regulation 903.B, requiring that maintenance service providers be factory certified, restricts free-market competition and enables monopolies and price gouging. An analogy was made to motor vehicle laws that require automobile owners to maintain their vehicles in safe working condition, but do not require that maintenance be provided only by factory certified mechanics. It was recommended that the requirement for factory certification of MSP's be repealed. **NMED agrees. It should be noted that NSF requires that two years of service be included in the purchase price for advanced treatment systems. NMED is investigating whether MSPs may have been charging clients for service calls that were already paid for in the purchase price.**
- Generic MSP – Several stakeholders suggested that qualifications for a generic maintenance service provider be established. **NMED agrees.**
- Inspector Qualifications – One homeowner felt that, due to potential conflicts of interest, only certified government employees should be authorized to perform inspections. **In an ideal world, this idea might be practical. NMED, however, does not have sufficient funding and staff to assume the responsibility for all inspections.**
- Approved Training - One installer commented that the list of educational curricula currently approved by NMED should not be allowed for qualification as

an Installer Specialist on the basis that the training is not specific enough to installing. **NMED disagrees. Much of the approved training is relevant to site evaluation, design and installation.** This installer also pointed out that NMED had taken the position that the former Education Steering Committee was illegal, and raised questions as to the legality of NMED's approval of educational curricula that had been recommended by the Committee. **NMED disagrees. The legality of the Education Steering Committee had no bearing on the quality and usefulness of the curricula that were reviewed by the Committee, which served only to make recommendations, and on the approval of the curricula by the NMED Secretary.**

Property Transfer Inspections

- There is strong support from the industry to allow properly qualified third parties to inspect unpermitted systems. **NMED agrees, and will propose amendments where third parties would be allowed to inspect unpermitted systems.**
- Banks are not being required to do property transfer inspections on foreclosure sales, and this is not fair to other sellers who are required to do the inspections. **NMED agrees, but this is an enforcement issue that does not require amendments to the regulations.**
- It was suggested that real estate contracts also should be subject to property transfer inspections at the time the contract is signed. **NMED agrees, and is drafting language to clarify this inspection requirement.**
- Several realtors commented that the cost of pumping and inspection was exorbitant and burdensome for property sellers, especially in the current economic climate. It was suggested that property transfer inspections be valid for a longer period of time, ranging from 1 to 5 years, if the system has not been modified. **NMED believes that 5 years is too long of a time to provide the intended buyer beware protection of the regulation.**
- One installer suggested that only licensed contractors with NAWT training be allowed to perform property transfer inspections. **The qualifications for third party inspectors were just amended by the EIB in amendments to 904 that became effective on November 21, 2011.**
- One installer recommended that maintenance service providers for advanced treatment systems be notified in advance of property transfer inspections by other parties to prevent accidental damage to the systems. **NMED agrees.**

Existing Liquid Waste Systems – Regulations 201.L and 401.J.1 require that existing liquid waste systems meet the requirements that were in effect at the time of initial installation. Consequently, a number of properly functioning systems have had to be replaced due to non-conformance with whatever prescriptive regulations were in effect at the time of initial installation. These situations typically occur during property transfers, and the person selling the home, who is now saddled with the cost of replacing a properly functioning system, is quite often not the original owner who had the non-compliant system installed. It was recommended that such systems not have to be replaced if they

are, in fact, functioning properly and are not too close to water wells or water bodies. **NMED agrees, and will propose to amend the requirements for existing systems.**

Tanks

- Plastic Tanks – Several installers suggested that plastic tanks be outlawed, or that more stringent requirements be imposed on the installation and pumping of plastic tanks. **NMED disagrees. Plastic tanks are suitable when properly installed, and some of the newer plastic tanks are considerably stronger than older models.**
- Concrete Strength – One installer suggested that the strength be increased to 4500 psi. **NMED is looking into this recommendation.**
- Vents – One installer suggested that vents be required in septic tanks to control the accumulation of gasses that can damage concrete. **NMED disagrees. Properly constructed septic tanks should vent to the atmosphere thru the building sewer system. Additionally, the vents could create odor issues and other problems in the backyards of homeowners.**
- Tank Inlets – Two installers suggested that inlets be required to be watertight, such as by requiring flexible boots as are now placed on the outlet side. **NMED agrees.**
- Effluent Filters – One installer suggested that all filters have handles extended to within 6" of the top of the access riser. **NMED agrees.**
- Access Risers – Two installers suggested that five gallon buckets, trash cans, rain barrels, metal drums, dry staked cinder blocks, and single walled pipe not be allowed to be used as access risers. **NMED agrees.**
- Cesspools – One member of the public felt that cesspools should still be allowed if caliche or another low permeability layer existed between the bottom of the cesspool and groundwater. **NMED disagrees on the basis that groundwater pollution is not the only potential hazard to public health and safety that cesspools pose. Cesspools can create hazards of entrapment, asphyxiation and drowning, and these hazards can increase as cesspools age and deteriorate. Additionally, cesspools allow untreated human waste to directly enter the soil, as opposed to the effluent that has undergone primary treatment as provided by a properly functioning septic system.**
- Holding Tanks – It was pointed out that the existing language of 809.A, 809.B and 809.O conflict with each other. Rule 809.A contains a residential-only provision, while the other rules mention commercial holding tanks. **NMED agrees.**

Drainfield Issues

- Tire Chips – One installer reports that tire chips used as drainfield aggregate have floated up to the surface and that children have suffered puncture injuries from the steel threads. Consequently, he no longer installs tire-chip drainfields. **NMED has asked the installer to provide documentation of the flotation incidents,**

including what kind of fabric or other cover was placed on top of the tire chips in the drain field.

- Six-Foot Maximum Trench Depth – The scientific justification for the maximum trench depth of 6 feet in the existing regulation was questioned, especially if groundwater is deep. This requirement was identified as a one-size-fits-all rule that is not appropriate for the entire state. **NMED agrees, and is developing an amended rule.**
- Low-Pressure Dosed Systems – Two installers recommended that section 808 be re-written. **NMED agrees, and is working with stakeholders to amend 808.**
- Drainfield Sizing – One installer recommended that the 30% reduction for proprietary products be eliminated, and that 703.1 application rates be increased from 2.0 to 2.25 sqft/gal.day and 5.0 to 5.7 sqft/gal.day. An NMED inspector recommended that sizing requirements for clay soils were too cost prohibitive and should be reduced. **The 30% reduction rule and application rates were adopted as regulations after extensive review and discussions with experts. Any amendments to these regulations should have a solid scientific basis.**
- Replacement Area Requirement – The enforceability of the requirement for a 50% drainfield replacement area (201.H) was questioned. Many homeowners are unaware of such designated areas, and there is no practical way to prevent local officials from issuing building permits for the designated area. It was suggested that a drainfield replacement area is a good idea, but should not be a permitting requirement. **NMED agrees, and will propose to delete this requirement.**
- Flood Irrigation Setback Requirements – Two installers commented that, while installing drainfields outside of irrigated areas is preferable, there is sometimes no other place to install the drainfield at some sites. Both installers believed that provisions should be written into the regulations whereby drainfields can be installed in irrigated areas, with protection from percolating irrigation water, when necessary. **NMED does not understand why the existing variance option is not practical for these rare situations.**
- Drainfields Under Paved or Covered Areas – Similar to the issue of drainfields in irrigated areas, one installer pointed out that drainfields sometimes have to be installed under parking lots or other paved or covered areas. It was suggested that the regulations allow this with an increase in size to compensate for the lack of expected evapotranspiration. **NMED does not understand why the existing variance option is not practical for these rare situations. Additionally, the prohibition against constructing drainfields under paved areas is contained in the Uniform Plumbing Code (UPC), and this could create problems for licensed contractors who must comply with UPC.**

Advanced Treatment

- Cost of Advanced Treatment Technology – Several stakeholders identified the need for more affordable technology for advanced wastewater treatment. **NMED agrees, but is unable to control free-market prices or to develop and market technology of its own.**

- RV Waste – There is support for exempting homeowners, who have a single RV for occasional use, from the pre-treatment requirements. **NMED agrees, and will propose such an exemption.** An RV park owner requested that NMED administer the requirement for pre-treatment of this high-strength waste consistently, and that the department issue guidance on what options are available to small RV park owners to provide pre-treatment. **NMED agrees, and is developing such guidance.**
- High-Strength Waste – Several stakeholders identified the need to address high-strength waste. One installer suggested that liquid waste systems treat fast-food waste to less than 100 mg/L BOD and less than 15 mg/L oil and grease prior to discharge to the soil treatment unit. **NMED agrees that treatment requirements for high-strength waste need to be clarified, and will ask the WTAC to put this issue on their agenda for a future meeting.**

Split-Flow (Segregated-Waste) Systems –

- One installer provided a technical paper written by Dr. Robert L. Siegrist in 1977 that specifically discussed the suitability of using of use of evapotranspiration (ET) systems to dispose of segregated toilet waste that has undergone sedimentation. The installer proposed amendments to 814 to allow the use of ET systems to dispose of toilet waste in split-flow systems. **NMED agrees, and will incorporate the suggested amendments into its revised petition.**
- Another installer questioned the proposed language that did not require primary treatment of gray water prior to subsurface discharge. **The gray-water statute 74-6-4.L NMSA, and regulation 810, allow gray water to be discharged directly into soil without any treatment. The imposition of treatment requirements for these gray water discharges would need to have a solid scientific basis, and would require amendment of the statute as wells as the regulations. Regulation 811, however, for gray water flows larger than 250 gpd, does require "a treatment unit".**

Composting Toilets – One member of the public would like to see the rules regarding composting toilets relaxed to encourage greater use of this technology. **NMED agrees, and has already proposed such amendments in its April 2011 petition.**

Grease Traps – One installer suggested that grease traps be inspected by NMED, and that standards and design requirements be established.

Design Flow

- There is unanimous agreement that existing definition of "bedroom" which is used to calculate design flow is ambiguous and needs to be clarified. **NMED agrees, and will propose clarifying language.**
- One installer recommended that design flow assumptions not be amended to avoid further inconsistency with the Uniform Plumbing Code and to avoid organic overloading of drainfields. **This is a topic that should be discussed**

further. The current wastewater design flow assumptions specified in the regulations are believed to be larger than what typical households actually discharge. This is due to the installation of water conserving appliances and fixtures and due to water conservation practices.

- One member of the public suggested that design flow be based on actual residential water usage, rather than on the number of bedrooms in the house. **NMED disagrees. Occupancy and actual residential water usage can change over time. Using bedrooms to calculate design flow, while not a perfect method, is the only practical way to issue permits.**

Animal Waste – It was suggested that kennel, veterinary and other animal waste should not be excluded from liquid waste systems, but that design flow for animal waste facilities need to be reviewed. **NMED agrees.**

"Completely Dimensioned" Site Plans – One installer would like to see this requirement clarified to be clear that survey-accurate plans are not required. **NMED believes the existing language is clear, and does not require survey-accurate site plans unless needed for a specific setback issue.**

100-Foot Setback from Drainfield to Private Domestic Well – One installer has suggested that this setback be reduced since some other states require less than 100 feet. **NMED disagrees, and is unaware of any scientific justification for replacing the existing one-size-fits-all rule with another one-size-fits-all rule.**

Permit Review Deadline – One installer has suggested that the deadline for NMED action on a conventional permit application be reduced from 10 working days to 5 working days. **NMED field staff endeavor to act on permits as soon as possible, typically well within the 10 working-day deadline. Given the hiring freeze and current vacancy rates, however, NMED does not support reducing the regulatory deadline from 10 to 5 days.**

Enforcement

- The industry wants to see more enforcement by CID and NMED against unlicensed contractors, and against licensed contractors who violate the Liquid Waste Regulations. Specific concern was expressed that persons who have the NAWT inspector certification, but who do not hold a valid and appropriate CID license, are performing unlicensed construction and repair work. **NMED agrees.**
- Increased enforcement was requested to control the proliferation of illegal unpermitted systems being installed by homeowners and persons renting lots for RV's and mobile homes. **NMED agrees.**
- One installer suggested that Notices of Violation (NOV) be appealable. **NMED disagrees. A NOV is a warning that has no legal status. Creating an appeal mechanism would be costly and unnecessary.**

Connections to Public Sewer – One installer suggested language that would make 201.E consistent with the Uniform Plumbing Code regarding when connections to public sewer are required. The clarifying language would allow homeowners to keep using their septic systems in some cases. **The EIB cannot promulgate regulations that will override ordinances adopted by local sewer authorities.**

Wastewater Technical Advisory Committee (WTAC) – One installer suggested that technical people should be appointed to the WTAC. **The WTAC membership is prescribed by statute, and the existing language is not clear with regard to expertise in the field of small onsite wastewater systems versus larger centralized wastewater systems.**

Public Funding for Wastewater Infrastructure

- Public funding has long been made available through grants and loans, pursuant to the federal Clean Water Act, for example, to improve public wastewater infrastructure. Persons who live in houses served by onsite wastewater systems pay taxes, but get no government benefits in the way of improvements to wastewater infrastructure. It was suggested that the government establish a program to provide taxpayer-funded assistance to households that use onsite wastewater systems. **This is an issue that has been recognized by both homeowners who utilize onsite wastewater systems, and by the onsite wastewater industry, throughout the United States for many years. Changing the paradigm of public funding for wastewater infrastructure will require legislation at both the national and state levels. This suggestion will be forwarded to the NMED Construction Programs Bureau.**
- It was also suggested that incentives be made available for the extension of public sewerage service into areas served by septic systems when the public wastewater treatment plants have unused capacity. **This suggestion will be forwarded to the NMED Construction Programs Bureau.**

NMED Exhibit 14
Proposed Amendments to Liquid Waste Regulations
Not Contained in Petition EIB 12-01(R)

7.I(8)
The reference to "food plants" should be deleted from this new definition and should read (8) "irrigation means the use of wastewater effluent to water landscaped areas or fruit and nut trees." The reason for this change is that irrigation of food plants other than fruit and nut trees is prohibited by 809.N.

201.I
With regard to effluent monitoring of systems treating RV waste, the language in the petition should be amended to read, "Monitoring of the effluent may be required in accordance with 20.7.3.901 NMAC." The reason for this change is that effluent monitoring data in the State of New Mexico demonstrate that not all RV waste requires advanced treatment.

201.O(3)
There is a typo in the petition. This section should read, "Wastewater flows for residential and nonresidential sources also may be based on:"

302.A(4)
The proposed language in the petition for this footnote to Table 302.1 should be further amended to read, "**** Plus 2 feet for each additional foot of depth below point of discharge." The reason for this change is that the provision of existing regulation 20.7.3.703.J, that excludes the bottom six inches of trench sidewall from absorption area credit, is proposed to be deleted.

502.D
The proposed language to increase riser diameter from 30 inches to 36 inches for depths greater than 3 feet appears to have resulted from a miscommunication and is withdrawn from Petition EIB 12-01(R).

603
After further consideration and discussion, Section 20.7.3.603 is proposed to be revised from the amended petition to read as follows:

A. Tertiary treatment systems shall provide [~~nutrient~~]total nitrogen (TN) removal in addition to secondary treatment.

B. For lots that exceed the allowable hydraulic loading pursuant to Subsection C of 20.7.3.301 NMAC, a department approved tertiary treatment unit may be installed. The treatment unit must be capable of removing TN to a concentration equal to or less than the concentration limit calculated pursuant to 20.7.3.603.C NMAC.

C. Utilizing the standard loading equation, (flow (gpd) X conc. (mg/l) X 8.34 lbs./gal. X 365 days/yr)/ 1,000,000 = lbs./yr/ac., and assuming an average of 60 mg/l of TN in the septic tank effluent and a maximum flow of 500 gpd/ac, the following simplified equation shall be used for determining the required TN concentration limit allowed for a specific lot size: total nitrogen concentration (in mg/l) = [lot size (in acres) / design flow (in gpd)] x 30,000. ~~The concentration limit shall be based on a 6-sample rolling average with no single sample exceeding twice the concentration limit.~~

D. [~~Tertiary treatment systems and the disposal from tertiary treatment systems shall meet the specific site conditions set forth in 20.7.3.605 NMAC.~~]

The treatment unit shall be operated in accordance with manufacturer's specifications and department approval conditions.

E. TN effluent testing, when required pursuant to 20.7.3.901.C NMAC, shall meet the concentration limit calculated pursuant to 20.7.3.603.C NMAC as approved by the department. The concentration limit shall be based on a 6-sample rolling average with no single sample exceeding twice the concentration limit.

605.E

The proposed amendment needs to be clarified that this section refers to the setback between the drainfield and the water well. "The following treatment levels are required for a reduction in the drainfield setback distance to a drinking water well:"

605.H

The existing language needs to be clarified to read, "If the existing level of nitrate-N in the groundwater exceeds 5 mg/L, ..." This is needed to make clear that the 5 mg/L concentration applies to nitrate measured as nitrogen, rather than to nitrate measured as nitrate.

901

After further consideration and discussion, Section 20.7.3.901 is proposed to be revised from the amended petition as follows:

Subsection 901.B(2) is proposed to be modified from the amended petition to read as follows:

> "Parameters should be measured at locations within the treatment unit that will demonstrate the effectiveness of treatment."

Subsection 901.C is proposed to be modified from the amended petition to read as follows, while keeping subsections 1-4 the same as proposed:

> "Effluent sampling shall be required for on-site liquid waste systems that do not conform to manufacturer guidelines for field parameters pursuant to 20.7.3.901.B NMAC, for systems

where the manufacturer has not established guidelines for field parameters, or for systems that the department has determined are not operating properly. Sampling shall be conducted annually, or as otherwise required by the department."

EXHIBIT
NMED-15

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 2 GROUND AND SURFACE WATER PROTECTION

20.6.2.1 ISSUING AGENCY: Water Quality Control Commission
[12-1-95; 20.6.2.1 NMAC - Rn, 20 NMAC 6.2.I.1000, 1-15-01]

20.6.2.2 SCOPE: All persons subject to the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.
[12-1-95; 20.6.2.2 NMAC - Rn, 20 NMAC 6.2.I.1001, 1-15-01]

20.6.2.3 STATUTORY AUTHORITY: Standards and Regulations are adopted by the commission under the authority of the Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17.
[2-18-77, 9-20-82, 12-1-95; 20.6.2.3 NMAC - Rn, 20 NMAC 6.2.I.1002, 1-15-01]

20.6.2.4 DURATION: Permanent.
[12-1-95; 20.6.2.4 NMAC - Rn, 20 NMAC 6.2.I.1003, 1-15-01]

20.6.2.5 EFFECTIVE DATE: December 1, 1995 unless a later date is cited at the end of a section.
[12-1-95, 11-15-96; 20.6.2.5 NMAC - Rn, 20 NMAC 6.2.I.1004, 1-15-01; A, 1-15-01]

20.6.2.6 OBJECTIVE: The objective of this Part is to implement the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.
[12-1-95; 20.6.2.6 NMAC - Rn, 20 NMAC 6.2.I.1005, 1-15-01]

20.6.2.7 DEFINITIONS: Terms defined in the Water Quality Act, but not defined in this part, will have the meaning given in the act. As used in this part:

A. **"abandoned well"** means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be rehabilitated for its intended purpose or other purposes including monitoring and observation;

B. **"abate" or "abatement"** means the investigation, containment, removal or other mitigation of water pollution;

C. **"abatement plan"** means a description of any operational, monitoring, contingency and closure requirements and conditions for the prevention, investigation and abatement of water pollution, and includes Stage 1, Stage 2, or Stage 1 and 2 of the abatement plan, as approved by the secretary;

D. **"adjacent properties"** means properties that are contiguous to the discharge site or property that would be contiguous to the discharge site but for being separated by a public or private right of way, including roads and highways.

E. **"background"** means, for purposes of ground-water abatement plans only and for no other purposes in this part or any other regulations including but not limited to surface-water standards, the amount of ground-water contaminants naturally occurring from undisturbed geologic sources or water contaminants which the responsible person establishes are occurring from a source other than the responsible person's facility; this definition shall not prevent the secretary from requiring abatement of commingled plumes of pollution, shall not prevent responsible persons from seeking contribution or other legal or equitable relief from other persons, and shall not preclude the secretary from exercising enforcement authority under any applicable statute, regulation or common law;

F. **"casing"** means pipe or tubing of appropriate material, diameter and weight used to support the sides of a well hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent fluid from entering or leaving the well other than to or from the injection zone;

G. **"cementing"** means the operation whereby a cementing slurry is pumped into a drilled hole and/or forced behind the casing;

H. **"cesspool"** means a **"drywell"** that receives untreated domestic liquid waste containing human excreta, and which sometimes has an open bottom and/or perforated sides; a large capacity cesspool means a cesspool that receives greater than 2,000 gallons per day of untreated domestic liquid waste;

I. **"collapse"** means the structural failure of overlying materials caused by removal of underlying materials;

J. **"commission"** means:

(30) 1,1,2,2-tetrachloroethane.....0.01 mg/l
(31) vinyl chloride.....0.001 mg/l
(32) PAHs: total naphthalene plus monomethylnaphthalenes.....0.03 mg/l
(33) benzo-a-pyrene.....0.0007 mg/l

B. Other Standards for Domestic Water Supply

(1) Chloride (Cl) .....250.0 mg/l
(2) Copper (Cu) .....1.0 mg/l
(3) Iron (Fe) .....1.0 mg/l
(4) Manganese (Mn) .....0.2 mg/l
(6) Phenols.....0.005 mg/l
(7) Sulfate (SO_4) .....600.0 mg/l
(8) Total Dissolved Solids (TDS) .....1000.0 mg/l
(9) Zinc (Zn) .....10.0 mg/l
(10) pH.....between 6 and 9

C. Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1) Aluminum (Al)..... .....5.0 mg/l
(2) Boron (B) .....0.75 mg/l
(3) Cobalt (Co) .....0.05 mg/l
(4) Molybdenum (Mo) .....1.0 mg/l
(5) Nickel (Ni) .....0.2 mg/l

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-04]

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly of indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20.6.2.3111 NMAC, regarding transfers. [2-18-77, 12-24-87, 12-1-95; Rn & A, 20.6.2.3104 NMAC - 20 NMAC 6.2.III.3104, 1-15-01; A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20.6.2.3104 and 20.6.2.3106 NMAC do not apply to the following:

A. Effluent or leachate which conforms to all the listed numerical standards of Section 20.6.2.3103 NMAC and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day;

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section;

Annual Workshop Abstract

VULNERABILITY FACTORS FOR GROUNDWATER CONTAMINATION FROM ONSITE WASTEWATER SYSTEMS

[1]Dennis M McQuillan and [2]James Vincent

[1] N.M. Environment Department, 1190 St. Francis Drive, Harold Runnels Building, Suite S-2100, Santa Fe, NM, 87505, dennis.mcquillan@state.nm.us
[2] N.M. Environment Department, 2540 Camino Edward Ortiz, Santa Fe, NM, 87507,

Onsite wastewater systems provide treatment and decrease contaminant concentrations, but do not produce drinking-water quality effluent. Natural attenuation mechanisms, therefore, must be able to decrease contaminants to acceptable concentrations as the effluent migrates from the drainfield, through soil, and into groundwater to the nearest down-gradient water-supply well. Natural attenuation mechanisms that may occur in soil or groundwater include dispersion, diffusion, mechanical filtration, microbe death, cation exchange, adsorption, biodegradation, denitrification and volatilization. A proper site evaluation is critical to designing an onsite wastewater system that, through a combination of treatment and natural attenuation, will not adversely affect drinking water wells. Onsite wastewater systems that are not properly sited, designed, constructed, operated and maintained have contaminated water wells with nitrate, chloride, total dissolved solids, anaerobic respiration byproducts and with pathogenic microbes.

Lot size, depth to groundwater, lithology, and redox conditions can influence the effectiveness of natural attenuation. Lot size has no influence on the groundwater quality impact from a single wastewater system, but can strongly influence the cumulative impact of multiple systems in an area. Increasing depth to groundwater can increase the migration distance and travel time of effluent percolating in the soil, thereby increasing the potential for natural attenuation and decreasing aquifer vulnerability. Lithologic heterogeneities, such as a gravel layer or other capillary barrier inter-bedded with finer-grained sediments, also can increase migration distance, travel time and the potential for natural attenuation. Fractured rock typically provides less opportunity for natural attenuation than do sedimentary deposits with inter-granular porosity. Redox conditions can control the occurrence and transformation of nitrogen compounds.

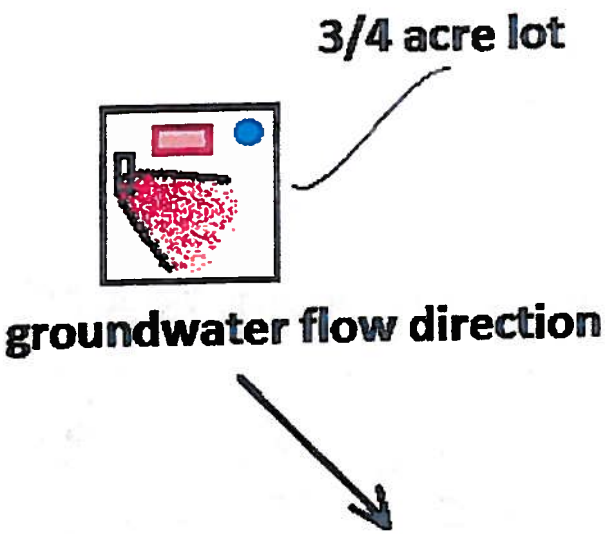
Field studies in basin-fill areas utilizing onsite septic systems and domestic wells demonstrate that increasing lot size and depth to groundwater generally decrease the potential for water well contamination. Water wells in Rancho San Marcos, with a minimum lot size of 10 acres and groundwater depths of approximately 175 to 250 feet, show little if any influence from onsite septic systems. In Eldorado, with an average lot size of about 1 acre, significant greenbelt acreage, and groundwater depths in the range of 100 to 200 feet, nitrate-N has been detected above the drinking-water standard of 10 mg/L in only one well, and most nitrate-N levels are less than 5 mg/L. Hernandez, with many small lots ½ acre or less, and groundwater depths of about 50 to 100 feet, onsite wastewater systems polluted at least 76 private domestic water wells with nitrate-N greater than 10 mg/L. Public water was extended into Hernandez to eliminate the widespread health hazard from nitrate pollution.

In some fractured bedrock areas, onsite wastewater systems have polluted drinking water wells with nitrate, chloride, total dissolved solids and E. Coli even though all regulatory requirements for lot size, set back, clearance and suitable soil were met.

Requested Format: *oral presentation*

EXHIBIT
NMED-16

Onsite Wastewater Loading
Example 1



3 BR home on 3/4 acre lot with water well and septic system.

Water well is protected by setback and natural attenuation.

- water well
- 3 bedroom home
- septic system
- groundwater impact zone from 375 gpd septic system

EXHIBIT
NMED-17

Onsite Wastewater Loading
Example 2

groundwater flow direction

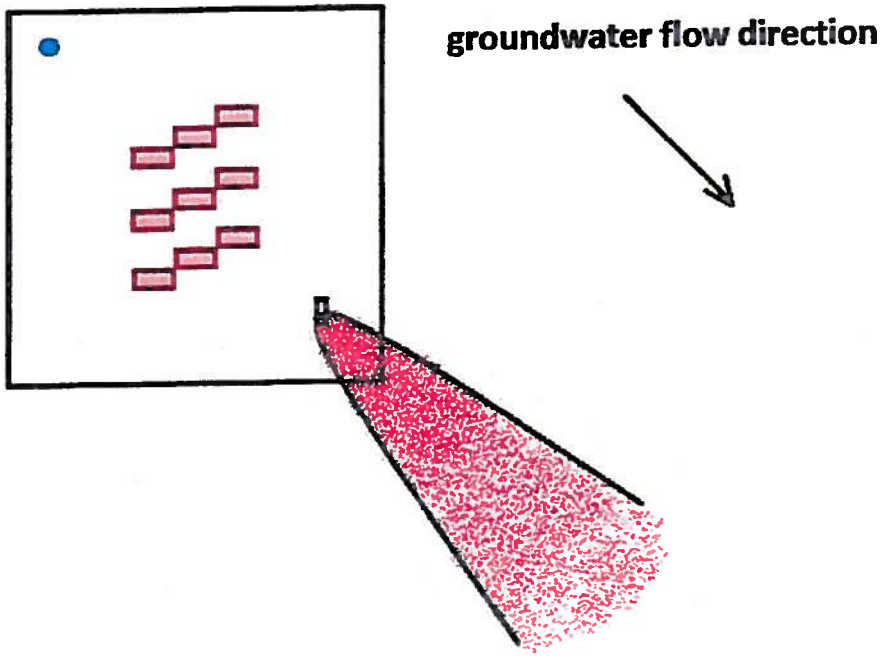
Nine 3 BR homes, each on 3/4 acre with water wells and septic systems.

Wastewater is dispersed across a total of 6.75 acres.

Water wells are protected from neighboring septic systems by natural attenuation.

- water well
- 3 bedroom home
- septic system
- groundwater impact zone from 375 gpd septic system

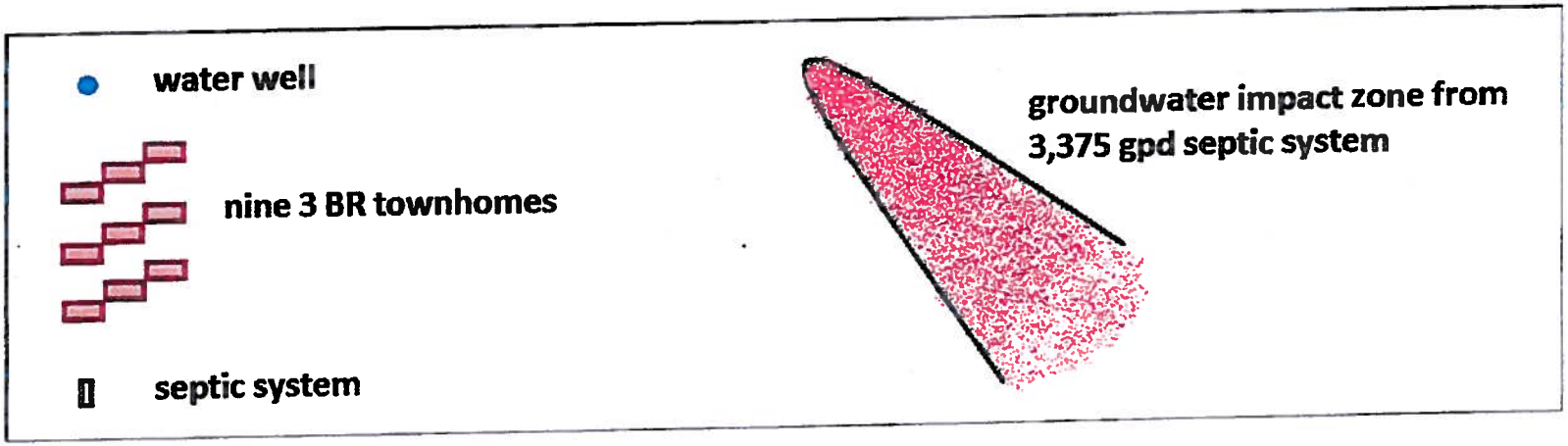
Onsite Wastewater Loading
Example 3



Nine 3 BR townhomes on 6.75 acres.

3,375 gpd septic system serves all 9 homes.

Water well protected by siting.



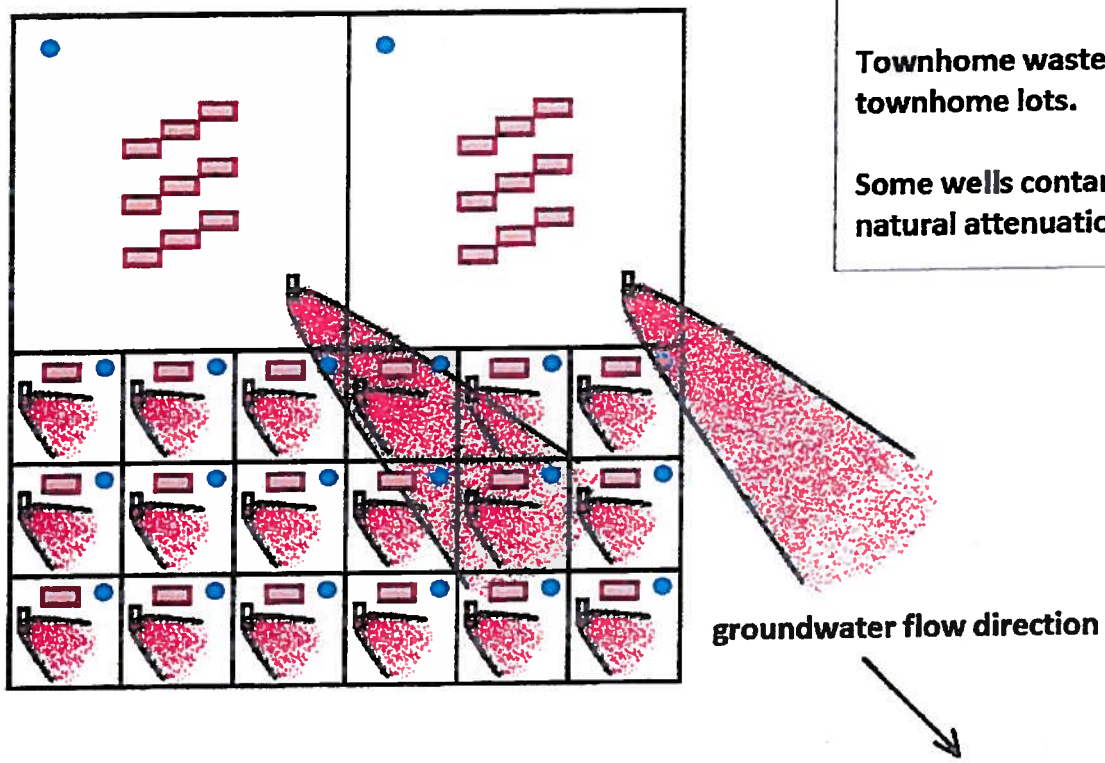
Onsite Wastewater Loading

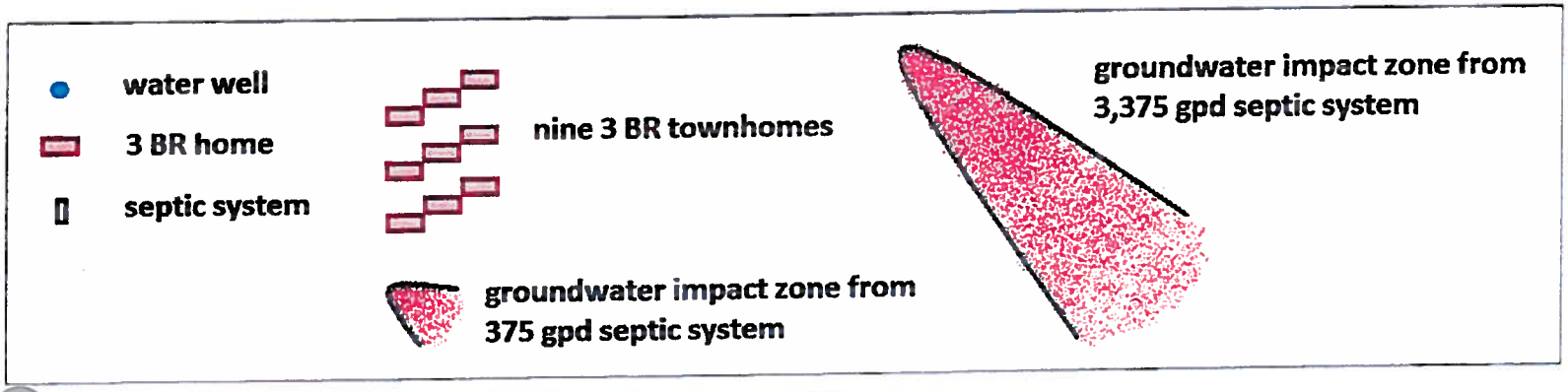
Example 4

18 homes each on 3/4 acre lots, 18 townhomes on two 6.75 acre lots.

Townhome wastewater not dispersed across townhome lots.

Some wells contaminated by due to inadequate natural attenuation of townhome wastewater.





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DEC 2 4 2003

December 15, 2003

Mr. Jerry Schoeppner, Chief
Ground Water Quality Bureau
Environment Department
Harold Runnels Building
P.O. Box 26110
Santa Fe, NM 87502-6110

EXHIBIT
NMED-18

Dear Mr. Schoeppner:

This is in response to your letter of October 30, 2003. The Professional Engineering Committee of the Board reviewed your letter and its Exhibits 1-6 during the Committee's meeting of November 6, 2003.

It is our understanding that the Ground Water Quality Bureau is responsible for issuing discharge permits and enforcing regulations on domestic, industrial, mining and agricultural discharges that have the potential to impact the quality of the State's ground water resources. You indicated in your letter that the Department's regulations do not specify whether or not plans, specifications and supporting calculations for wastewater systems be certified by a New Mexico professional engineer. Perhaps this is one reason why the wide spectrum of quality and contents that the submittals received by your Bureau seem to have. We will be happy to comply with your request regarding the correlation between the Board's understanding of what constitutes engineering work, which according to the statutes requires the intervention of a registered engineer.

I summarize below our response to your various items regarding domestic, industrial, mining and agricultural discharges, as well as those related to large capacity (flows>2,000 gpd) septic tank and infiltration systems.

1. Design and supporting calculations (e.g. sizing, slopes) for wastewater storage, treatment and disposal systems are considered to be under the jurisdiction of the NM Engineering and Surveying Practice Act (Act) and do require to be certified as performed by or under the direct supervision of a New Mexico licensed professional engineer.

2. Although the New Mexico Engineering and Surveying Practice Act under Section 61-23-3 E states *"....The 'practice of engineering' does not include responsibility for the supervision of construction, site conditions, operations, equipment, personnel or the maintenance of safety in the work place;..."* professional engineers may provide these services as required by contractual obligations. Construction oversight may be completed by trained inspectors. The certification of as-built drawings implies the modification of engineering drawings, and should be considered engineering work. For the protection and safety of the public, it seems to me and my fellow members that the Department should ensure that all wastewater treatment systems are designed by professional engineers and constructed in accordance to the approved engineering plans. This can be accomplished by requiring submission of as-built drawings certified by a New Mexico licensed PE.
3. Pre-manufactured "package treatment plants" to be installed on a lot or integrated into a larger wastewater treatment and disposal system, should be certified by a PE. Obviously all off the shelf treatment systems have been pre-engineered prior to being marketed, and therefore, certified by a licensed PE -though not necessarily a New Mexico PE- at some point or another. However, putting together a number of pre-engineered parts into the design of a new treatment facility should be performed by a NM PE, so that the site-specific applicability of all systems is taken into account.
4. Federal agencies do not have any special privileges or exemptions under the Act. As you may know, the federal exemption was removed out of the New Mexico Engineering and Surveying Practice Act during the 2nd Session of the 43rd Legislature, Laws of 1998. While there may be federal law which exempts "employees" of the federal government, the board is of the opinion that contractors and sub-contractors to the federal government must be New Mexico licensed professional engineers in order to provide services to the federal government on, or off, federal premises. Federal employees also may not provide engineering services outside their federal employment if they are not licensed PEs in New Mexico.

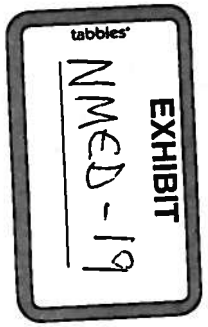
I hope our response addresses all of your concerns on this matter. If we may be of further assistance, do not hesitate to contact our executive director, Elena Garcia at 827-7546.

Sincerely,

Subhas Shah, PE
Chairman, Professional Engineering Committee

Analyses of Wastewater that Contains RV Waste

RV Site	Sampling Location	BOD mg/L	Nitrogen mg/L	FOG mg/L	Remarks
Bernalillo County					
American RV Park [2]			81-120 TN		186 RV spaces
High Desert RV Park [2]			41-80 TN		50-100 RV spaces
Route 66 MHP [2]			21-40 TN		29 RV spaces
Catron County					
Gila Cliff Dwellings [2]			>120 TN		
Dona Ana County					
Las Cruces KOA [2]		101-300	>120 TN		69 RV spaces
Western Skies RV [2]		101-300			
Eddy County					
SKP RV Park [2]			>120 TN		120 RV spaces
White's City [2]			41-80 TN		
Lea County					
Finish Line RV Park [3] - three treatment systems each consisting of two septic tanks in series					
	West #1	>560	16 NO3	41	5/18/2009
	West #1	38	17 TN		8/25/2009 system had been flooded with tap water
	West #1 inlet	683	4 NO3	58	4/19/2010
	West #1	64			6/9/2010
	West #1 outlet		87 TN		5/18/2011
	Middle #2	438	18 NO3	26	5/18/2009
	Middle #2	20	9 TN		8/25/2009 system had been flooded with tap water
	Middle #2 inlet	576	6 NO3	59	4/19/2010
	Middle #2 outlet	205	<0.1 NO3	33	4/19/2010
					6/9/2010



	Middle #2 outlet		89 TN		5/18/2011
	East #3	371	14 NO3	57	5/18/2009
	East #3	34	16 TN		8/25/2009 system had been flooded with tap water
	East #3 inlet	696	3 NO3	48	4/19/2010
	East #3 outlet	98	1 NO3	52	4/19/2010
					6/9/2010
	East #3 outlet		167 TN		5/18/2011
Lincoln County					
Little Creek RV Park [2]			81-120 TN		65 RV spaces
River Ranch RV Park [2]			41-80 TN		89 RV spaces
Rio Arriba County					
Cottonwood RV Park [2]		>300	81-120 TN		37 RV spaces
San Juan County					
Francisco RV Park [3] - two septic tank and drainfield systems					
	ST 1 inlet	130	76 TN		waste from 4 RVs at time of sampling
	ST 2 inlet	12	10 TN		waste from 2 RVs and office at time of sampling
Navajo Lake State Park [2]			>120 TN		
San Miguel County					
Pendaries RV Park [2]			41-80 TN		130 RV spaces
Santa Fe County					
Rancheros de Santa Fe [2]		31-100	81-120 TN		37 RV spaces
Santa Fe Skies RV Park [2]			81-120 TN		97 RV spaces
Sierra County					
Cedar Cove 1 [1]	ST inlet	667	45 TKN	101	raw RV waste with chemical additives
Cedar Cove 1 [1]	ST outlet	161	132 TKN	16	
Cedar Cove 2 [1]	ST inlet	2020	154 TKN	245	raw RV waste w/ chem; sludge disturbed during sampling

Cedar Cove 2 [1]	ST outlet	35	58 TKN	11	
Cedar Cove 4 [1]	ST inlet	211	168 TKN	109	long-term campers and Park Models
Cedar Cove 4 [1]	ST outlet	66	149 TKN	11	long-term campers and Park Models
D & K Storage [1]	ST inlet	221	137 TKN	17	raw RV waste with chemical additives
Lakeside RV Park [1]	offsite manhole	399	78 TKN	45	raw RV waste with chemical additives
Monticello RV Park [2]		31-100	41-80 TN		

Data Sources:

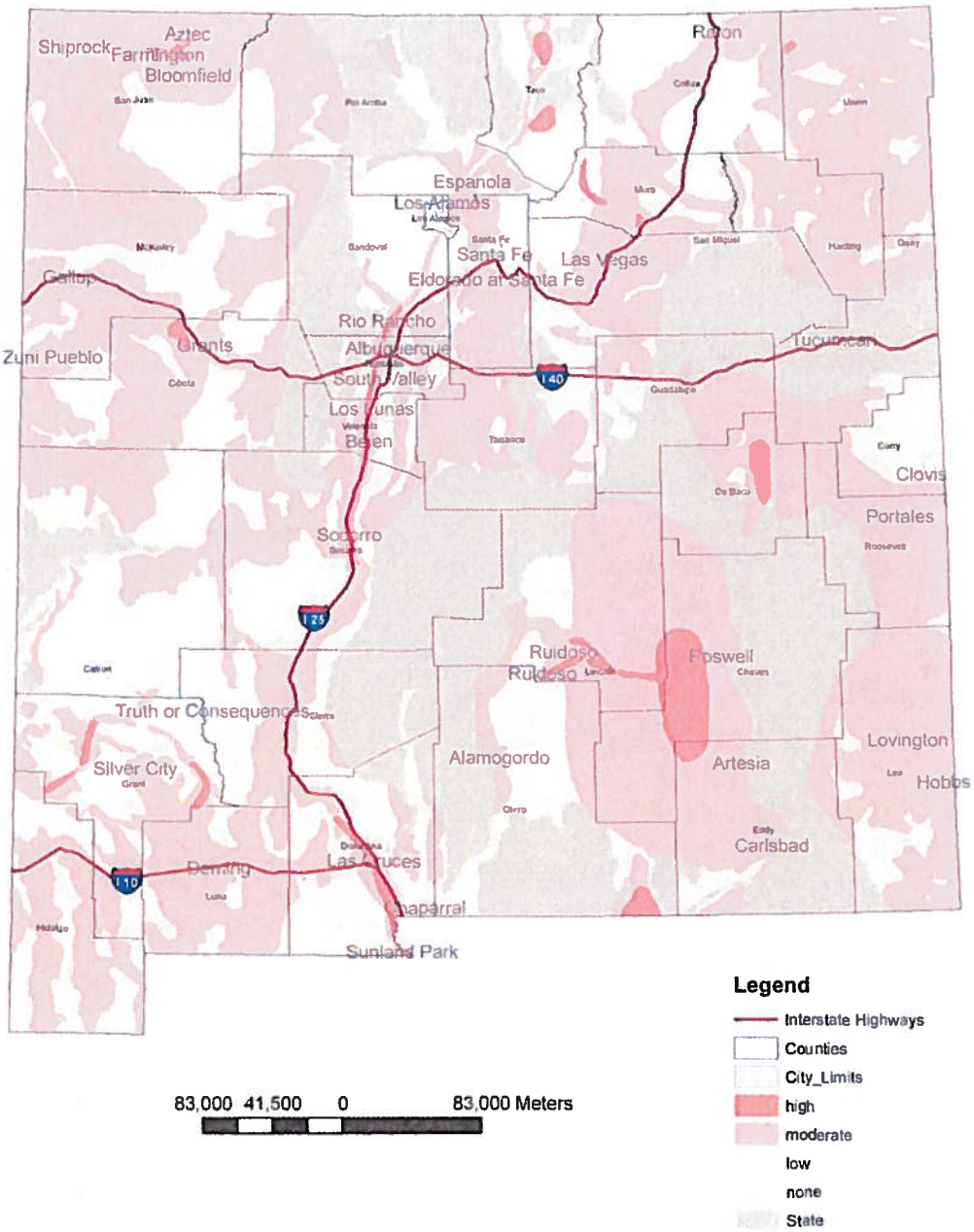
[1] Bohannan Huston Elephant Butte RV report

[2] GWB Discharge Permit files

[3] LWP files

Figure 1

Aquifer Sensitivity



EXHIBIT

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NMED - 20

AUG 2002
DOCKETED BY THE HEARING CLERK BEFORE THE SECRETARY OF ENVIRONMENT

STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT

IN THE MATTER OF THE APPEAL OF
A VARIANCE GRANTED TO CASA DEL
CANON CONDOMINIUMS, BAEHR/ROEHL
TAOS, NEW MEXICO

LW 02-03 (A)

HEARING OFFICER'S REPORT AND RECOMMENDED FINDINGS

DISCUSSION

Third parties appealed the granting by the District II Taos Field Office of three liquid waste permits for exceeding the maximum allowable discharge for lot size under 20 NMAC 7.3, Liquid Waste Disposal Regulations (LWDR).

The hearing was held in this matter on June 27 and July 22, 2002, in Taos, New Mexico, with a provision to leave the record open until August 2, 2002 for the purpose of accepting additional information about the number of bedrooms existing in the current units. The Department was represented by Chris Cudia and Brian Schall. Appellants appeared with a number of interested parties and neighbors; Applicant was represented by James Thompson, engineer. The hearing clerk was present to tape record the proceeding. No party was represented by counsel at the hearing.

Ultimately, the recommendation to reverse the Field Office is based in part on the testimony at the hearing relating to the number of bedrooms in the existing units, and in larger part on the three liquid waste permit applications themselves and a reading of the applicable regulations.

SUMMARY OF TESTIMONY

The testimony at the hearing offered by neighbors and existing condominium unit owners and residents touched on several issues; with the primary ones as follows:

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NMED-21

(1) The question of just how many acres supported the permit application (the range testified to was between 9 and 13 acres), with the Appellants alleging that the actual acreage was smaller than represented on the tax rolls and the liquid waste permit applications.

(2) The question of how many bedrooms exist in the current units already served by two existing liquid waste systems; this is relevant to the permit applications at hand insofar as the new systems might have to be adjusted to account for greater wastewater flow, with the Appellants stating that although the original permits were for twelve 2-bedroom units, at least six of the units were built as 3-bedroom units. Field Office staff confirmed that several of the existing units were 3-bedroom units.

(3) The accuracy of the maps submitted to support the applications, with the Appellants challenging that accuracy as flawed in reflecting wells and lines at the site.

(4) The diligence of the Applicants in maintaining the existing systems, with the Appellants stating that existing maintenance was lacking, and that they had had to pay to have the system pumped out themselves after the Applicants neglected to do so over a period of years.

(5) The existence of a homeowners association, with the Appellants insisting that such an association did not legally exist for the purpose of assuming responsibility for the maintenance of the new wastewater treatment systems.

The Field Office staff described the applications and the permitting process, and answered a number of questions about the application and the supporting maps. They also performed a confirmatory bedroom survey of the existing units to verify that in fact there were additional bedrooms beyond those permitted for liquid waste purposes.

Applicant's engineer, Mr. Thompson, spoke about the permit application and the property and answered a number of questions as well about the proposed systems.

Exhibits submitted and made part of the record include maps and the site plan showing the location of the proposed units, wells and lines; correspondence; evidence of revocation by the Corporation Commission of Vista del Canon, Inc.; a capital declaration under the Apartment Ownership Act; and other documents in which neighbors and existing unit owners express their concerns about the project.

More specifically, the following testimony was given at the hearing held June 27, 2002:

Mr. Cudia testified that there were 3 variances in question at this hearing. Staff had reviewed the applications for variance and had determined that they were consistent with the regulations and made the determination to grant them on February 28 2002. They had reviewed the variance applications with liquid waste experts, and had decided that the ground water protection offered was equal to or greater than that provided by the minimum lot size requirements.

Mr. Schall testified concerning the history of the variance applications. He stated that the variances had been denied three years prior, but that the Nayadic treatment system had been re-designed, re-tested and re-submitted for consideration. In particular there has been third party testing on the systems, which found that they met state engineering design criteria. Mr. Schall

stated that the Nayadic system had been installed nationwide and in other places of New Mexico. The systems were usually installed for single family dwellings. Although he did not know whether there were other large commercial denitrification systems made by Nayadic, the systems were designed for the flow anticipated on this property. Nayadic is an aerobic treatment unit which recirculates flow partly to a drain field, and partly to a septic tank or anoxic zone.

On cross-examination, Field Office staff were questioned about the accuracy of the plans submitted by Applicants showing setbacks, whether the number of bedrooms in the existing units have been undercounted, and whether the ground water level estimated at 5 feet in depth was accurate. Mr. Cudia stated that he had visited the site in the last month, had personally measured for all minimum setbacks and found that they were met. As to the number of bedrooms in the existing units, he stated that if more bedrooms were built than were permitted, the permit could be revoked. As to the water level he believes that the estimate of 5 feet in depth is an extremely liberal one. Ground water is highly influenced by the adjacent stream known as the Rio Fernando. He believes the water table is actually deeper than seven feet, based on a test pit dug there and a good data set from a surrogate stream, the Rio Pueblo de Taos.

On further cross-examination, Field Office staff were questioned about how the Applicants could impose the costs of maintenance on a condominium association. Mr. Cudia stated that Applicants would be required to submit an executed maintenance contract for the new systems. They were also asked whether the Ground Water Bureau had reviewed the applications for variance. Mr. Schall stated that the Ground Water Bureau had not reviewed the applications, that if there were a discharge of 2000 gallons per day or more, the Applicants would need a discharge plan under the Ground Water Regulations, but that each system in question is handling

a discharge of 1800 gallons per day.

On further cross-examination, the Field Office staff were questioned about what was different from three years ago when the variance applications were denied. Mr. Schall stated that three years ago the systems had not been designed specifically to reduce nitrogen. The company re-designed the system based on sound engineering principles. Staff was also asked about noise. Mr. Schall stated that the pumps are fairly low volume pumps, not high noise compressors, and that they would be inside housing. Staff was also asked about whether the system constituted a community water system. Mr. Cudia stated that it may or may not, that the consequence of whether it is relates to setbacks, and that the system met the setbacks regardless.

Mr. Ross Ulibarri testified that he believes the Nayadic is an experimental system and would not be a benefit to the community. The Applicants cannot point to another such system that can be examined. Things have been corrected in the university setting. He has a big question on the maintenance contract. The condominium association has no desire to be responsible for the maintenance of the system.

Ms. Elmira Martinez testified that the condominiums would be built in a rural area which is desperately in need of water.

Ms. Ellen Brodsky testified that she is the president of the homeowners association. She stated that the developers are not conscientious, the site plans are inaccurate, and the setbacks could not be verified. She also testified that the number of bedrooms in the existing units exceeded the number of bedrooms originally permitted. She further stated that notice of this hearing had not been sent to all homeowners. No legally valid condominium association was established, and the question of responsibility for maintaining the new system is important. The

existing homeowners are not a rich association of retirees, and most of them do not live there full-time. The association pays for garbage pickup and electricity for the wells and for insurance, but they cannot even afford to pay for insurance in a lump sum; they make installment payments. The homeowners have grave concerns about what will happen if the system breaks down, particularly if there is no money for repairs.

Thomas Johnston testified that he is the vice president of the homeowners association, that currently the association is not legally in effect, and it has no bylaws. The association was originally created in 1970, but its legal status was revoked for failure to file reports since 1981. Mr. Johnston further stated that the history of wastewater systems on the site has been poor. Tanks installed in 1984 were lost to history, and cannot be found to be serviced.

Mr. Adrian Trujillo testified that the community needs viable drinking water.

Mr. Maestas testified that he is concerned about wells being dug and how much water is on the site.

Ms. Pat Hoffman of San Geronimo Lodge testified that her main concern was maintenance. There is no responsible party here.

Ms. Kristen Ulibarri testified that the Nayadic system is experimental, and she is concerned that if maintenance is not kept up the sewage will be running into their drinking water.

Mr. James Thompson, the Applicants' engineer, testified that the well shown on the wrong place on the map was his error; he had measured in the wrong place. He does not know where the septic tanks were. The lines on the map are schematic, and the developers are still trying to find all existing lines and tanks. The required setbacks are only 10 feet so he did not look for them. A very similar system treatment system is operating in New Mexico and properly

permitted. The Nayadic is not an experimental system. All pumps and treatment works have alarms, both visual and audible, in the event of failure.

Mr. Patrick Drumm stated that he was concerned that someone could turn off the alarms in the event the pumps were malfunctioning and that the alarm system could be defeated. He wondered about proper notification procedures.

The hearing was reconvened on July 22, 2002, for the purpose of taking testimony from those who had not been notified of the June 27, 2002 meeting, for the purpose of accepting testimony on the number of bedrooms in the existing units, and for the purpose of accepting testimony on the legal status of the homeowners association.

The following testimony was given when the hearing was reconvened on July 22nd, 2002: Ms. Francis Chandler testified that in obtaining a permit in 1984, the Applicants had represented that they had 16 acres. They did not have this amount of acreage to begin with. They now have 9.26 acres, and are saying they have 12.9 acres. They should not count acreage that has been deeded out. According to the county tax rolls, the applicants have 11.388 acres. The existing units, several of them, have three bedrooms, not two. She was on the septic committee of the homeowners association, which wanted to clean out the existing tanks. No one could find them. They are retirees with limited funds, it is a loose association, and it is difficult to find $3000 to clean out tanks. When they finally cleaned out the tank, the sludge had almost turned to concrete. They have voted not to accept responsibility for a high-tech high maintenance septic tank system.

Ms. Ellen Brodsky testified that she become aware of a gentleman with property near the river who had not been notified of the hearing. She further stated that the homeowners

association had never been properly formed to begin with. The developers corporation, Vista Canon, Inc., had lapsed. The developers have never cleaned the existing tanks, and there's a lack of concern for existing structures. In a recent homeowners meeting they voted not to pay for the new tanks or the maintenance of them. The whole septic system would lie on land not belonging to them, and they're not responsible for it. Using the usual definition of bedrooms, and looking to the Uniform Building Code in deciding whether or room constituted a bedroom, half of the existing units have three bedrooms rather than two. Accounting for the additional bedrooms in the total design flow for wastewater brings the design flow well over that originally permitted, and over 2,000 gallons per day. The permit should not be issued if the developers cannot identify someone other than the existing homeowners association to execute a proper maintenance agreement for the new systems.

Ms. Cynthia Anderson testified concerning the plots shown on the map, and explained the dotted lines designating the plots.

Margaret Vigil on behalf of Sen. Cisneros urged the department to consider existing compliance in the permitting decision.

Mr. Schall stated that he was asked to testify about whether the additional flow, accounting for the additional bedrooms, affected the nitrogen loading for the new system. The systems are efficient, and could be tweaked or adjusted to hit a target of 75 percent treatment, for example, instead of 71 percent. He has not yet done the math, but the additional flow could be addressed. If the existing number of bedrooms brings the total design flow over 2000 gallons per day, they should not have a liquid waste permit, but the matter should be referred to the Ground Water Bureau.

At the end of the hearing on July 22nd, 2002, I left the record open a second time, until August 2, 2002, because I wanted the Field Office staff to confirm the results of the bedroom survey that had been performed by Ms. Brodsky. The Field Office staff reported their findings to me verbally on July 24th and July 30th. They confirmed that several of the existing units had three bedrooms rather than two: the rooms are of sufficient size to be bedrooms, they have their own egress, and some of them have a full bath.

ANALYSIS

The applications for the variances in question are dated January 7, 2002. One application appears to have photocopied in triplicate, with different permit numbers on the top, and the distinguishing markings "system 1," "system 2," and "system 3" under "Justification." Between that date and February 28, 2002, correspondence indicates that the Applicants and the Field Office staff worked together to make the applications complete and approvable. The application for liquid waste permit supporting each of the requests for variance is also identical among the 3 systems, again with just the distinguishing words "system 1," "system 2" and "system 3" for differentiation. The parcel or lot described in support of each system is the same parcel or lot, with the same legal property description. Staff approved the variance for each of the 3 systems on February 28, 2002.

A review of the application shows that total wastewater flow planned for the property is 9,000 gallons per day. There are 2 existing systems supporting the existing condominiums, each of which is permitted for less than 2,000 gallons per day, and 3 more are planned, with each planned system to be receiving less than 2,000 gallons per day. The effect of splitting the total wastewater flow for the property into five parts, each handling a discharge of less than 2,000

gallons per day, is that the Applicants remain within the Liquid Waste Management realm and avoid regulation under the Ground Water Regulations requiring a discharge plan.

Notwithstanding the historical practice of the Field Operations staff in permitting such "splitting," it appears that dividing the total wastewater flow on a single property among several wastewater treatment systems for the purpose of staying within the Liquid Waste Management Regulations and avoiding regulation under the Ground Water Regulations is not consistent with applicable law.

The relevant sections of the Liquid Waste Management Regulations follow:

Section 20.7.3.102: "This Part [20.7.3 NMAC, the Liquid Waste Disposal Regulations adopted by the Environmental Improvement Board] applies to on-site liquid waste systems that are designed to receive and do receive two thousand (2,000) gallons or less of liquid waste per day, and that do not generate discharges that require a Discharge Plan pursuant to 20 NMAC 6.2 or a National Pollutant Discharge Elimination System (NPDES) permit."

Section 20.7.3.107.AX.: "'On-site' means located on or within a lot."

Section 20.7.3.107.AY.: "'On-site liquid waste system' means a liquid waste system, or part thereof, serving a dwelling, establishment or group....."

Section 20.7.3.107.AR.: "'Lot' means a unified parcel where liquid waste will be generated or disposed, excluding roadways.... 'Lot' includes any contiguous parcel subject to a legally recorded perpetual easement which dedicates the servient parcel for the disposal of liquid waste generated on the dominant parcel."

Section 20.7.3.107.T.: "'Design flow' means the flow rate for which an on-site liquid waste system must be designed in order to assure acceptable system performance.... 1. For

residential sources, the design flow shall be calculated.... Multiple family dwelling unit source design flows shall be calculated as the sum of design flows for each single family unit included."

Section 20.7.3.107.BV.: "'Total design flow' means the sum of design flows for all on-site liquid waste systems and other wastewater discharges on a lot."

Section 20.7.3.401.A.: "The type of **on-site liquid waste system** shall be determined on the basis of location, lot size, soil, [etc.]....and **shall be designed to receive all design flows from the property.**" (Emphasis added.)

The relevant sections of the Ground Water Regulations follow:

Section 20.6.2.3104: "**Discharge Permit Required.** ...[N]o person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit...."

Section 20.6.2.3105: "**Exemptions from Discharge Permit Requirement.** ...B. Effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day...."

Section 20.6.2.7.NN: "'Sewerage system' means a system for disposing of wastes, either by surface or underground methods, and includes sewer systems, treatment works, disposal wells and other systems."

The Applicants are required on two grounds to apply for a discharge permit rather than a liquid waste permit:

(1) The existing systems are handling the wastewater flow for more than the original number of bedrooms permitted, and more than 2,000 gallons per day, as calculated under the relevant Liquid Waste Management Regulations.

(2) The proposed systems bring the total wastewater flow for the property far above 2,000 gallons, and although splitting the flow among several systems brings the flow for each new system below 2,000 gallons, Section 401.A requires a liquid waste system to receive all flows from a property. The exemption in Section 3105 of the Ground Water Regulations is not available to them on either ground, because the sewerage system does not receive 2,000 gallons per day or less of effluent.

RECOMMENDED FINDINGS

1. Applicants own the property in question, in Taos, New Mexico, Taos County.
2. Three permit applications were submitted by Applicants; the permits were granted on February 28, 2002 by Courte Voorhees, District II Manager.
3. Third parties the Ulibarris and others timely sought an appeal of the approval of the permits, and a hearing on the appeal was held June 27, and July 22, 2000, in Taos, New Mexico, by a hearing officer properly appointed.
4. The hearing in this matter was conducted pursuant to 20 NMAC 7.3.203, such that all relevant views, arguments and testimony could be presented. Every participant was allowed full opportunity to call witnesses, present testimony and other evidence, introduce exhibits, and cross-examine witnesses called by any other participant. All testimony was taken under oath.

5. The hearing was recorded; several audiotapes are part of the record. Closure of the record was delayed until August 2, 2002 for the purpose of a confirmatory bedroom survey performed by Field Office staff of the existing condominium units.
6. No objections were made to any exhibits offered, and all are part of the record: the applications for liquid waste permits, the original permits for the property from 1984, and the approvals; associated correspondence; the request for hearing; the Notice of Hearing; sign-in sheets from the hearing; maps and diagrams of the site; several documents related to the legal status of the homeowners association and this Report.
7. The Liquid Waste Management Regulations do not allow the issuance of a liquid waste permit for any property on which total wastewater flow exceeds 2,000 gallons per day, either by design or actual flow; such a property is subject to the discharge plan requirements in the Ground Water Regulations. See Section 20.7.3.401.A and Section 20.6.2.3105.
8. The permit applications submitted reflect a total anticipated wastewater flow of 9,000 gallons following the installation of the three new systems.
9. The two existing systems, each of which is designed to handle less than 2,000 gallons per day, are actually receiving more than 2,000 gallons per day as a result of the construction of the existing units with 30 bedrooms instead of the 24 that were permitted under the Liquid Waste Regulations.
10. At the hearing, pursuant to 20 NMAC 7.3.202 and 203, Appellants bore the burden of proof to establish by clear and convincing evidence that the liquid waste permits should be denied.

11. Appellants established that the Field Office staff's approvals should be reversed, based upon the permit applications submitted for review; and the evidence that the existing units were built with several more bedrooms than had been permitted, resulting in the application of the Ground Water Regulations rather than the Liquid Waste Management Regulations to the site and its current and planned discharges.
12. The final decision in this matter has been properly delegated to the Director of the Field Operations Division by the Secretary of the Environment Department.

RECOMMENDED FINAL ORDER

A draft Final Order consistent with the recommendations above is attached and incorporated by reference. A decision should be made by August 23, 2002, fifteen working days following the closing of the record, in accordance with 20 NMAC 7.3.203.G. The decision shall be sent by certified mail to the Appellants, Applicant, and ED staff; it can be sent by regular mail first-class to the others who requested a copy, as noted on the sign-in sheet.

Respectfully submitted,

Felicia L. Orth

FELICIA L. ORTH, Hearing Officer

AUG 2002
DOCKETED BY THE
REGULATORY CLERK BEFORE THE
SECRETARY OF ENVIRONMENT

STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT

IN THE MATTER OF THE APPEAL OF
A VARIANCE GRANTED TO CASA DEL
CANON CONDOMINIUMS, BAEHR/ROEHL
TAOS, NEW MEXICO

LW 02-03 (A)

FINAL ORDER

This matter comes before the Director of the Field Operations Division (Director) as the designee of the Secretary of Environment following a hearing before a hearing officer on June 27 and July 22, 2002 in Taos, New Mexico. Third parties appealed the granting by the District II Taos Field Office of three liquid waste permits for exceeding the maximum allowable discharge for lot size under 20 NMAC 7.3, Liquid Waste Disposal Regulations (LWDR).

The Director having considered the hearing record, including all exhibits and the Hearing Officer's Report and being otherwise fully advised regarding this matter hereby adopts the Hearing Officer's Recommended Findings.

IT IS THEREFORE ORDERED that District II's action is reversed for the reasons set out in the Hearing Officer's Report and Recommended Findings. The permits cannot be issued under the Liquid Waste Disposal Regulations, and the matter will be referred to the Ground Water Bureau for action under the Water Quality Control Commission Regulations.

MICHAEL R. KORANDA
Director, Field Operations Division

NOTICE OF PROCEDURE FOR APPELLATE REVIEW

There is no statutory right of appeal from this Final Order. Any aggrieved party may seek review in the District Court, by writ of certiorari, pursuant to Rule 1-075, NMRA 1998.

CETIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Final Order was mailed on August 26, 2002 via certified mail to the Applicants and the District II Manager, and to the Ulibarris, Ms. Brodsky, Ms. Chandler, Ms. Hoffman, Mr. Johnston, and Ms. Vigil at the addresses shown on the sign-in sheets.

Carolyn Vigil

CAROLYN VIGIL, Hearing Clerk

BEFORE THE WATER QUALITY CONTROL COMMISSION
FOR THE STATE OF NEW MEXICO

IN THE MATTER OF:
THE PETITION FOR REVIEW OF
ALDEBARAN ENTERPRISES
A/K/A TAOS COUNTRY CLUB CASITAS,
Petitioner.

RECEIVED
DEC 23 2002

Received
DEC 23 2002

WQCC No. 02-06A

Decision and Order

THIS MATTER was before the New Mexico Water Quality Control Commission ("Commission") for review and decision on November 12-13, 2002. The Commission heard testimony and reviewed exhibits admitted into evidence. After considering the entire record, the Commission enters the following decision and order:

Findings of Fact

Procedural Findings

1. On or about May 20, 2002, the Ground Water Quality Bureau of the Environment Department ("Department") informed Aldebaran Enterprises ("Petitioner") that it needed a discharge permit for its proposed project. See Department's Exhibit 2.
2. On or about June 13, 2002, Stephen Natelson, counsel for Petitioner, filed a notice of appeal of this determination pursuant to 20.6.2.3112(B) NMAC. See Department's Exhibit 2.
3. On or about August 13, 2002, the Commission set a October 1, 2002, hearing date.
4. On or about August 19, 2002, Mr. Natelson filed a Verified Amended Appeal Petition. See Department's Exhibit 2.
5. On or about September 5, 2002, Paul Ritzma, counsel for Department, filed a Response to Appeal Petition. See Department's Exhibit 2.

EXHIBIT
NMED-22

6. On or about September 20, 2002, Mr. Natelson filed a Motion to Vacate and Continue the October 1, 2002, hearing. The motion included a waiver of the ninety (90) day hearing requirement found in WQCC Regulation 20.1.3.201(A) NMAC. See Department's Exhibit 2.
7. On or about September 23, 2002, Mr. Natelson filed a Supplement to its September 20, 2002, Motion to Vacate and Continue the Hearing. See Department's Exhibit 2.
8. On or about October 1, 2002, the Department orally did not oppose the Motion to Vacate and Continue the hearing.
9. On or about October 1, 2002, Hearing Officer John D'Antonio and Commission granted the Motion to Vacate and Continue the Hearing.
10. The Commission re-set the hearing for November 12, 2002.
11. On or about November 12-13, 2002, a hearing in the above-captioned matter was held.
12. On or about November 13, 2002, a quorum of the Commission reached a decision reflected in this order.

Substantive Findings

1. The Department presented evidence that a discharge permit under 20.6.2.3104 NMAC was required. See Department's Exhibits 1, 2.
2. The Commission's regulations state: "sewer system means pipelines, conduits, pumping stations, force mains, or other structures, devices, appurtenances or facilities used for collecting or conducting wastes to an ultimate point for treatment or disposal." 20.6.2.7(PP) NMAC.

3. The Commission's regulations state: "sewerage system means a system for disposing of wastes, either by surface or underground methods, and includes sewer systems, treatment works, disposal wells and other systems." 20.6.2.7(QQ) NMAC.
4. The Commission's regulations state: "[N]o person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary." 20.6.2.3104 NMAC.
5. The Commission's regulations state that a discharge permit is not required when "effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day." 20.6.2.3105(B) NMAC.
6. Petitioner will discharge effluent or leachate so that it may move directly or indirectly into ground water and therefore must obtain a Ground Water Discharge Permit pursuant to Section 20.6.2.3104 of the Water Quality Control Commission Regulations. See Department's Exhibits 1, 2.
7. Petitioner's discharge is not exempt from the Water Quality Control Commission Regulations pursuant to Section 20.6.2.3105(B) because the discharge to the "sewerage system" will exceed 2,000 gallons per day. See Department's Exhibits 1, 2.
8. A plain meaning reading of "sewerage system" supports the Department's position.
9. Petitioner failed to present a preponderance of evidence it was exempt from a discharge permit under 20.6.2.3105(B). See Petitioner's Exhibits 1-4.

Conclusions of Law

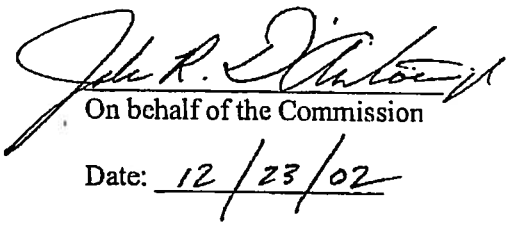
1. The Commission has jurisdiction over Petitioner, the subject matter of this proceeding, and complied with all notice and other procedural requirements governing the Commission's actions. See NMSA 1978, § 74-6-5(O), (P) (2000) and 20.1.3.100-.702 NMAC.
2. The Commission may take action to deny Petitioner's petition to review Department's determination.

Order

Based upon these Findings of Fact and Conclusions of Law, a quorum of the Commission renders the following decision and order:

IT IS THEREFORE ORDERED that:

1. Petitioner's petition is denied.



On behalf of the Commission

Date: 12/23/02

EXHIBIT
tabbies NMED-23

NEW MEXICO ENVIRONMENT DEPARTMENT (NMED)
POLICY FOR REGULATING ON-SITE LIQUID WASTE
DISCHARGES TO A SINGLE LOT
September, 2004

Purpose: This policy provides direction to NMED staff on how to consistently regulate existing and future on-site liquid waste discharges to a single lot.

Regulatory Authority: The following excerpts from the New Mexico Liquid Waste Disposal Regulations (20.7.3 NMAC) and the New Mexico Water Quality Control Commission Regulations (20.6.2 NMAC) provide the basis for regulatory decisions for on-site liquid waste discharges to a single lot.

1. Liquid Waste Disposal Regulations (20.7.3 NMAC) - Liquid Waste Permit requirements

- 20.7.3.2.A– Liquid Waste Regulations apply to "on-site liquid waste systems" that are designed to receive and do receive 2,000 gallons or less of liquid waste per day, and that do not generate discharges that require a Discharge Permit pursuant to 20.6.2.3104 NMAC or a National Pollutant Discharge Elimination System (NPDES) Permit.

- 20.7.3.7.AX– "On-site" means located on or within a "lot".

- 20.7.3.7.AY– "On-site liquid waste system" means a liquid waste system, or part thereof, serving a dwelling, establishment or group, and using a liquid waste treatment unit designed to receive liquid waste followed by either a soil treatment or other type of disposal system.

- 20.7.3.7.AR– "Lot" means a unified parcel where liquid waste will be generated or disposed, excluding roadways and roadway easements, legally recorded or otherwise validated by other means. "Lot" includes any contiguous parcel subject to a legally recorded perpetual easement which dedicates the servient parcel for the disposal of liquid waste generated on the dominant parcel.

- 20.7.3.7.T – "Design flow" means the flow rate for which an on-site liquid waste system must be designed in order to assure acceptable system performance.

- 20.7.3.BY – "Wastewater" means blackwater and graywater.

- 20.7.3.7.BV – "Total design flow" means the sum of design flows for all on-site liquid waste systems and other wastewater discharges on a "lot".

- 20.7.3.200.A(1) - No person shall install or have installed a new "on-site liquid waste system" or modify or have modified an existing "on-site liquid waste system", unless that person obtains a permit issued by the Department prior to construction of such installation or modification.

- 20.7.3.400.A(1) – The "on-site liquid waste system" shall be designed to receive all "design flows" from the property.

2. Water Quality Control Commission Regulations (20.6.2 NMAC) – Ground Water Discharge Permit requirements

- 20.6.2.3104 – [N]o person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary.

- 20.6.2.3105.B – Provides an exemption from the Ground Water Discharge Permit requirements for "Effluent which is discharged from a "sewerage system" used only for disposal of household and other domestic liquid waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day".

- 20.6.2.7.QQ – "Sewerage system" means a system for disposing of wastes, either by surface or underground methods, and includes "sewer systems", treatment works, disposal wells and other systems.

- 20.6.2.7.PP – "Sewer system" means pipelines, conduits, pumping stations, force mains, or other structures, devices, appurtenances or facilities used for collecting or conducting wastes to an ultimate point for treatment or disposal.

Policy for New Facilities:

If the proposed facility has a total design flow that is less than 2,000 gpd to a single lot and does not otherwise require a Discharge Permit, a Liquid Waste Permit is required for the facility.

If the proposed facility has a total design flow that exceeds 2,000 gpd to a single lot, a Discharge Permit is required for the facility. Field Operations Division (FOD) staff notify the Ground Water Quality Bureau (GWQB).

Policy for Existing Facilities with a Total Design Flow of Less Than 2,000 gpd to a Single Lot:

If the existing facility has a total design flow that is less than 2,000 gpd to a single lot, FOD shall issue Liquid Waste Permit(s) up to a maximum total design flow of 2,000 gpd to a single lot. When the total design flow will exceed 2,000 gpd to a single lot, FOD shall deny a modification to the Liquid Waste Permit(s) and shall instead notify the GWQB.

Policy for Existing Facilities with a Total Design Flow that Exceeds 2,000 gpd to a Single Lot:

1. Existing facilities which have both a Discharge Permit and a Liquid Waste Permit:

FOD actions: No modification of the Liquid Waste Permit shall be authorized. Notify the GWQB.

GWQB actions: Upon renewal or modification of the Discharge Permit, the system previously permitted with a Liquid Waste Permit shall be incorporated into the

existing Discharge Permit as a component of the facility sewerage system.

2. Existing facilities which have only Liquid Waste Permits, including facilities on very large lots:

FOD actions: No modification of the Liquid Waste Permit shall be authorized. Notify the GWQB and refer facility owner to the GWQB.

GWQB actions: Upon referral by FOD, the GWQB shall require a Discharge Permit which includes all domestic waste discharges that comprise the facility sewerage system. Facilities will be required to obtain Discharge Permits in order of priority based on ground water vulnerability, system failures, and system modifications.

3. Existing facilities which have neither Liquid Waste Permits nor a Discharge Permit:

FOD actions: No Liquid Waste Permits shall be issued. Notify the GWQB and refer facility owner to the GWQB.

GWQB actions: Upon referral by FOD, the GWQB shall require a Discharge Permit which includes all domestic waste discharges that comprise the facility sewerage system.

4. Existing facilities which have both a Liquid Waste Permit(s), and a Discharge Permit covering a non-domestic waste discharge (e.g., agricultural, industrial, mining, etc).

FOD actions: No modification of the Liquid Waste Permit shall be authorized if the total design flow to the lot exceeds 2000 gpd. Notify the GWQB and refer facility owner to the GWQB.

GWQB actions: Upon referral by FOD, the system previously permitted with a Liquid Waste Permit shall be incorporated in the existing Discharge Permit as the facility sewerage system.

Ana Marie Ortiz, Director
Field Operations Division

Charles Lundstrom, Director
Water and Waste Management Division

NMED Exhibit 24 - Diagram of setbacks between multiple conventional septic systems on a single lot.

The circles below represent the area required for each liquid waste system, based on the design flow, which is based on the number of bedrooms. The circles must not overlap. The radius of any circle is used with any adjoining circles to determine the minimum distance between the liquid waste systems. For example, a three bedroom house has a design flow of 375 gallons per day. The area required for a conventional system, based on a maximum flow of 500 gallons per day per acre (20.7.3.301.C NMAC) is ¾ acre, calculated by 375/500 = 0.75. One acre is 43,560 square feet, so ¾ acre is 0.75 x 43,560 = 32,670 square feet. The radius of a circle of this size is calculated using the formula $A = \pi r^2$, rearranged as $r=\sqrt{A/\pi}$, or radius = $\sqrt{32{,}670/3.1416}$ = 102 feet. The distance required between two liquid waste systems serving three bedroom homes is 102 + 102 = 204 feet, measured at the closest point. In the diagram below, the three circles on the left have radii of 102 feet. The distance between any two systems, no matter what the design flows, whether the same or different, can be determined in this manner. In this example, the total design flow is 2 x 375 = 750 gallons, plus 3 x 440 = 1320 gallons for a total of 2070 gallons. Under current policy and regulations, these systems could not be installed as conventional systems on a single lot, but as shown they could be installed under the proposed rule, provided the lot size met the 500 gpd per acre minimum for conventional systems, in this case 4.1 acres.

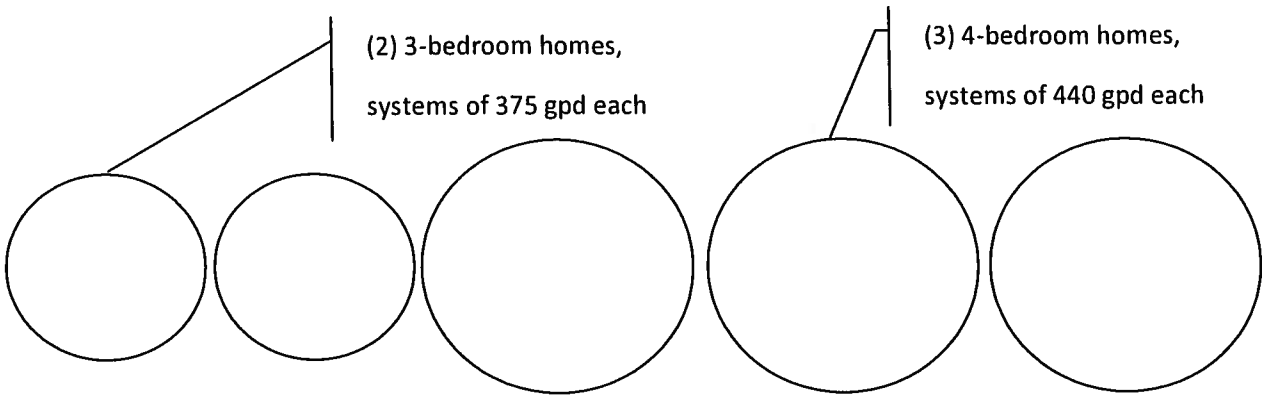


EXHIBIT
NMED-24

NMED Exhibit 25.
Corroded Concrete Septic Tank Lid.

NMED Exhibit 26

Gravel Content in Soil

Regulation 20.7.3.303.B requires a clearance of 4 feet of suitable soil from the bottom of the drainfield to ground water or another limiting layer. Regulation 20.7.3.7.S.13 NMAC states "'suitable soil' means a soil, whether naturally occurring or introduced, that will treat the primary effluent effectively and act as an effective filter and remove organisms and suspended solids prior to the effluent reaching ground water, bedrock or a limiting layer, and that will provide adequate transmission to prevent a failed system; suitable soils are classified Table 703.1:" While Table 703.1 does not include gravel, the presence of gravel in drainfield soil is addressed elsewhere in Regulation 20.7.3.703 NMAC. Subsection 703.F states, "Conventional treatment systems shall not be constructed in type Ia soils where the depth to groundwater is less than 30 feet or gravel." Subsection 703.I states, "The gravel content of in-place natural soil shall not exceed 30%." Regulation 605 does not specify the level of treatment required for gravelly soil, but the department has required secondary treatment with disinfection in the past.

The purpose of these regulations is to ensure that percolating effluent will travel through at least 4 feet of soil that will filter out microbes and suspended solids prior to entering groundwater or encountering a limiting layer. There are situations, however, where gravelly soil overlies other sediment that into which effluent will percolate and be treated. Subsection 703 disqualifies gravelly soil regardless of the depth to groundwater, and regardless of whether or not four feet of suitable soil underlie a gravelly layer into which a drainfield is to be placed.

Figures 1 and 2 are pictures of a sedimentary deposit in Placitas that contains more than 30% gravel. At this location, however, the gravel is underlain by approximately 150 feet of other basin fill sediment consisting mostly of sand and finer grained material. Figures 3 and 4 are pictures of a gravelly layer in San Juan County. This layer also contains more than 30% gravel and is underlain by approximately 75 feet of finer-grained sediment. Given that the clearance requirement is 4 feet of suitable soil, and that groundwater occurs much deeper than 4 feet at each site, a requirement for secondary treatment and disinfection would not be justified at either site for the purpose of groundwater protection.

Another factor is that finer-grained materials often fill the interstices between the gravel stones, rather than empty void space (See Figure 2). Effluent will receive some treatment by migrating around the gravel stones thru these finer-grained sediments.

Figure 1. Placitas, NM gravel layer.

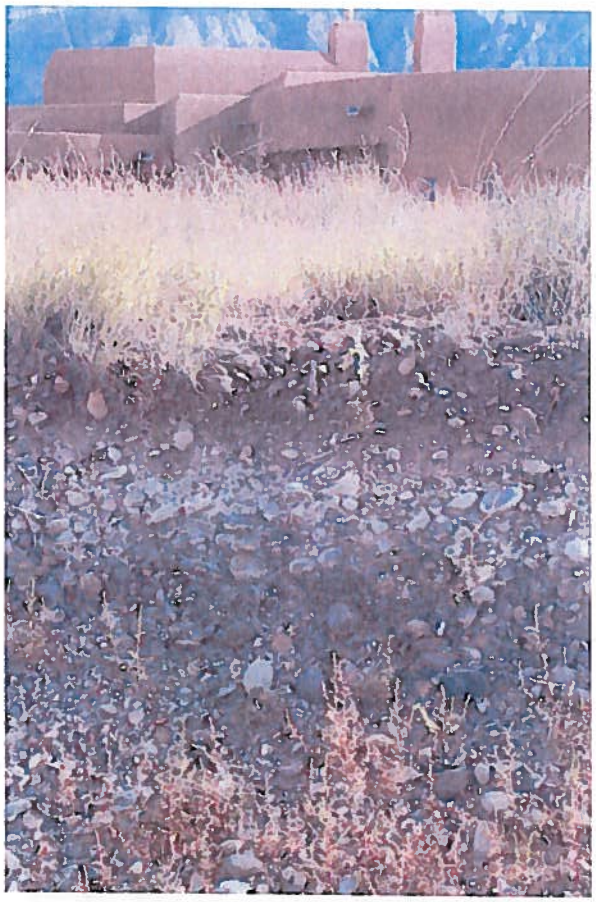
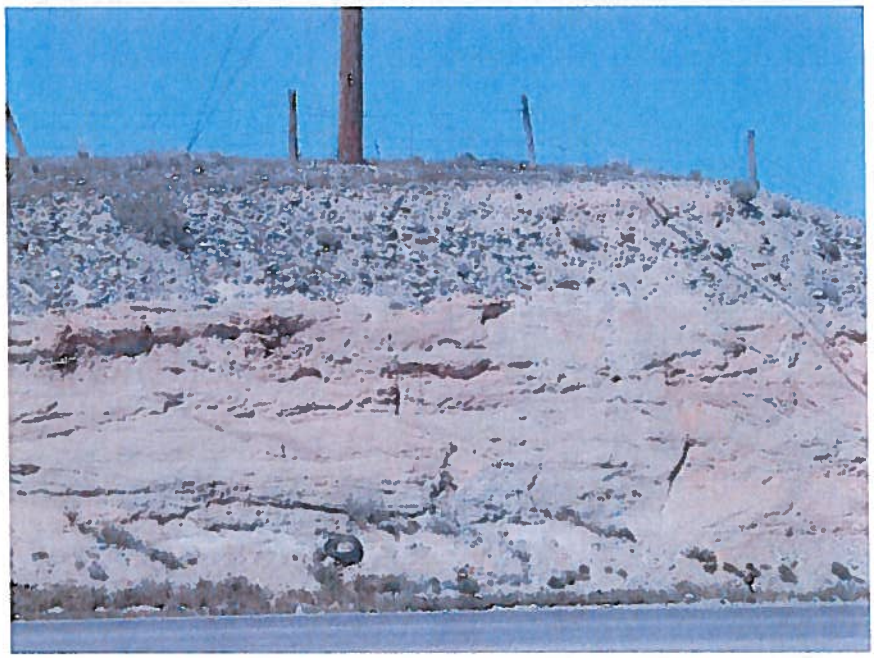


Figure 2. Placitas, NM gravel layer closeup showing finer-grained interstitial sediment.

Figure 3. San Juan County, NM gravel layer on mesa top. The gravel has washed down over underlying finer grained sediment which is visible in the lower left area of the photo.

Figure 4. San Juan County, NM gravel layer deposited on finer-grained sediment.



For these reasons, the following amendments to Subsection 20.7.3.703.F, Table 703.1, and to Subsection 20.7.3.703.I NMAC are proposed.

The reference to gravel in Subsection 20.7.3.703.F NMAC is proposed to be ~~deleted~~ as follows:

> F. Conventional treatment systems shall not be constructed in type Ia soils where the depth to groundwater is less than 30 feet ~~or gravel~~. For these soils, refer to 20.7.3.605 NMAC.

The following new material is proposed to be added to the soil texture description for Ia type soil in Table 703.1.

Soil Type	Soil Texture	Application Rate (AR) (sq. ft./gal/day)
Ia	Coarse Sand or Up To 30% Gravel	1.25 (See Subsection F of 20.7.3.703 NMAC)

The following new material is proposed to be added to Subsection I of 20.7.3.703 NMAC.

> I. The gravel content of in-place natural soil shall not exceed 30%. The department may identify and map areas of the state where groundwater is not at risk from microbial contamination from onsite liquid waste disposal systems that discharge into gravel, and where gravel contents greater than 30% may be allowed. The following hydrogeologic conditions may be considered when determining if groundwater is not at risk:
>
> 1. Groundwater does not exist;
> 2. Uppermost groundwater contains a total dissolved solids concentration greater than 10,000 milligrams per liter;
> 3. Uppermost groundwater occurs under confined conditions; and
> 4. Uppermost groundwater occurs at a depth of 30 feet or greater with at least 4 feet of suitable soil in the vadose zone.

TECHNICAL MANUAL SERIES

LIQUID WASTE DISPOSAL

EXHIBIT
NMED-27

WASTEWATER DISPOSAL

BY

SPLIT-FLOW SYSTEMS

STATE OF NEW MEXICO

STATE OF NEW MEXICO
HEALTH AND ENVIRONMENT DEPARTMENT
ENVIRONMENTAL IMPROVEMENT DIVISION

LIQUID WASTE DISPOSAL

TECHNICAL MANUAL SERIES

WASTEWATER DISPOSAL BY SPLIT-FLOW SYSTEMS

STATE OF NEW MEXICO
HEALTH AND ENVIRONMENT DEPARTMENT
ENVIRONMENTAL IMPROVEMENT DIVISION

FEBRUARY, 1981

INTRODUCTION

A split-flow wastewater disposal system is one in which household waste is separated into particular components which are then treated and/or reused in different ways. Normally, the systems separate greywater from black wastes. Black waste (or blackwater) is the waste from toilets and garbage disposals. Greywater is defined as all the other wastewater produced by a household. There are several advantages to separating greywater and black waste. Normally, one or both of the separated flows is recycled or otherwise processed in a way which permits reuse. In particular, either the toilet wastes are handled by a special toilet, or the greywater is recycled for toilet flushing. In either case, much of the water which a household normally uses for flushing is saved (typically 40% of the water used indoors in an average household equipped with standard plumbing fixtures). Consequently there is substantially less flow of wastewater to the septic tank, which reduces the area needed for the drainfield. An added environmental benefit if black wastes are handled in a special way is the decreased nitrogen loading on the groundwater.

The ideas and recommendations contained in this manual are based on experience and engineering judgment for the "average situation", but each site is different and some modifications may be necessary. However, any modifications require that adequate consideration be given to all the ramifications inherent to such changes. Split-flow systems are still in the early stage of development: most are owner designed, homemade systems, and have not been subjected to rigorous engineering studies; and as a result, reliable information on performance is limited.

In all cases, split-flows require more attention from the users than do traditional plumbing systems, and the homeowner must be willing to accept this responsibility.

TYPES OF SYSTEMS

In deciding to use a split-flow system one must choose the type of greywater system to use and also determine how to handle the black wastes. There are many possibilities available, but two examples will illustrate the most common choices. One example is a greywater recycling system; the other is a system involving composting toilets.

Figure 1 shows a typical greywater recycling system. Wastewater from the laundry, utility sink, and bathtub/shower is recycled (stored and treated) and then used for toilet flushing. Wastewater from the toilet, bathroom sink and kitchen sink is discharged to a septic tank, along with any of the recycled water which is not needed for flushing. One common variation on Figure 1 is to use the greywater to water a garden, rather than for toilet flushing.

As a second example, Figures 2 and 3 illustrate typical composting toilets which can be installed in all the bathrooms of a dwelling. The toilets