

STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT



IN THE MATTER OF:
THE APPLICATION OF S&R
SEPTIC FOR THE RENEWAL OF
A SEPTAGE DISPOSAL FACILITY
DISCHARGE PERMIT, DP-465

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GWB 19-28(P)

**JEROME B. HANSEN'S AMENDED PROPOSED FINDINGS OF FACT AND
CONCLUSIONS OF LAW**

In accordance with 20.1.4.500.B NMAC and to the Environment Department as Issuing Agency pursuant to 20.1.4.1 NMAC, and 20.6.2.3110. K. Public Hearing Participation, Mr. Jerome Hansen submits the following amended proposed findings of fact and conclusions of law:

CLOSING SUMMARY

The S&R Septage Disposal facility has operated without a formal permit since expiration December 27, 2017 of its most recent five-year permit. The Water Quality regulations require the application be submitted 180 days (i.e. July 1, 2017) prior to the expiration date, to allow time for the permit to be adequately reviewed for appropriate conditions before the current permit expiration date. S&R Septic's owners did not submit the application until February 22, 2018, 237 days late.

The Ground Water Quality Bureau (hereafter "GWQB or "Department") admits that it is understaffed and has not had the sufficient resources and budget to properly monitor this septage disposal facility. As a result, there has been little compliance by S&R Septic with the conditions of its prior permits. Further, the Department has no regulation specifically addressing whether an applicant can continue to operate after expiration of the permit, and then continue operations during the late application process. The current decision will not likely be completed until March or April of 2020. The two years of continued operation to date, and any additional time

before the final decision in whether the permit will be renewed, abated or denied, should be taken into account to set the new permit expiration date, if any. In the event the permit is renewed with the proposed conditions of all parties, the date of expiration shall be no later than December 26, 2022, a five-year term as the regulations state.

All parties acknowledge that the application of new technology for new studies on the site is required as soon as possible to determine if seepage has reached to the Upper Basalt. The last study was 19 years ago. If seepage has reached this formation, the facility must immediately cease operation and go into closure and remediation. It is imperative that NMED personnel and/or a qualified civil engineer or soils engineer inspect the integrity of the permitted cells and determine if seepage into the adjoining property has occurred. If seepage into adjoining property has occurred, then this property should be included in the reclamation plan.

The public and this party request that for the duration of the application process before any renewal permit is issued, that S&R Septic shall be required to use the Taos Municipal Wastewater Treatment facility for all septage discharge and cease sludge discharge until the bore hole and studies are completed. This is reasonable as a condition during the application for the following reasons:

- S&R Septic's under-reporting and failure to meet its permitted conditions for the last seven years, at the very least, is shown in the Ground Water Quality Bureau's official records.
- An interpolation of the Duke modeling results for a coarse sand model indicates the effluent should have penetrated to 84'. This is close to the depth of the top of the Upper Basalt, estimated at 90-110' deep. This is the urgent reason for the new bore hole, and any future monitoring wells.

- The changed conditions and the growing development of the area surrounding the location of S&R Septic's disposal site, a fact which the EPA Guide for Septage Treatment and Disposal, September 1994, advises in considering applicable state laws and regulations.
- All of the other 12 permitted septage haulers in Taos County use the Taos Municipal Wastewater Treatment Facility except S&R Septic; Steve Rael personally agreed with the 2012 President of Stagecoach Neighborhood Association (encompassing Tune Dr.) that S&R would begin using the treatment facility as soon as it was completed.
- Open unlined septic pits allowed in 1987, and even thereafter modified by the GWQB, are outdated, permit deeper infiltration of seepage, and thus fail to meet even the standards of residential septic systems.

The public participation in the hearings expressed sufficient concerns about public health and safety to justify this new condition be made part of S&R's permit. The public submitted materials addressing GWQB's historic lack of staff and resources to sufficiently oversee the S&R facility. In addition, the applicable statute, The New Mexico Environmental Improvement Act ("EIA"), NMSA 74-1 et seq, governs this permit under the Water Quality subsection of the Act. However, the Water Quality Act is not a standalone statute, but is but one subsection of the EIA. The Secretary for the Environmental Department must also require that this facility comply with the subsections in the EIA for Air Quality, Vectors, Nuisance and all other applicable state statutory requirements. Therefore, the conclusions of both the Applicant (#65) and the Department (#54) that there is no hazard to public health or undue risk of property is not in

compliance with the Environmental Improvement Act, nor supported by any evidence offered by the Department nor the Applicant.

The Department's Conditions are not sufficient and the conditions set forth below are requested added to any permit, if the Secretary's decision is to renew the permit. It is requested the permit to continue operations at the present facility be denied and the Applicant be required to apply to the Taos Municipal Wastewater Treatment facility, and Applicant be required as a condition of the permit to comply with all of the Taos Municipal Waste Water Treatment Facility rules and regulations. This is less expensive for the Applicant than meeting all 51 conditions of the draft permit, and protects public health and safety.

Jerome B. Hansen is willing to participate personally, or through his designated agent, as suggested by the GWQB in its Finding #47, for input on the "work plan", if this occurs. It is his opinion that fewer holes drilled into the sewage cells lessens the chances of contamination of the aquifer, and that geophysical testing is preferable and would enhance the accuracy of the examination of the seepage.

PROPOSED FINDINGS OF FACT

1. The S&R Septic sewage disposal cells are located east of Tune Drive. North of US 64 West.
2. Under the Department's permits, S&R was allowed to discharge from 1987-1990 12,000 gallons of septage per day, for 13,140,000 gallons,
3. 1990 to 1999, the permit allowed septage discharge of 20,000 gallons per day, or 65,700,000 gallons.

4. 1999 to the present allowed to discharge 10,000 gallons per day, or 73,000,000 gallons, for a total permitted discharge of **151,814,000** gallons in the period from 1987 to the present (NMED Exh.1, pgs. 3-5)

Hansen testimony #5-#27 (Vol. 1, pgs. 12 to 22):

5. The cells cover about 4 acres.
6. S&R reports filed years later show discharge of only 500,000 gallons of effluent and 50,000 gallons of sludge per year into the cells for a total of 16,000,000 gallons of effluent and 1.6 million gallons of sludge over 32 years.
7. From 1987 to at least 1997, the cells were operated as sewage lagoons, and their designation was changed to septic disposal cells sometime between 1997 to 2005.
8. In 1987, when the lagoons were first permitted, the site was remote to any homes or businesses.
9. By 2019 there are 90+ homes and businesses in the area which all depend on the Shallow Aquifer for water
10. The closest water well is RG-78139 which is about 1140' to the southeast of the southern boundary of the cells. The well is mis-located on the State Engineer's map.
11. The geologic section in RG-78139 from the top down consists of 100' of alluvium at the surface, 100' of Upper Servilleta Basalt, 70' of gravel and 230' of Middle Servilleta Basalt.
12. The depth to water in this well is 500 feet. In other wells near the cells, the depth to water is less than 500'.

13. Basalt can be an extremely permeable rock. The transit time of the effluent through geologic section may be fast, because two-thirds of the total thickness of rocks above the water table are basalt.
14. In 2000 Duke Engineering and Services mathematically modeled the penetration of effluent in the alluvium over time with varying types of sediment (e.g. clay silt, sand, coarse sand). The data for their models was derived from drill hole data in the cells. An interpolation of the Duke modeling results for a coarse sand model indicates the effluent should have penetrated to 84'. This is close to the depth of the top of the Upper Basalt, estimated at 90-110' deep.
15. The S&R technical team has largely discounted the infiltration rates of the Duke study. They contend that evaporation and transpiration from native weeds are the important factors in keeping the effluent from reaching the top of the Upper Basalt.
16. Despite past determinations by NMED personnel that these unlined cells are primarily evaporative, there is no mention of evaporation in the permit and there are no stipulations in the permit regarding standards to be met or practices to be done for optimal evaporation.
17. Despite the fact that the weeds in the cells are apparently integral to the functioning of the system, the permit requires that S&R clean the weeds out of the cells.
18. The cells are within the Las Cordovas Fault Zone. The surface trace of one nearby fault, which is about 50-75' wide, is permeable, and cuts the entire geologic section, including the alluvium. Faults like this offer direct permeable pathways to the water table. A site-specific study of faulting has never been done; therefore, the risk to contamination of the groundwater via faults has never been evaluated.

19. A Google Earth image (GEI) taken in 1997 of the sewage lagoons shows that there was a hydraulic connection between two sewage lagoons that lie across the central berm/road access from each other. The berms are not a water-tight barrier to the movement of effluent.
20. In the 2009 GEI, a dark area appeared on the adjacent property when the sagebrush was bladed for an auto salvage yard. The dark color of the area, and the fact that cars were parked to avoid the area suggests that the soil was damp. The dark area persists in all subsequent images, and got larger in size with time. Cars continued to be parked to avoid the area in all subsequent Google Earth images.
21. The 2013 GEI shows that lush green vegetation, similar to that in the cells, was growing in this area adjacent to the cells and outside the berm. The lush green nature of the vegetation suggests that the area has been fertilized by nutrients supplied by effluent.
22. During testimony, Mr. Domenici posited that this dark area is part of the storm water management plan of the auto salvage yard. There is no evidence to support the lawyer's statement.
23. The small arroyo on which the cells were built only extends about 1000 feet upstream beyond the cells (see slide 4 of Hansen evidence), and the catchment area for storm water above the cells is only 20-25 acres. It seems implausible that precipitation over these 20-25 acres could supply enough storm water, after infiltration and evapotranspiration, to keep this dark area perpetually damp with lush vegetation, as the GEIs indicate. The only other water source in the area is effluent from the cells.
24. Regardless of the source of the water, the ground surface of the dark area on adjoining property northeast of cell 4 appears to have subsided to become the local low spot where

any surface water (effluent and/or storm water) would flow toward, accumulate and sink into the ground. The area of this low spot is 200 sq. Ft.

25. Because effluent and/or storm water is preferentially funneled into this low, small area, it is likely that this is the area of deepest effluent penetration also.
26. A proposal to test the maximum depth of fluid penetration by coring one hole in the cells to the top of the Upper Basalt was made by NMED. The optimal location for this borehole would be in the middle of the low area on the adjoining property. Although it might be difficult or impossible to move a rig into this location, the depth to effluent here might be determined by a geophysical survey.
27. If a borehole location on adjoining property is impossible, the next best location to test the maximum penetration of effluent would be in the extreme eastern part of cell 4. Tests for nitrogen species, chloride concentration and TDS would be made on the core to determine the maximum depth of effluent.

Snyder testimony:

28. Jay Snyder, S&R's expert, stated in his testimony that if leachate were found to have penetrated at 150 feet (i.e. into the gravels below the Upper Basalt), the facility would go into closure. (Vol 1. P.92. lls.15-17). His testimony was that it was necessary to find the depth of infiltration, as "this facility has been active long enough." Vol. 1 p. 92, l.25.)
29. Geophysical lines offer a non-invasive solution to this problem, and would lessen the cost to S&R Septic. (Hansen, Vol 1., pg. 30, l.4-5)
30. S&R's expert, Jay Snyder's testimony was limited to Conditions 21 and 22 of the draft permit, which only addressed the possible effects on ground water from seepage. This is

to be determined by bore well drilling. (Vol 1. Page 145, lls. 17-23.) Snyder testified he did not visit the site personally at any time.

31. Snyder testified he did not personally visit the discharge site. He is not a toxicologist and could not provide testimony as an expert or as an individual on what are adequate treatment and disposal systems to protect public health and the environment from septage which harbors disease-causing viruses, bacteria and parasites. (Vol. 1, P. 146.) He also could not detect the smell if he didn't visit the site.
32. Snyder was not familiar with the EPA Guide to Septage Treatment and Disposal which is a guide for states, municipalities, counties and individuals responsible for the handling of septage. (Vol. 1, p. 145)
33. Mary Lane Leslie addressed the applicability of the New Mexico Environmental Improvement Act to the effects on public health and safety of a renewal of the S&R Septage permit and the disposal of raw human excrement into open unlined pits in close proximity to homes and businesses. (Vol. 1. Pg. 146)
34. Residences are required by law to have permitted, inspected, regularly upgraded ENCLOSED (emphasis added) septic systems, yet S&R Septic's permit allows it to pump raw sewage from the enclosed systems and then dump the contents in the open unlined pits with minimal and largely undocumented lime treatment. (Vol. 1, pg. 184)
35. The Department's official records show numerous violations by S&R of its repeated failure to file the reports and meet conditions of each of the S&R permits. (Vol.1, pgs. 186-188)

36. The government's duty to protect the safety and health of the public can be best served by adding a condition that S&R's septage discharge shall be done only at the Taos Municipal Wastewater Treatment Facility. (Vol. 1. Pg. 185)
37. Norbert Mondragon and Doug Daubert, nearby property owners, both testified that they each can smell from their locations the sewage from the S&R disposal site.
38. Dion Smith testified regarding the threat from airborne pathogens, bacteria and viruses as found in the research he provided and filed into the records of this matter.
39. Doug Daubert expressed dismay that the original drilling program of five boreholes proposed by NMED had been compromised to one bore hole. Further noted, the data collected is from only one vertical line, and a comprehensive areal evaluation of the penetration depth of effluent will not be done per the draft permit conditions. A comprehensive areal evaluation is requested.
40. According to the Taos Valley Regional Wastewater Treatment and Reclamation Facility website, "Average daily flows are currently at approximately 1.2 MGD, current capacity is 2.0 MGD." (MGD is millions of gallons per day.)
41. Mr. Daubert testified that he had "personally visited the treatment facility on October 19th and found the facility to be state of the art."
42. Ms. Rodin testified that the treatment facility will permit "10,000 gallons of septic per hauler per day", slightly more than S&R is currently permitted to discharge to the cells.
43. There is an unused capacity of 800,000 gallons of sewage per day, far more than enough to handle S&R's volume of discharge.

PROPOSED CONCLUSIONS OF LAW

44. Under New Mexico statute and regulations, the GWQB issues septage hauler discharge permits and review conditions for renewal in the context of groundwater quality.
45. The authority of the GWQB is overseen by and can be overridden by the New Mexico Environmental Act.
46. This act gives the Secretary for the Environmental Department final review and decision making in these septage hauler permits.
47. The Secretary has the authority, as part of the final determination of renewal of S&R's permit, to review all facts and circumstances in the record.
48. This review includes the GWQB's historical review of S&R's permits, whether conditions of the permits were met, current physical surroundings, conditions and developments, whether the Department's proposed permit meets current safety standards to protect human safety and health from vectors, bacteria and viruses, the nuisance odors from these open sewage pits, the efficacy and safety to the groundwater and aquifer of the proposed plan to determine the level of leachate, and whether the operation of the septage disposal site is subject to a maximum renewal of five years beginning the last date of the expired permit, and all other factors that affect the renewal.
49. Based on all of the record, the statutes and the regulations, a condition should be added to the permit that the permittee is required to discharge the septage only at the Taos Municipal Wastewater Treatment facility in Taos County, New Mexico, until further notice by the Secretary of the Environmental Department.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on December 1, 2019, as extended to December 2, 2019, by operation of law, a copy of the Proposed Findings of Fact and Conclusions of Law was sent via electronic mail to the following parties of record and filed with the New Mexico Environment Department:

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