



July 17, 2007

John E. Kieling, Project Manager
State of New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: KAFB draft Permit
Public Notice Number 07-03
EPA ID No. NM9570024423

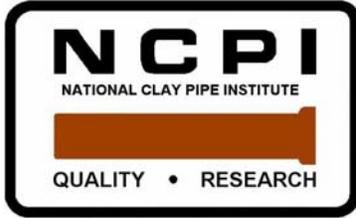
Dear Mr. Kieling:

Please accept the following comments on the subject Draft Hazardous Waste Permit. By your "Notice of Extension of Public Comment Period and Opportunity to Request a Public Hearing on a Draft Hazardous Waste Permit for Kirtland Air Force Base" the comment period has been extended specifically for Paragraph 5.2.4 *Sanitary Sewer Line*. The following comments relate specifically to the subject sewer line.

In accordance with our comments of June 15, 2007, we believe the Draft Permit requirement to relocate the sewer is counterproductive to groundwater protection and the proper approach is to monitor the pipe and make repairs if any are needed.

We offer the following additional comments:

1. The Water Utility Authority commits to regularly inspect the sewer line and make repairs to identified defects that may cause leakage.
2. The sewer line does not contact the landfill. This is because the landfill was removed during construction within the sewer pipe trench and the trench was replaced with clean fill.
3. The sewer system and the system performance are regulated under the Clean Water Act through EPA Region 6.
4. We appreciated the opportunity on July 12, 2007 to hear the NMED presentation to the Water Quality Protection Advisory Board. It was helpful to finally hear a discussion of the reasons for NMED's position. We continue to welcome and request further discussion with NMED. A compliance schedule may be a part of these further discussions.
5. We request the opportunity to review and make copies of the various documents acquired by NMED that support the requirement to move the sewer. We specifically request any engineering studies acquired by NMED.
6. We will be pleased to assist in the relocation of the sewer if the NMED funds this work.



National Clay Pipe Institute
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June 14, 2007

Mr. Mark Holstad
City of Albuquerque
Albuquerque, New Mexico

Re: KAFB Landfill (LF-002)

Mr. Holstad,

Thank you for allowing me to comment on the Tijeras Sewer Interceptor at KAFB. I will be commenting on videos I have reviewed and the report provided by CH2MHill on the condition and potential longevity and performance of the line that is in place.

Video Analysis

Detailed review of the video provided for manhole runs 11 through 17 gave me only one indication that is of any concern. In the video of the run from manhole 12 to manhole 11 there was an interesting white deposit at the crown of the pipe at 177.3 ft. as indicated in the display. This is really a very minor spot and not of any real consequence to the performance of the system especially since it is not within the boundary of the landfill. The line is in excellent condition.

CH2MHill Report

I was impressed by the thorough report provided by CH2MHill. Many potential concerns were raised and addressed. I found their calculations to be conservative but accurate. I would like to expand just a little on the nature and characteristics of Vitrified Clay Pipe to alleviate any concerns related to this line and its continued performance.

The general concerns I was able to identify are listed below;

Longevity and durability of Vitrified Clay Pipe,
Joint performance and integrity, and
Potential Structural failure.

Longevity and Durability

The concern of the installed clay pipe being near the end of its design life is not accurate. Vitrified Clay Pipe is one of the only materials that have been used for over 4000 years in civil engineering. It has been installed in the United States for over 150 years. Systems over 100 years old are in service in municipalities across the country. The Army Corp of Engineers stated it this way;

“Clay Pipe is perhaps the most inert of the common pipe materials in terms of corrosion, and it is very resistant to abrasion. A 100-year service life may be assumed for most clay pipe installations.”

From “Life Cycle Cost for Drainage Structures”, US Army Corps of Engineers.

Vitrified Clay Pipe was given the longest life cycle of all the materials discussed in this report. The Canadian National Research Council's Institute for Research in Construction (**IRC**), recently stated that the service life for Vitrified Clay Pipe was 130 years. Clay Pipe was also the highest rated material in this study.

Joint Performance and Integrity

Clay Pipe joints have been designed not to leak. ASTM standard C 425 requires that the joint not leak in factory testing. This joint design and performance criteria have been used since 1965. Since this system was installed in 1977, the current ASTM C 425 Standard would have applied to this line. Based on the videos that I have reviewed, there appears to be no leaking at the joints and no bedding migration into the pipe. I will send a copy of a recent report by the University of Houston that discusses the performance of modern clay pipe joints. This report is based on the same joints used on this system and found that this type of joint does not leak.

Structural Failure Modes

Clay Pipe is a rigid conduit. As such, cracking is the primary failure mode. Clay pipe will fail in tension not typically compression. As a result, cracks will occur in the crown first then the invert and finally at the springline of the pipe. It would be extremely unlikely that the invert of a pipe would break below the waterline without

also seeing visible distress at the crown. In all of the testing and analysis that NCPI has done over the years, the crown is the first area of the pipe to show a crack. In my seven years with the industry and after reviewing all the research on failure modes done in the last 20 years a crack in the invert would be proceeded by a crack in the crown. The videos showed no evidence of any breakage in the crown and as a result, experience dictates there are no cracks in the invert.

Clay Pipe has and will continue to perform for well beyond 100 years. The line I saw was already thirty years old and in excellent condition. Any defects that where the result of construction or foundation/bedding issues typically become evident during the first two years as the soils completely consolidate. We are well past that threshold with this system. There is no reason to expect that the work done above this line will compromise the integrity of the system.

Thank you so much for including me in this discussion. If I can be of any further assistance, please call.

Sincerely,

A handwritten signature in black ink that reads "Michael VanDine". The signature is written in a cursive style and is positioned to the left of a vertical red line.

Michael VanDine, PE
President
National Clay Pipe Institute
Lake Geneva, Wisconsin
262-248-9094

We look forward to working with you in protecting the environment.

Sincerely,

A handwritten signature in black ink that reads "Douglas S. Dailey". The signature is written in a cursive, flowing style.

Douglas S. Dailey, P.E.
Wastewater Utilities Division

cc: Roy G. Robinson P.E., General Manager, ABCWUA
Mark S. Sanchez, Executive Director, ABCWUA