

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES  
MEMORANDUM

DATE: December 12, 1994  
TO: Regional Directors  
THROUGH: Edwin D. Knight, Director, WPCP  
FROM: Randy Clarkson, P.E., Engineering Section Chief, WPCP  
SUBJECT: Revision to Sewer Extension Review Process

The plan as outlined in the attached October 6, 1994 memo is to be implemented on January 1, 1995.

Two e-mail comments have been received on the October 6 memo I sent on revisions to sewer extension review procedures.

One comment indicated that they normally meet the two week review time frame anyway but realize some other regions haven't been able to and that some action is needed. Concern about "poorly designed sewer extensions" was expressed. They supported the details of the proposed plan if it is necessary to proceed with a streamlined review process.

The second comment requested that they be allowed to do a detailed review if they can meet the two week time frame. They also indicated no problems with the details of the proposed plan.

As we have agreed to adopt the revised sewer extension review process if no major barriers develop, we should proceed with it at this time. Although the two comments received suggested a reduced review time frame could be achieved for a full review, continued concern about the Regional Office's Water Pollution Control workload has been expressed. Therefore, this opportunity to streamline work needs to be pursued.

Copies of the October 6 memo with the paragraph to be included in the construction permit approval letter and the new permit conditions is attached. The two week time frame for review will be effective on January 1, 1995. It is up to each regional director to determine if any full technical reviews will be conducted.

EDK:rcf

Attachments

c: Todd Crawford

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

MEMORANDUM

DATE: October 6, 1994  
TO: Regional Directors  
FROM: Randy Clarkson, P.E., Engineering Section Chief, WPCP  
SUBJECT: Revision to Sewer Extension Review Procedures

We have agreed to implement a revised approach to review of sewer extensions. As I understand the agreement we are to develop a review procedure that will:

1. Verify that the plans and specifications have been prepared and sealed by a professional engineer.
2. Limit most gravity sewer extension reviews to a check of downstream capacity.
3. Include in the approval of the sewer extension instructions regarding separation from water mains and that testing of the completed project is to be required.
4. Place a high priority on these streamlined reviews by setting a two-week turnaround deadline for staff.

Several things are needed to implement this change. This includes a definition of the gravity sewer extensions to be included in the streamlined review process and language to be included in the permit approvals requiring testing of the completed project.

I propose that we make the definition as simple as possible. One way to do this is to limit the use of the streamlined review process to collection sewers and not interceptor sewers. The reason is that the minimum pipe size criteria in the rules usually controls the size of sewers for collection sewers and hydraulic capacity controls the size of interceptor sewers. However, the definition must be simplified from those used in the old EPA grant program days. One way to do this is to establish that all 8-inch and smaller sewers will be classified as collectors for this

Regional Directors  
September 30, 1994  
Page Two

purpose. My impression is that this will include most gravity sewer extensions received. This should allow the staff to still review most applications where the hydraulic capacity of the application is of concern as well as the downstream hydraulic capacity, which will continue to be a review item on all applications.

The separation and testing requirements that are in the regulations should also be included in the approval as a reminder to the owner and consultant. I believe that it is imperative that the contractor realize that the project will be tested, especially for tightness when completed. The following language is proposed for inclusion in the approval letter:

Verification of compliance with 10 CSR 20-8.120, Design of Sewers, Sections (6)(G)5. Deflection Test, when required by the rule; (6)(H)2. Leakage Tests, both sewer line and manholes; and (11) Protection of Water Supplies will be required before authorization will be granted to place the facilities to be constructed under this construction permit into service. See the attached permit conditions.

We would like to finalize this revised approval for review of sewer extensions by November 15, 1994. Please review the above carefully and advise of any comments or your concurrence.

RC:lsm

Attachment

c: Todd Crawford  
Dan Schuette

## PERMIT CONDITIONS

The owners or operators of sanitary sewer systems or extensions for which construction permits were issued shall apply for a letter of authorization for operation, in accordance with Department of Natural Resources Rule 10 CSR 20-6.010(B), certifying that the collection sewers have been built in accordance with the approved plans and specifications or with "as built" plans and specifications, submitted with the certification. The certification shall state that the "as built" plans and specifications conform to the requirements contained in 10 CSR 20-8.110 through 10 CSR 20-8.220 including the following important requirements for acceptance testing and protection of water supplies. The system or extension then shall be considered as a part of the treatment facility to which it is tributary for permit purposes.

1. In accordance with 10 CSR 20-8.120(6)(G) deflection tests shall be performed on all flexible pipe.
  - A. The test shall run not less than 30 days after final backfill has been placed. No pipe shall extend a deflection of 5%. If a rigid ball or mandrel is used, it shall have a diameter equal to 95% of the inside diameter of the pipe and mechanical pulling devices shall not be used.
2. In accordance with 10 CSR 20-8.120(6)(H) leakage tests, including water or low-pressure air testing, shall be specified. The testing method selected should take into consideration the range in groundwater elevations projected and the situation during the test.
  - A. The leakage outward or inward (exfiltration or infiltration) shall not exceed 200 gallons of water per inch of pipe diameter per mile per day or 0.19 cubic meters per centimeter of pipe diameter per kilometer per day for any section of the system. A test shall be performed with a minimum positive head of 2 feet or 0.61 meters. For the purpose of leakage tests, manholes shall be considered pipe of equivalent diameter and shall be tested by an appropriate test method.
  - B. The low-pressure air test shall conform to the testing procedures described in ASTM F1417-92, entitled *Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air*.
3. In accordance with 10 CSR 20-8.120(11) there shall be no physical connections between a public or private potable water supply system and a sewer or appurtenance thereto which would permit the passage of any sewage or polluted water into the potable supply.
  - A. Sewers in relation to water works structures shall meet the requirements of 10 CSR 60-2.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
  - B. Sewer mains shall be at least 10 feet or 3 meters horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In case where it is not practical to maintain a 10 separation, the department may allow deviation on a case-by-case basis, if supported by data from the design engineer and provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the sewer at an elevation that the bottom of the water main is at least 18 inches or 46 centimeters above the top of the sewer.
  - C. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches or 46 centimeters between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. When a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.
  - D. When it is impossible to obtain proper horizontal and vertical separation, the sewer shall be designed and constructed equal to water pipe and shall be pressure tested to assure watertightness prior to backfilling.