



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

URANIUM RECOVERY FIELD OFFICE  
BOX 25325  
DENVER, COLORADO 80225

OCT 16 1985

WM Record File

WM Project 39

Docket No. \_\_\_\_\_

PDR ☒

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MEMORANDUM FOR:

Leo B. Higginbotham, Chief  
Low-Level Waste and Uranium Recovery Projects Branch  
Division of Waste Management

CC: Guagnoli;  
Sollenberger

FROM:

Edward F. Hawkins, Chief  
Licensing Branch 1  
Uranium Recovery Field Office, Region IV

SUBJECT:

URFO COMMENTS ON THE UMTRA PROJECT SURVEILLANCE  
AND MAINTENANCE PLAN

As requested, the URFO staff has reviewed the UMTRA Project Surveillance and Maintenance Plan, and our comments are attached. If there are questions regarding these comments, please contact Sandra L. Wastler of my staff at FTS 236-2811.

*Sandra L. Wastler, for*

Edward F. Hawkins, Chief  
Licensing Branch 1  
Uranium Recovery Field Office  
Region IV

Attachment: As stated

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PDR WASTE  
WM-39 PDR

URFO COMMENTS ON THE  
PROJECT SURVEILLANCE AND MAINTENANCE PLAN

1. Page 25, Section 2.8, Line 10: Typographical error on "deletrious."
2. Page 25, Section 2.8: (a) Establishment of a settlement plate in a control location (one not influenced by current or future construction activities) is necessary in order to accurately assess disposal site settlement. The elevations of the control location and disposal site settlement plates should be referred to Geodetic datum.  
  
(b) All plates must be constructed of noncorrosive and nondegradeable material, and  
  
(c) All settlement plates must be installed at a depth that will not be affected by the action of frost for the design life of the site. In other words, the plates should be installed below the average long-term frost depth.
3. Page 30, Section 3.3.1(b): It is not clear if the chief inspector will visit each disposal site each inspection year. If the chief inspector will not visit each disposal site each inspection year, then the chief inspector should accompany each assistant inspector on a surveillance and maintenance inspection at least once each inspection year.
4. Page 55, Section 4.2, Paragraph 5: The slug test as described for conducting hydraulic characterization of an aquifer is very limited in application.

The slug and/or volume of injected fluid acts as an instantaneous vertical line source or line sink, and in the case of a confined aquifer, provides only estimates of hydraulic characteristics within a small area surrounding the well itself.

In the case of an unconfined aquifer, the slug test provides even less reliable estimates of hydraulic characteristics due to the type(s) of materials encountered in the vicinity of the well bore and the effective radius of the slug test. This can lead to misinterpretation of field data.

The slug test described will only provide limited data on specific wells not on an aquifer characterization study, and indiscriminate use of the results can lead to erroneous conclusions.

It is recommended that pump test(s) be used to analyze the hydraulic properties of an aquifer. The pump test(s) can be either drawdown and/or recovery type. The drawdown and/or recovery type pump test(s) can be applied to both confined and unconfined aquifers, and determinations can be made for hydraulic conductivity, transmissivity, boundary conditions, effective porosity, pore velocity and potential capacity.

Methodologies and examples for pump tests can be found in the following list of references:

Methods of Determining Permeability, Transmissibility and Drawdown, U.S. Geological Survey Water-Supply Paper 1536-I.

Ground Water Manual, U.S.D.O.I., Water and Power Resources Service.

Applied Hydrogeology, Fetter.

Ground Water, Freeze and Cherry.

Ground Water and Wells, Johnson Div., U.O.P., St. Paul, Minnesota.

Water Supply Engineering Design, Al-Layla, Ahad, and Middlebrooks.

Applied Hydrology, Chow.

Ground Water Hydrology and Hydraulics, McWhorter and Sunada.