



Department of Energy
 Albuquerque Operations Office
 Waste Isolation Pilot Plant Project Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221

4/2/85
 DX

File AGOR 31-6

DR CHATMAN

RECEIVED

APR 1 1985

Mr. Robert H. Neill, Director
 Environmental Evaluation Group
 State of New Mexico
 P.O. Box 968
 Santa Fe, NM 87504-0968

Dear Mr. Neill:

In accordance with paragraph 2 (page 11) of the Modification to the Working Agreement for Consultation and Cooperation we are enclosing information on the reports which will be issued on the additional geotechnical studies at the WIPP site listed at Appendix I of the Modification. Pursuant to the Modification, this information will be incorporated as Appendix II to the Working Agreement. The projected dates shown on the enclosure are the approximate dates that these reports will be available to the State in the form of pre-publication copies.

The reports shown on the enclosure are the reports which will directly provide information to resolve the issues reflected as the State's concerns at Appendix I. Some information which relates to the issues in the additional geotechnical studies may appear in reports on other topics. Information developed from all geotechnical studies completed by the WIPP Project Office that is pertinent to the Appendix I issues will be included in the summary report to be provided the State by January 1, 1988.

Detailed descriptions of other present and anticipated WIPP-project geotechnical studies are in the FY85 Program Plan for WIPP that was prepared by Sandia, and which was recently transmitted to EEG. We note that the State had input into the design of many of these other studies. The studies described in the Program Plan are subject to changes in anticipated funding and by their nature are inherently subject to modification to the planned program.

RECEIVED

APR - 1 1985

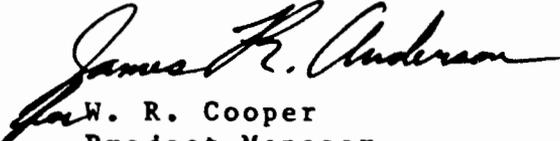
ENVIRONMENTAL
 EVALUATION GROUP

850401



Please contact me if you have questions on this matter.

Sincerely,


W. R. Cooper
Project Manager

WIPP:AEH 85:077

Enclosures

cc:
C&C File
Dick Coleman, TSC
Peter Speigler, EEG
Wendell Weart, SNL
Al Lappin, SNL
Roy McKinney, TSC

APPENDIX II
TO
WORKING AGREEMENT

Reports to be Issued by DOE on
the Additional Geotechnical Studies

Study 1a

1. Projected Title and Availability: "Technical Report for DOE-2" (3/86).

Description: This report will describe the drilling history, general stratigraphy, structural extent of the DOE-2 depression, and results of hydrologic testing of DOE-2. The hydrologic test data will be used to: 1) estimate the permeability of distinct zones within the Rustler, 2) determine if any appreciable permeability is present in the Salado or the Castile, 3) determine hydraulic properties of the upper portion of the Bell Canyon Formation (unless pressurized brine is encountered in the Castile). Drilling, coring, and core descriptions will be used to determine structural elevation of units and assess whether or not there is evidence of evaporite dissolution.

2. Projected Title and Availability: "Geologic Structures within the Salado and Castile Formations in Hole DOE-2" (5/86).

Description: The major objective of this report will be to describe the structures and, if possible, determine their origin. This will include an analysis of drilling, coring, and core description data to: 1) determine the structural extent the depression of the marker beds, 2) assess whether or not evaporite dissolution has occurred within the Salado and/or Castile Formations, and 3) describe any significant deformation features encountered within the Salado and/or Castile Formations.

Study 1b

Projected Title and Availability: "A Compilation of Hydrologic Data from the Salado and Castile Formations at the WIPP Project" (3/86).

Description: This report will compile hydrologic (Artesian head) data from the Salado and Castile Formations from holes drilled for the WIPP Project. This will include AEC-7, WIPP-12, Cabin Baby, and previously unpublished U.S.G. data. This report will also include data from DOE-2 (see Study 1a).

Study 2

1. Projected Title and Availability: "Hydrologic Data Reports" (6/85 - 6/87).

Description: This is a series of five reports that will present existing hydrologic data and to report future data in a timely manner. The first two reports will be used to publish the existing hydrologic data. Subsequent reports will present data as it becomes available. For the most part, these reports will contain "raw" data, without interpretation, but with sufficient annotation to allow an interpretation to be made. This will include data from hydrologic testing, tracer studies, and synoptic pressure surveys.

2. Projected Titles and Availability:

"Multi-Pad and Single-Pad Aquifer Tests of the Culebra Dolomite at Hydropad H-3" (6/86).

"Hydraulic Testing of the Culebra Dolomite at H-11" (8/86).

"Single-Well Hydraulic Testing of the Rustler Water-Bearing Zone" (3/87).

Description: As the hydrologic test data are analyzed and interpreted, a series of interpretative reports will be prepared. These reports will include complete annotated listing of the test data, descriptions of the tested wells and instrumentation, testing histories, full explanation and documentation of the analysis techniques employed, analysis and/or numerical modeling of results, and interpretation of results. Reports will be prepared for multi-well testing on individual pads and for the large-scale pumping test(s). Single-well testing will be described in a separate report.

Study 3

1. Projected Title and Availability: "Hydrologic Data Report" (6/85 - 6/87).

Description: The data from all tracer tests conducted to date will be reported in the first "Hydrologic Data Report." These data will be "raw," with no interpretation provided. Data from future tracer testing will be presented in the appropriate hydrologic data reports.

2. Projected Titles and Availability:

"Convergent-Flow Tracer Tests at Hydropad H-3" (1/87).

"Convergent-Flow Tracer Tests at Hydropad H-4" (10/86).

"Interim Sorbing Tracer Test Report" (1/88).

Description: These reports will include complete annotated listings of the test data, descriptions of the wells and instrumentation configurations, discussions of the chemical composition of the tracers used, testing histories, full documentation and explanation of the analysis technique employed, analysis and modeling of results, and

interpretation of those results. Because a sorbing tracer test may take approximately ten years to complete, only an interim report will be provided by January 1, 1988.

Study 4

1. Projected Title and Availability: "Technical Report on Analysis of Water Samples from the Rustler Aquifers at the WIPP Site" (4/87).

Description: This report will discuss results of the groundwater sampling program with respect to refined site characterization. This will include a discussion of the development of sampling criteria, procedures, and analytical methods. Basic water quality data for each well will be presented along with a discussion of the evaluation, selection, and application of isotopic and other geochemical parameters.

2. Projected title and availability: "Hydrogeochemical Facies in the Rustler Formation at the WIPP" (1/88).

Description: This report will compare the solutes with host rock mineralogies at and between various well sites. This report will not apply an interpretative-origin model at each site, but will attempt to delineate hydrochemical facies in the Rustler Formation. An additional comparison of these facies with flow patterns derived solely from physical hydrology will be made for purposes of examining internal consistency.

Study 5

Projected Title and Availability: "A Regional Water Balance for the WIPP Site and Surrounding Area"; SAND84-2233 (3/85).

Description: This report contains discussions and compilations of available data concerning precipitation, evaporation, water-table elevations,

storage in lakes, irrigation, municipal use, potash refining, oil-field flooding, and dumping for the Pecos River drainage basin between Artesia and the Texas/New Mexico state line. This compilation includes detailed discussions of the sources of data, data uncertainties, and the ways in which the type of data contribute to the calculation of a water budget in the vicinity of the WIPP.

Study 6

Projected Title and Availability: "Groundwater Modeling Study of the Rustler Aquifers" (1/88).

Description: The modeling and interpretation in this report will deal with relatively "undisturbed" hydrologic conditions and will involve only transport of "naturally occurring" solutes. It will be an integral part of activities aimed at a refined site characterization of the WIPP site. The computer modeling will incorporate interpretations of Rustler stable-isotope and geochemical data.

Study 7

1. Projected Title and Availability: "Dissolution of Halite and Gypsum, and Hydration of Anhydrite to Gypsum, Rustler Formation, in the Vicinity of the Waste Isolation Pilot Plant, Southeastern New Mexico"; U.S. Geol. Survey Open - File Report (12/85).

Description: This report will present an interpretation of evaporite dissolution within the Rustler in the vicinity of the WIPP site based on correlation of geophysical logs. It will include a description of lateral variability and evaporite dissolution within the Rustler Formation, based on detailed correlation of a small number of geophysical logs from holes at and near the WIPP site.

2. Projected Title and Availability: "Facies Variability and/or Evaporite Dissolution Within the Rustler Formation in the Vicinity of the WIPP Site, Southeastern New Mexico" (7/87).

Description: This report will present the overall mineralogy and a detailed lateral correlation within the Rustler Formation in the vicinity of the WIPP. Included will be a detailed investigation of Rustler core from holes at and near the WIPP, as well as from at least one hole within Nash Draw. Emphasis will be placed on interpretation of sedimentation versus dissolution as the origin of lateral variability within the Rustler, especially relative to clay-rich zones often interpreted as dissolution residues. The work will include detailed lateral correlations within the Rustler. The work will also include a general petrographic and mineralogical description of the Rustler Formation as a whole.

Study 8

Projected Title and Availability: "Evaluation of the TEM Method for Identification of Castile Brine Occurrences near the WIPP Site, Southeastern New Mexico" (3/86).

Description: This report will describe the trial field surveys using TEM. A comparison between CSAMT and TEM methods and results within the survey area will be included, as will a correlation of MT methods to drillhole data concerning Castile brine occurrences. On the basis of these geophysical field trials, DOE will consult with EEG to decide if a geophysical method shows significant promise to conduct a survey over the WIPP repository to identify and delineate possible occurrences of brine in the Castile Formation.

Study 9

Projected Title and Availability: "Assessment of Near-Surface Dissolution in the Vicinity of the Waste Isolation Pilot Plant"; SAND84-7178 (2/85).

Description: This report presents the results of a field study of the distribution of near-surface dissolution phenomena in the WIPP site and Nash Draw area. The structures possibly resulting from dissolution are considered in terms of their relationships with the Gatuna Formation and the Mescalero Caliche. The approximate age and magnitude of past dissolution events are documented. The report includes a description and discussion of the field investigation of possible alluvial dolines in the vicinity of the WIPP site.

Study 10

Projected Title and Availability: "Marker Bed 139: A Study of Drillcore from a Systematic Array" (2/85).

Description: This report describes the macroscopic internal structure and mineral composition of Marker Bed 139 based on core from five holes drilled specifically for this purpose. The undulatory upper surface is described and sedimentary versus deformational interpretations of its origin are discussed. Fractures in the central part of the unit, which may provide local reservoirs for brine and gas, are described, and their origin is discussed in the framework of the sedimentary and erosional history of the Delaware Basin.

150t