

Permit
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**Comments on the draft
Compliance Order on Consent Between the New Mexico Environment
Department, the U.S. Department of Energy, and the University of California,
September 1, 2004**

George Rice, September 30, 2004

The proposed Compliance Order on Consent (Order)¹ contains comprehensive requirements for characterizing the occurrence of contamination at LANL. However, CCNS believes that the order can be strengthened. CCNS's recommendations are presented in the comments below.

General Comments

Public Availability

The Department should require that all data and reports required by this Order are readily available to the public. In addition to placing them in public libraries, the Respondents should post all data and reports on a public website.

Historical reports and data associated with each canyon or technical area should also be made available.

Mass and Fate of Groundwater Contaminants

For each groundwater unit affected by LANL operations (e.g., alluvial aquifer in Mortandad Canyon), the Respondents should be required to estimate the mass of each contaminant and describe the fate of the contaminants (e.g., eventual discharge area, time to reach discharge area). The description of contaminant fate should address the effects of any planned corrective measures, as well as the fate of contaminants in the absence of corrective measures. The descriptions should include an assessment of potential fast flow paths.

These estimates and descriptions should be included in the investigation reports prepared for each canyon or technical area.

Rejected Analyses and 'J' Values

The Respondents should be required to report the results of all rejected contaminant detections, whether rejected by the analytical laboratory or the Respondents. The reasons for rejecting the results should also be reported. Respondents should also be required to report all detections that fall between the method detection limit and the reporting limit ('J' values). These reporting requirements should apply to historical as well as on-going investigations.

¹ NMED, 2004a.



Tritium Analyses

Tritium is not included in any list of analytes in this Order (e.g., sections IV.A.3.f and IV.B.2.b.ii (pages 45 and 61)). Respondents should be required to analyze samples for tritium, or any other radionuclide, as a means of determining ages and providing information on flow paths. These analyses would be used to improve our understanding of the hydrologic system, not to regulate radioactive materials.

Vadose Zone Characterization

The vadose zone investigations should attempt to determine whether fast flow paths are present. Therefore, in addition to the vadose zone characterization requirements in the sections on technical area investigations (e.g., sections IV.C.1.c.iv and IV.C.2.e.iv (pages 77 and 102)), the Respondents should be required to determine the composition and age of vadose zone water. This includes water in the matrix, in fractures, and in the matrix adjacent to fractures.

Frequency of Spring Sampling

Springs discharging along the Rio Grande (table XII-5) should be sampled on a quarterly basis. Quarterly sampling would be more likely to detect contaminants that discharge intermittently rather than continuously. After several years of quarterly monitoring, the Department should determine whether to continue quarterly monitoring, or to monitor more or less frequently. Spring discharge should be estimated each time a spring is sampled.

Specific Comments

Sections IV.A.3.e.i – IV.A.e.iii (pages 41 – 43)

The Respondents should be required to store cores, rock samples, and soil samples for a minimum period of time, or until the Department gives permission to discard them.

Section IV.B.1.b.v (page 59, first paragraph)

The text states: "The combined Los Alamos and Pueblo Canyon investigation report shall not address intermediate and regional groundwater investigations ... ". This appears to be an error. If not, please explain why the groundwater investigations should not be addressed.

Section IV.C.5 (pages 131 through 137)

The Department requires an investigation of fractures at most technical areas (e.g., sections IV.C.1.c.iii and IV.C.2.c.iii (pages 75 and 91)). However, there is no such requirement for Technical Area 10. Is this an oversight? If not, please explain why a fracture investigation is not required.

VIII .B.1 (page 163)

The Department's screening levels for non-carcinogens are equal to the EPA Region VI Human Health Medium Specific Screening Levels (HHMSSLs). But, the screening levels for carcinogens are equal to ten times the HHMSSLs. The Department should either make the screening levels for carcinogens equal to the HHMSSLs, or explain why they should be higher than the HHMSSLs.

Section IX.B.2.d (page 172, paragraph 1, last sentence)

The wording of this sentence makes it seem that the Respondents should submit samples that appear to be uncontaminated, even if other samples appear to be contaminated. This is probably not the Department's intent. The sentence should be deleted or revised.

Section IX.B.2.e (page 172)

Field duplicates of soil, rock, and sediment samples should not be identified as duplicates to the analytical laboratory. They should appear to be independent samples.

Section IX.B.2.i.i (page 175)

Purge pump assemblies should be fitted with a check valve that prevents water in the pipe from flowing back into the well.

Section IX.B.2.i.ii (page 175)

Samples to be analyzed for volatile constituents should be collected using a low-flow technique.

Section IX.B.2.i.iv (page 176)

Field duplicates of groundwater samples should not be identified as duplicates to the analytical laboratory. They should appear to be independent samples.

Section IX.B.6.a (page 180)

The daily field record should include a description of any condition that may affect the validity of sample analyses.

Section X.C.3 (page 194, paragraph 5)

The Respondents should be required to investigate the composition of pre-fabricated sampling system components to ensure they will not leach or sorb contaminants. An

investigation of these systems at Pantex indicated that they were the cause of false-positive benzene and toluene analyses².

Section X.E (page 198)

Well drilling and construction logs should include a description of any condition that may affect the validity of sample analyses.

Section XI.C.12 (pages 211 and 212)

It is not clear whether the Respondents would be required to report all analytical results in the investigation reports. A table containing all analytical results should be included in the body of the report or in an appendix. If results are reported in an electronic format, the Department should require the Respondents to make them readily available to the public.

References

Gilmore, T.J., A.V. Mitroshkov, P.E. Dresel, 2002, *Laboratory Investigation into Sampling Materials Used at the Pantex Site*, Pacific Northwest National Laboratory, February 2002.

New Mexico Environment Department (NMED), 2004a, *Proposed Compliance Order on Consent between the New Mexico Environment Department, the U.S. Department of Energy, and the University of California*, September 1, 2004.

² Gilmore et al., 2002.