

**WRIGHT**

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RE: Priority Action Items to Fully Comply with DOE Audit Criteria

Dear Mark and Steve:

Based on your request, Wright Water Engineers developed the following list of priority items which, when addressed by RFP, will significantly enhance the quality of the groundwater monitoring and protection program. These items were identified as deficiencies during our evaluation of RFP's groundwater program against the audit criteria contained in the document *Performance Objectives and Criteria for Conducting DOE Environmental Audits*. Items which caused compliance with an individual criterion to be rated with a three (3) or lower or items which would provide information that is critical to understanding the nature of groundwater and contaminant movement were selected as being priorities. Not included in this listing are tasks already underway (such as the site-wide geologic, hydrogeologic and geochemical characterization reports).

Please be aware that no attempt was made to establish a priority among the tasks listed below. Also we provided conceptual-level suggestions rather than step-by-step descriptions of the specific tasks needed to accomplish each recommendation.

### PRIORITY TASKS

1. Develop a strategy to communicate the responsibilities of the Geosciences Division to other organizations within EG&G and to require information transfer and coordination for all activities that may impact groundwater quantity or quality. For example, this strategy should include a mechanism to ensure that the extensive number of programs designed to prevent groundwater contamination through source control are coordinated with the Geosciences Division. The strategy could include a Level I policy document, a one- to two-page memorandum distributed to all personnel, and a discussion of the requirements in annual training courses.
2. The *Groundwater Protection and Monitoring Program Plan* (GPMPP) should be updated to include an organizational chart that outlines the individual or position

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responsible for each element of the groundwater monitoring and protection program(s). This chart should include personnel outside the Groundwater Division who have responsibility for many of the source control programs currently being implemented.

3. Update the GPMPP to include recommendations for future program enhancements that are derived, in part, from the *Well Evaluation Report Draft* and the *Annual RCRA Monitoring Reports*. These recommendations should be accompanied by specific schedule commitments.
4. Develop a Sampling & Analysis Plan for the site-wide groundwater monitoring network. This plan should address monitoring and analytical needs to support the site-wide goals and reference relevant OU work plans for OU-specific analysis. The site-wide plan should include a discussion regarding the order in which samples are collected to ensure that all analytes are monitored at each location at least twice a year.
5. Requirements and programs should be developed that require the quarterly water level and water quality data be evaluated soon after the data are available. Quarterly groundwater monitoring data at the downgradient edges of plumes and at Indiana Street are particularly important for inclusion in this program. Similarly, it is suggested that these data be reported in the monthly State exchange meetings as soon as they are available.
6. A meeting should be held with personnel directly responsible for the laboratory Quality Assurance/Quality Control program to discuss the feasibility of specific program recommendations. These recommendations include evaluating laboratories on the basis of performance against standard blind samples, validation of less than 100% of the analytical data, and collection of Sample Data Groups to optimize field sampling and analytical efficiency.
7. All outstanding agency concerns regarding the RCRA groundwater monitoring program should be resolved and appropriate close-out correspondence should be generated. A review of recommendations presented in Annual RCRA Monitoring Reports, Notice of Violations and other agency correspondence that addressed groundwater monitoring concerns should be used to identify a comprehensive list of issues and concerns. The resolution of any issues should be documented, and a work plan should be prepared to address unresolved issues. This work plan should outline the specific work to be performed.

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8. The groundwater monitoring network at the three RCRA interim status units (the present landfill, the solar ponds and the west spray field) should be upgraded to correspond to the level of detail of the monitoring network at OU 2 (903 pad, mound and east trenches). For example, additional characterization of the weathered bedrock units including an assessment of secondary porosities should occur. This work should be coordinated with the RCRA staff and the appropriate OU managers.
9. A hydrologic/hydrogeologic mass-balance should be developed for the RFP site. This analytical mass-balance should take into account factors such as localized recharge and discharge values and localized hydraulic conductivity values and be used to verify the input parameters and results of the site-wide groundwater model.
10. Geophysical delineations of bedrock surfaces should be validated by borehole data.
11. Sufficient wells should be drilled into the underlying bedrock formation to construct a reliable site-wide potentiometric surface map and determine vertical gradients between the upper and lower hydrostratigraphic units. Specifically, the degree of connection between the upper hydrostratigraphic unit and deeper bedrock aquifers should be determined.
12. The documentation to support field tests of hydraulic conductivity, transmissivity, saturated thickness and effective porosity should be compiled, and calculations of these parameters should be reviewed and verified or corrected, if necessary. The results of this review should be published in a widely-distributed report.
13. Additional wells should be constructed in the upper hydrostratigraphic unit between the Industrial Area and Indiana Street to detect potential migration of contaminants toward the downgradient site boundary. These wells will act as a line of defense to assess water quality and potential contaminant migration upgradient from the site boundary.
14. Through publication of a policy document, the Geosciences Division should encourage OU managers to consult site-wide references in selecting well locations. The references include the recently completed *Well Evaluation Report* and more historic documents such as the *Geologic Characterization Report*.
15. A SOP should be developed which requires a thorough inspection of each well during each sampling round. The SOP should also include a mechanism to track the condition of each well by responsible personnel such that any well maintenance activities are sure to occur prior to the next quarterly monitoring.

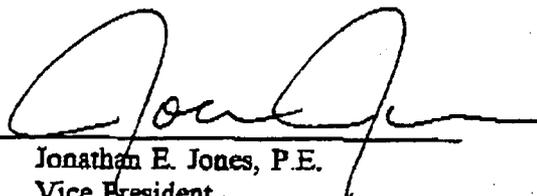
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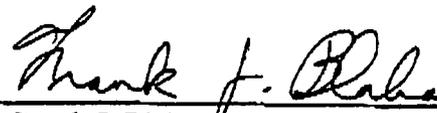
- 16. Additional characterization should occur in the Industrial Area to provide a more complete understanding of hydrogeologic conditions and contaminant distribution, including under-building contamination.

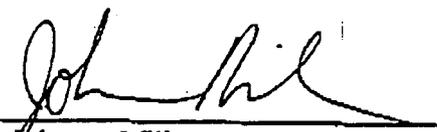
As always, we have enjoyed working with you on this project. Please let us know if we can be of further assistance.

Very truly yours,

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