GWOU ADMINISTRATIVE RECORD
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STATE OF MISSOURI Bob Holden, Governor • Stephen M. Mahfood, Director

DEPARTMENT OF NATURAL RESOURCES

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December 1, 2003

Mr. David Geiser
U.S. Department of Energy
Office of Long Term Stewardship, EM-51
1000 Independence Ave., SW
Washington, D.C. 20585

RE: Draft Record of Decision (ROD) for Final Remedial Action for the Groundwater Operable Unit (GWOU) at the Chemical Plant Area of the Weldon Spring Site, September 2003

Dear Mr. Geiser:

The Missouri Department of Natural Resources received the Draft GWOU ROD on October 1, 2003, for review and comment. We remain appreciative of the opportunity to comment and participate in this review process. The department is eager to take a plan to the public that all state and federal agencies can fully support. However, this plan must provide a high level of confidence for the people that live, work, and recreate in the area. Unfortunately, the Department of Natural Resources cannot concur with this draft ROD or the proposed remedy as presented. Although the proposed remedial action of Monitored Natural Attenuation (MNA) with institutional controls and contingencies may be acceptable if proper trigger levels and monitoring locations are set, the remedy as defined in this draft ROD lacks these details. Below are issues our department must have resolved before or concurrent with a decision on this GWOU ROD.

Safe Groundwater Remedy

The DOE has made the case in the past that due to the complex hydrological conditions, aggressive groundwater remediation is not practical at the Weldon Spring Chemical Plant site. The department also recognizes the complexity of the hydrogeologic conditions at this site. Therefore, if contaminated groundwater is left in place and we rely on MNA as a passive remedy for groundwater cleanup, trigger levels must be incorporated that give early indications of when the attenuation may not be progressing as expected. The Department of Energy (DOE), the Environmental Protection Agency (EPA), and the state could then re-evaluate the conditions before an unacceptable risk exists for the public. This same monitoring plan must provide the

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agencies and the public with data that confidently shows that the MNA remedy is actually effective and the contaminant plumes are diminishing in both size and concentration levels within reasonable time frames, or that it is not. Such a conservative plan includes careful and conservative placement of monitoring points to identify both horizontal and vertical movement of the contaminants as well as relatively discreet concentration triggers that are based on past trends or established standards. If the various plumes begin to increase in size, move in an unexpected rate, or increase rather than decrease in concentration, the responsible agencies will easily recognize that the attenuation is not progressing as expected, which allows them to look closer or re-evaluate the conditions as soon as possible before adjoining groundwater resources are impacted. The department can only support a ROD for this site that includes a conservatively outlined monitoring system framework. The details as presented are not sufficiently conservative, nor adequately protective of unaffected groundwater resources.

Binding Agreement

The state should be an official partner in the future oversight and management of the site. The state has repeatedly requested to be part of a legal agreement that identifies an appropriate mechanism to resolve issues, should they arise in the future. The DOE assured the state early in the discussions for a safe groundwater remedy that a revised three-party Federal Facilities Agreement (FFA) would be signed concurrent with the groundwater ROD. With the schedule proposed in the draft ROD, that assurance has been denied. It appears that the only agreement that DOE will now consider is a document that will be prepared after all the remediation decisions at the site have been made, which denies the department the ability to negotiate the terms of a safe monitoring plan. The department and EPA have worked hard, and together have executed a draft of a model FFA that is an acceptable compromise to both agencies. It is our understanding that the DOE has essentially refused to even review this agreement.

Long Term Stewardship

The DOE must consider and respect the long-term needs and wishes of their neighbors in St. Charles County. This good neighbor policy must apply to the Missouri Department of Conservation (MDC) as well as the general public who live, work, and recreate in the rapidly expanding St. Charles County area. Groundwater contamination has already impacted the aquifer beneath the Busch Memorial Conservation Area. Springs and lakes on MDC property, as well as the aquifer beneath this property, needs to be part of a comprehensive long-term stewardship plan that both advises, informs, and protects the public. In our specific comments we have noted several ways that DOE can improve their relationship with the adjoining property owners. DOE also currently has the opportunity to add another layer to their institutional controls by including the site on the state Registry. The department is willing to assist and work with DOE staff to expedite this process. A key component of future protectiveness includes the development and implementation of multi-layer institutional controls.

I regret that this draft ROD is unacceptable as presented because the state of Missouri is eager to move forward with safe and effective remedial action for contaminated groundwater. However, we cannot accept a plan that fails to provide reasonable action and appropriate safeguards for the public. Further, I have grave concerns over DOE's position to exclude the state of Missouri in a legally binding agreement executed concurrent with this final ROD at Weldon Spring Chemical Plant site. This concept was agreed to by DOE, EPA, and the department, early in the discussion process. I have attached specific comments for your review and incorporation as you redraft the ROD. If you have any questions about the basis, meaning or intent of any of the comments, do not hesitate to call me at 573-368-2101, or you may contact Robert Geller at 573-751-3907, immediately. Written inquires can be directed to me at P.O. Box 250, Rolla, MO 65401, or to Mr. Geller at the Hazardous Waste Program, P.O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

GEOLOGICAL SURVEY AND RESOURCE ASSESSMENT DIVISION

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c: Mr. Edward Galbraith, Director – Hazardous Waste Program
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Weldon Spring Citizens Commission

Specific Comments
Draft Record of Decision for Final Remedial Action for the Groundwater Operable Unit at the Chemical Plant Area of the Weldon Spring Site, September 2003

Comment 1) Regular fish tissue sampling and analysis taken from nearby lakes must be performed. This sampling should be implemented in order to provide the public with a clear, unambiguous picture of the safety of eating fish from these lakes. We commend the Department of Energy for including the consideration of re-instituting fish tissue analysis as a contingency response based on an exceedence of trigger concentrations in Department of Conservation water bodies. However, we do not believe that approach is as clear and direct in answering questions about fish safety as is the regular analysis of those fish.

Comment 2) The DOE must establish a method to ensure the current monitoring by the Department of Health and Senior Services of private drinking water sources surrounding the chemical plant are maintained as part of the long-term stewardship responsibilities.

Comment 3) Site Name, Location, and Description, Site Description Abstract, page 1. The extent of the Groundwater Operable Unit (GWOU) at the Chemical Plant area of the Weldon Spring Site is described in this paragraph. In addition to the contamination of Burgermeister Spring by the Chemical Plant groundwater, please include off-site contamination migration from the Chemical Plant groundwater to the Department of Defense property and the Weldon Spring Conservation Area (specifically the Southeast Drainage area) in the draft final of the GWOU ROD. This information would better explain the general description of contamination extent.

Comment 4) Section 12.2.1 Institutional Controls, page 29. The document should also state that the EPA and this department will have access to the groundwater for sampling purposes.

Comment 5) Section 12.2.2 Basis for Performance Monitoring Strategy, bullet one, page 31. The department disagrees with the statement in this bullet that Objectives One and Six are similar. In fact, they are dissimilar. Objective One is to monitor water quality for upgradient influences and Objective Six is to monitor for hydrologic stability. Objective One wells may be used for Objective Six, but the distinction between the two purposes should be clearly stated for the reader. Clarification should be provided in the draft final GWOU ROD.

Comment 6) Section 12.2.2 Basis for Performance Monitoring Strategy, bullet one, page 32. It is specifically stated in this bullet that <u>two</u> additional weathered wells will be installed to address Objective Four. The department suggests excluding the word "two" since, at this time, more than two wells may be needed to achieve this objective.

Comment 7) Section 12.2.2 Basis for Performance Monitoring Strategy, bullet two, page 32. The objective to monitor for vertical migration is necessary, however, the stated restrictions on the placement and installation of new wells is considered out of place in this document. It is important to monitor directly beneath the highest concentration areas of each plume, as well as downgradient of them, because of the downward vertical gradient of the aquifer.

Though cross-contamination is an important concern when planning and installing monitoring points, it can be avoided by careful drilling and installation practices or by alternate methods (such as horizontal drilling). The final two sentences of this objective description should be deleted because they are overly restrictive.

Comment 8) Section 12.2.2 Basis for Performance Monitoring Strategy, bullet two, page 32. The department suggests some additional language be inserted into the first three sentences of this bullet for Objective Five. The suggested phrases to be inserted are underlined below. "Objective five is to monitor for the contaminants at the only currently known points of exposure: several area springs. Current contamination concentrations at these locations are periodically higher than MCLs, but protective of human health and the environment, given current recreational land use. For one COC (uranium), the springs periodically show higher concentrations than does the groundwater at the Chemical Plant site."

Comment 9) Section 12.2.2 Basis for Performance Monitoring Strategy, paragraph one, page 32. The department suggests that the word unexpected be inserted before *upward trend* to emphasize the belief that an upward trend is not anticipated.

Comment 10) Section 12.2.2 Basis for Performance Monitoring, paragraph one, last sentence, page 32. According to the text, a second tier response (dictated by a higher concentration) will include the addition of other **existing** monitoring locations. The second tier response of additional monitoring locations should not be limited to existing wells, especially if no appropriately located wells exist.

Comment 11) Section 12.2.2 Basis for Performance Monitoring Strategy, paragraph two, page 33. According to the text, the criteria for the trigger concentrations are included in Tables 12.1 through 12.4. After reviewing these tables it is apparent that criteria is not provided for all the objectives/tiers. Criteria for each trigger concentration should be provided in the draft final GWOU ROD in a separate column for each table.

Comment 12) Figure 12.3 Locations of Wells Included in the MNA Network, page 35. Two wells, previously identified as unweathered-zone monitoring wells, MW-3024 and MW-3026, are classified as weathered-zone monitoring wells in Figure 12.3. An explanation for the reclassification should be provided in the draft final GWOU ROD.

Comment 13) Table 12.1 Design Basis for MNA Network for TCE, page 36. Objective #1 location states a well "at least 200 ft...". This is unacceptable wording. A more appropriate wording would be "200 ft or less...". This sort of wording exists throughout the tables. Please correct all occurrences.

Comment 14) Tables 12.1 through 12.4, pages 36-39. According to the text (page 33) the specific monitoring locations and the specific trigger concentrations will be defined in the RD/RA Work Plan and that these tables show the criteria for selecting these potential

monitoring locations and trigger concentrations. It is appropriate that the specific monitoring

locations and trigger concentrations are subject to refinement in the RD/RA Work Plan. The state can concur with the over-all structure of the MNA monitoring plan if it meets established EPA guidelines for MNA. This should not be construed as concurrence on any of the monitoring locations, monitoring location criteria, or trigger concentrations specified in these tables. The trigger levels proposed in this draft ROD are inadequate and do not provide an adequate level of protection for the environment. Under this draft ROD, contamination will be allowed to migrate and contaminate usable drinking water to levels well above established standards. This type of plan is unacceptable. The department believes that trigger concentrations should be based on MCLs or conservative levels based on historic values, where MCLs have already been exceeded, at compliance points near federal property boundaries. This sort of design would trigger contingencies before contamination is allowed to migrate onto other publicly owned land. The proposed trigger levels will allow contamination to pollute waters beyond DOE's control and onto Missouri citizens' lands.

Comment 15) Section 13.2.1 Chemical-Specific ARARs, Page 40. The actual MCL for uranium should be noted as 30 μg/l. An additional sentence can then be added to explain the mass to activity ratio and why the MCL is equal to approximately 20 pCi/l.

Comment 16) As noted in the cover letter, we believe there is an opportunity for DOE to provide a protective layer to the institutional controls by volunteering to be included on the state Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites. Research on this aspect has been completed and the evaluation concludes the site meets the criteria for inclusion to this process. This appears to be an opportunity for DOE to strengthen the stewardship aspect.

Comment 17) Long-term Stewardship remains a concern not only for the Groundwater Operable Unit, but also for the site in general. DOE has made significant improvement in this area from the initial draft documents. However, before all parties to the successful remediation completed so far can be satisfied, the Stewardship plan must be completed and include reliable, enforceable, and durable mechanisms to assure long-term protection to human health and the environment. Recognized, meaningful independent oversight, which can be accomplished by including the state in an amended Federal Facility Agreement, remains as a missing component in the draft Stewardship plan.

Comment 18) There are several issues on groundwater monitoring for the cell which remain, which include statistical evaluation, adequate coverage to ascertain cell performance, and other sample acquisition questions. Although these relate to the Chemical Plant close-out reports (cell monitoring), the impacts and evaluation of groundwater is a common thread to both operable units.