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WELDON SPRING SITE REMEDIAL ACTION PROJECT
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◆ FROM Fiveash, A ◆ TO McCracken, SH ◆ DATE 9/3/94

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REFERENCED DOCUMENT(S)

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ACTION ITEM TRACKING

INITIATE ACTION ITEM

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ACTION REQUIRED _____

DUE DATE _____ ACTION ITEM LOG NUMBER _____

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STATE OF MISSOURI
Mel Carnahan, Governor • Dale A. Shaw, Director
DEPARTMENT OF NATURAL RESOURCES
-- DIVISION OF ENVIRONMENTAL QUALITY --
P.O. Box 176 Jefferson City, MO 65102-0176

August 3, 1994

Mr. Steve McCracken, DOE Project Manager
Weldon Spring Site Remedial Action Project
7295 Highway 94 South
St. Charles, Missouri 63304

SUBJECT: Preliminary Evaluation of Surface Soil at the Katy Trail/Vicinity Property #9 (VP9) Area
Quarry Residuals-Reports, Studies, Sampling

Dear Mr. McCracken:

We have completed our review of the risk assessment data that was compiled for the Preliminary Evaluation of Surface Soil at the Katy Trail/Vicinity Property #9 (VP9) Area. In general, the preliminary risk assessment evaluation submitted to MDNR is not sufficient to provide a conclusive evaluation of the health risks present in vicinity property #9. However, the final risk value obtained from the DOE's calculations indicates that additional steps should be considered to minimize a recreational visitor's access to vicinity property #9 and the adjoining areas along the Katy Trail. One method to achieve restricted access would utilize posted signs which would delineate the radionuclide hazard present and also indicate to visitors that they should remain on the Katy Trail.

The soil sampling data and risk assessment calculations were reviewed by MDNR staff and the Missouri Department of Health (MDOH). After careful evaluation, we have concluded that the health risks associated with vicinity property #9 are biased low due to the inclusion of additional grid area data into the risk assessment calculations. The most conservative manner in which to assess the health risks associated with vicinity property #9 would be to evaluate soil samples from only grid areas #3, #4, and #5. This assessment would require that additional soil samples be collected by the DOE and analyzed for radionuclides and hazardous chemicals.

Based on EPA guidance, risk assessment values which fall between the defined values of 1×10^{-6} and 1×10^{-4} are considered to be outside the "unrestricted use" designation and may warrant additional investigation or interim actions to reduce the health risks to the general public, or in this case, a recreational

visitor near the Katy Trail. The 5.9×10^{-5} risk value obtained for the entire grid area along the Katy Trail is already within this designated range. MDNR expects that the final risk value generated by using the DOE's methodology for grid areas #3, #4, and #5, only, would result in a value higher than 5.9×10^{-6}.

The MDNR staff requests that a meeting be held with the DOE on August 11, 1994, to discuss the enclosed comments and resolve any issues that remain concerning the risk assessment methodology, soil sampling data, exposure point concentration values, as well as, available methods for restricting public access to this area. After this discussion, MDNR will provide a final written recommendation regarding this issue.

If you have any additional questions, please contact me at (314) 751-2506.

Sincerely,

HAZARDOUS WASTE PROGRAM

Karen Marcus
Environmental Engineer
Federal Facilities Section

KM:al

Enclosure

c: Dan Wall, EPA
MDNR Field Office
Chuck Arnold, MDOH

MISSOURI DEPARTMENT OF HEALTH

Mel Carnahan
Governor

Coleen Kivlahan, M.D., M.S.P.H.
Director

P.O. Box 570, Jefferson City, MO 65102-0570 • 314-751-6400 • FAX 314-751-6010

July 26, 1994

Ms. Karen Marcus
Environmental Engineer
Federal Facilities Section
Department of Natural Resources
P. O. Box 176
Jefferson City, Missouri 65102-0176

Dear Ms. Marcus:

The Missouri Department of Health (DOH) has reviewed the Preliminary Evaluation of Surface Soil at the Katy Trail/Vicinity Property #9 (VP9) Area document for the Quarry Residual Operable Unit of the Weldon Springs Chemical Plant Site. This review focused on the Vicinity Property #9 radionuclide contamination present in soil DOH has two general comments and several specific comments related to the VP9 evaluation.

First, the Baseline Assessment, the RI/FS-EA and the preliminary evaluation of surface soil document all suggest that risks falling in the range of 1×10^{-6} to 1×10^{-4} are acceptable risks This is somewhat inaccurate. EPA Region VII policy has been that risks which are below 1×10^{-6} are acceptable, while those that exceed 1×10^{-4} require remediation. Please clarify this in the document. Second, it is EPA's position that radiation risk assessments for Superfund sites should include estimates of both the dose equivalents (calculated using DCFs) and the human health risk (i e., lifetime excess cancer incidence per unit intake and per unit of external exposure) This has not been done in this document

Enclosed please find specific comments generated during our review of the document. If you have any questions or need additional information, please feel free to call Mr. Chuck Arnold or Ms. Cherri Baysinger-Daniel at (314) 751-6111 Thank you for the opportunity to review and comment on this document.

Sincerely,

Chuck Arnold

Chuck Arnold
Environmental Specialist
Bureau of Environmental Epidemiology

Enclosures

5. Page 6, Table 4, third footnote. Please discuss why DCFs and unit risk factors were used instead of EPA's radionuclide slope factors. Dose conversion factors (DCFs) are typically developed for occupational exposures to radiation and may be inappropriate for use in estimating risks to the general public. Additionally, the baseline assessment for the Weldon Springs Chemical Plant Site (pages 4-1 and 4-2) states that EPA's radionuclide slope factors were not used to estimate radiological risks because they have not been independently verified by the scientific community or widely used. This statement is inaccurate. A personal communication with EPA Region V personnel indicates that DOE routinely uses EPA slope factors for radionuclides at sites in Region V.

6 Page 6, Table 4. Risks attributable to U235 decay series radionuclides have not been included in Table 4. Because the percent abundance of U235 is low when compared to U238, the risks from the U235 decay series radionuclides may not be as great as those from the U238 decay series radionuclides However, protactinium-231 and actinium-227 both have some rather large inhalation slope factors. For this reason, the U235 decay series should be evaluated in the risk assessment

7. Page 7, Table 4, fifth footnote. This footnote states that U234 and U238 concentrations were assumed to be at equilibrium and were obtained by assuming each to be half of the total uranium concentration. While U234 and U238 are in a state of secular equilibrium in nature, the processing of ores containing uranium can affect this state of equilibrium. Concentrated uranium and thorium residues were deposited in the quarry. Please discuss reasons why it is appropriate to assume these radionuclides are in equilibrium

8. Page 8, Table 4A. The DCFs shown in this table are referenced as having been taken from Table 4.1 of the baseline assessment for the Weldon Springs Chemical Plant. However, upon comparison of Table 4A with Table 4 1, the ingestion and inhalation DCFs for radium-226, and the ingestion, inhalation and external gamma DCFs for radium 228 are not the same. Please explain why these values have been changed

9. Page 9, Table 5, third footnote. This footnote states that the concentration of chromium VI was assumed to be 10% that of total chromium While there are no approved Contract Laboratory Program (CLP) methods for hexavalent chromium, there are methods outside of CLP for determining hexavalent chromium concentrations in soil