



U.S. Department of Energy

Grand Junction Office
2597 B $\frac{1}{4}$ Road
Grand Junction, CO 81503

APR 22 2002

Ms. Wendy Naugle
Colorado Department of Public Health and Environment
Remedial Programs Section
Hazardous Materials & Waste Management Division
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Subject: Revised Performance Report on the Vanadium Pilot Test at New Rifle

Dear Ms. Naugle:

Enclosed are two copies of the revised *Performance Report on the Operations of the Pilot Plant for the Treatment of Vanadium in Ground Water*. The revised report incorporates your comments dated January 3, 2002. A comment resolution is also enclosed that explains how each comment was addressed. Each response is included in the revised report as Section 6.0 (*Discussion and Implications*).

It is apparent from the results of the pilot testing that the relatively immobile form of vanadium present in the soluble ground water plume at the New Rifle site is limiting the restoration potential of the aquifer. The low mobility results from a low mass-transfer for vanadium that favors partitioning to the soil phase, thus preventing the feasibility of meeting cleanup goals using conventional pump-and-treat methods.

A low mass-transfer for vanadium is evidenced by: (1) relatively high distribution coefficients measured at the site, (2) "tailing effect" observed in a laboratory column test performed using site-specific soils and ground water, (3) slow migration rate (400 ft. in 40 years) in a cobble-gravel aquifer with high hydraulic conductivity and recharge from the Colorado River relative to the more mobile constituents, (4) flow and transport modeling results consistent with a low mass-transfer value, and (5) stable concentrations after a mass representing 37 percent of the soluble plume was removed.

Based on the technical merits of this pilot study, the DOE will propose an Alternate Concentration Limit (ACL) for the relatively small area (~ 500 ft. x 500 ft.²) where the vanadium plume is present. An ACL will be proposed for vanadium in lieu of the previous proposal of Technical Impracticability that was identified in the draft Environmental Assessment (EA). The revised EA and the draft Ground Water Compliance Action Plan will reflect the proposed change.

Ms. Wendy Naugle

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Please contact me at 970/248-7612 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald R. Metzler", with a stylized flourish at the end.

Donald R. Metzler
Program Manager

Enclosure

cc w/enclosure:

E. Green, Garfield County
M. Layton, NRC
J. Martin, Grand County Commissioner
S. Myers, City of Rifle
B. Von Till, NRC
Rifle Public Library

cc w/o enclosure:

G. Janosco, NRC
R. Weller, NRC
A. Berry, DOE-GJO
Project File GWRFL 10.6.4 (K. Sutton)

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