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MEMORANDUM FOR: Lake H. Barrett, Chief
Engineering Branch
Division of Waste Management, NMSS

FROM: Malcolm R. Knapp, Chief
Geotechnical Branch
Division of Waste Management, NMSS

SUBJECT: REVIEW OF THE MEMO ON THERMODYNAMIC RELATIONS IN THE MAGNETITE-HEMATITE-WATER SYSTEM

As requested by your memorandum dated July 20, 1984, the subject document has been reviewed in detail. The Geochemistry Section of WMGT considers that the inconsistent use of sign conventions by the DOE in their draft SCR has created confusion. The derivation of Eh-pH relations in the magnetite-hematite-water system is valid only if the assumptions can be shown to hold. If the DOE tries to use these calculations to "prove" reducing conditions, then the Geochemistry Section agrees with the concerns expressed in the memo.

It is suggested that detailed comments be discussed with Charles Peterson. In addition, it is recommended that a memo be sent to the DOE addressing the confusion that can be caused by switching sign conventions in their Eh derivations.

Questions can be addressed to John Bradbury who is responsible for the document review on extension 74055.

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Malcolm R. Knapp, Chief
Geotechnical Branch
Division of Waste Management, NMSS

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