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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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February 8, 1993

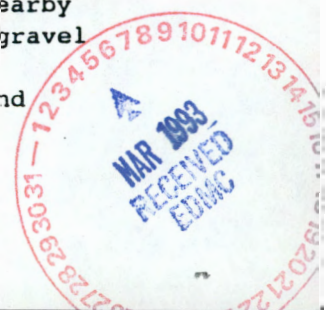
Ms. D. E. Trader
U.S. Department of Energy
MSIN A5-90, P.O. Box 550
Richland, WA 99352

Dear Ms. Trader:

RE: Request for Variance from WAC 173-160 to Drill Three Vadose Zone
Horizontal Boreholes

The request for variance from WAC 173-160 is granted based on the following rationale and with the following stipulations. Horizontal borehole S1-3 will be uncased and drilled no deeper than 12 feet below land surface, as specified in the letter and attachments from Don Moak of Westinghouse Hanford Co. (WHC). As stated in the letter of Charles S. Cline to Steven H. Wisness, U.S. Department of Energy, Richland, Washington, dated November 6, 1992, "uncased excavations and borings of 15 feet, or less, need meet only WAC 173-160-010(4)" requirements. This Section of the WAC states that these excavations shall be constructed and abandoned to "ensure protection of the ground water resource and to prevent the contamination of that resource." The WAC is not specific on how this should be achieved. Therefore, borehole S1-3 need meet only WAC 173-160-010(4) and no variance is required.

The horizontal boreholes S1-1 and S1-2 will be cased, but because of the directional boring method that will be used, they cannot be sealed around the annular space nor can a filter pack be installed. However, because of their shallow depth of completion (12 and 25 feet below land surface, respectively) and the much greater depth to ground water (approximately 250 feet from land surface), the lack of radiological and/or chemical contamination nearby and the presence of a surface protective pad, the WAC 173-160-550 (well seal) and 173-160-540 (filter pack) requirements will be waived. Many of the WAC 173-160 requirements for "Design and Construction" are based on preventing contaminants at shallower depths from moving downward to the ground water, either by way of the annular space between the casing and the borehole or directly down the casing. The driller's log for the nearby well, 699-38-70, indicates that there is sand from 0 to 5 feet, small gravel from 5 to 15 feet, and sandy silt/gravel from 15 to 25 feet. If the horizontal-drilling site is similar, the lithology present from the land



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surface to the 25-foot depth would do little to attenuate the movement of any potential contaminant from the land surface down to 25 feet. Based on the available information, the borehole construction should not provide an exceptional pathway for the movement of potential surface contamination to the maximum 25 feet depth.

In this case, the operator does not need to be a licensed driller because overall supervision of this work will be under Mr. B. Volk (WHC) who is a Washington State licensed driller. The additional request for variance from WAC 173-218, "Underground Injection Control", to pump water through the drill bit at the rate of two gallons per minute for cooling purposes is not considered necessary.

Your request for variance from WAC 173-160 requirements is granted. If you have any questions, please feel free to call me at (206) 438-7556.

Sincerely,



Charles S. Cline
Hydrogeologist
Nuclear & Mixed Waste Management Program

CSC:dr
Enclosures (7)

cc: Paul Day, EPA-Hanford
Doug Sherwood, EPA-Hanford
R.D. Wojtasek, WHC
D.J. Moak, WHC
B.W. Volk, WHC
Tom Mackie, Ecology-CRO
Dick Szymarek, Ecology
Dave Jansen, Ecology
Dave Nylander, Ecology
Larry Goldstein, Ecology
Darci Teel, Ecology
Krystyna Kowalik, Ecology

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
C. S. Cline, Ecology	D. E. Trader, RL	Incoming 9301613

Subject: REQUEST FOR VARIANCE FROM WAC 173-160 TO DRILL THREE VADOSE ZONE
HORIZONTAL BOREHOLES

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