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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

SEP 2 5 1995

95-PCA-510

Ms. Sylvia Kawabata, Chief
Water Enforcement Section
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, WD-135
Seattle, Washington 98101

Dear Ms. Kawabata:

USE OF BIOCIDE AT THE HANFORD SITE 300 AREA TREATED EFFLUENT DISPOSAL FACILITY (WA-002591-7)

This letter is to provide information concerning the use of a biocide at the Hanford Site 300 Area Treated Effluent Disposal Facility (TEDF). The TEDF continues to have difficulties with the growth of bacteria and other biological matter in the Ion Exchange (IX) columns. The IX units have been kept operational using backwashes and caustic strikes. These actions alone are not providing the needed biological control to operate the process at optimal efficiency.

Use of an appropriate biocide is needed to gain control over the IX column biological growth problem. A number of different biocides have been evaluated for this application. It has been determined that the most suitable biocide is one based on methylene bis(thiocyanate) as the active ingredient. The biocide will initially be used in batch mode with an isolated column, but may be later used in a continuous flow through mode. The use of this biocide is not prohibited in the TEDF National Pollutant Discharge Elimination System permit and will not cause the permit discharge conditions to be violated.

The methylene bis(thiocyanate) is used at low concentrations, approximately 1 ppm or less. In batch mode, the isolated column will have the biocide introduced and remain for a soak period. When the soak is completed, the solution and subsequent rinse will be recycled to the head of the plant. Methylene bis(thiocyanate) is unstable at high pH and easily complexed with iron so the TEDF co-precipitation process will remove the majority of any remaining biocide. The ultra-violet/oxidation (UV/OX) treatment process is anticipated to destroy methylene bis(thiocyanate) to be less than detectable levels with carbon dioxide, nitrates, and sulfates as the byproducts.

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Continuous biocide dosing would not be used until ongoing UV/OX testing demonstrated that the treatment can consistently destroy the methylene bis(thiocyanate) to be less than detectable levels. Under these controls the biocide use will not significantly change the nature or increase the quantity of pollutants discharged.

If you have any questions or require additional information, please contact Mr. Randall N. Krekel of my staff on (509) 376-4264.

Sincerely,

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

EAP:RNK

cc: A. DiLiberto, WHC
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Subject: USE OF BIOCIDE AT THE 300 AREA TREATED EFFLUENT DISPOSAL FACILITY

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