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Richland Operations Office
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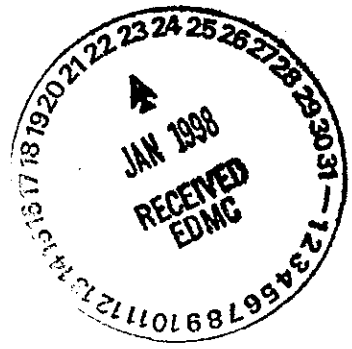


Ms. Debra McBaugh, Section Head
Environmental Radiation Section
State of Washington
Department of Health
P.O. Box 47827
Olympia, Washington 98504-7827

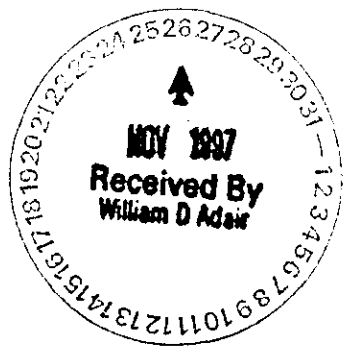
Mr. David Grant
Aquatic Resources Division
State of Washington
713 East Bowers Road
Ellensberg, Washington 98926

Dear Ms. McBaugh and Mr. Grant:

MONTHLY EFFLUENT RADIONUCLIDES MONITORING REPORT - SEPTEMBER 1997

Pursuant to Section 4.8(b) of the Aquatic Lands Sewer Outfall Lease No. 20-013357, please find enclosed the 300 Area Treated Effluent Disposal Facility Monthly Effluent Radionuclide Monitoring Reports for the reporting period of August 28 through September 25, 1997, as shown in the attached table. Results of the monthly composite sample are submitted to the State of Washington Department of Health in according with the Exhibit C of the lease. No excursions occurred during this reporting period.

Also included in this report are the results from the annual receiving water monitoring which is also required per Exhibit C of the above listed aquatic land lease. This sampling was performed on September 17, 1997, both upstream and downstream of the outfall, on the edge of the mixing zone. An incident report was issued on October 16, 1997, as a result of elevated levels of Radium (Ra) 226 and Ra 228 in the samples. Results from the corrective actions listed in the incident report are provided as Attachment 2.



CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
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Subject: MONTHLY EFFLUENT RADIONUCLIDES MONITORING REPORT - SEPTEMBER 1997

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lgj/376-5869
01/09/98

If you have any questions, please contact Alex Teimouri, of my staff, on (509) 376-6222.

Sincerely,

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

EAP:AET

Attachments:
1. 300 Area TEDF Effluent Sampling Results
2. 300 Area TEDF Annual Receiving Water Quality Sampling Results

cc w/attachs:
W. D. Adair, FDH
E. S. Aromi, RFSH
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D. L. Halgren, RFSH
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J. R. Wilkinson, CTUIR
Permit Coordinator, Ecology

NOV 1997
Received By
William D Adair

ATTACHMENT 1
300 Area Treated Effluent Disposal Facility
Effluent Sampling Results

Analysis	Result[2] Bq L^{-1} (pCi L^{-1})	% Counting Error	State Standard pCi L^{-1}
GEA[1] - ^{60}Co	<0.019 (<0.52)	362%	S 50,000[3] I 30,000
- ^{137}Cs	<0.0061 (<0.17)	1000%	S 20,000 I 40,000
Total Alpha	0.059 (1.60)	54%	15[4]
Total Beta	<0.041 (<1.1)	90%	50[4]
Tritium	<6.7 (<180)	40%	20,000[4]

[1]GEA: Gamma Energy Analysis
[2]Bq L^{-1}: Becquerel per liter; pCi L^{-1}: picoCurie per liter. There are 37 X 10^9 Bq L^{-1}.
[3]Soluble (S) and Insoluble (I) Standards for ^{60}Co and ^{137}Cs from Washington Administrative Code 246-221-290 (Table II).

[4]Standards for total alpha, total beta, and tritium from Department of Natural Resources Aquatic Resources Lease 20-013357.

ATTACHMENT 2
300 Area Treated Effluent Disposal Facility
Annual Receiving Water Quality Sampling Results

Analysis	Upstream Sample Result[2] Bq L^{-1} (pCi L^{-1})	% Method Error	Downstream Sample Result[2] Bq L^{-1} (pCi L^{-1})	% Method Error	State Standard pCi L^{-1}
GEA[1] - ^{60}Co	<-0.016 (<-0.45)	408%	<-0.011 (<-0.31)	587%	S 50,000[3] I 30,000
- ^{137}Cs	<-0.068 (<-1.85)	109%	<-0.026 (<-0.72)	280%	S 20,000 I 40,000
Total Alpha	<0.029 (<0.79)	90%	0.093 (2.5)	40%	15[4]
Total Beta	<0.023 (<0.62)	110%	<0.005 (<0.14)	460%	50[4]
Tritium	<1.887 (<51)	70%	<0.017 (<0.45)	80%	20,000[4]
^{90}Sr	<-0.122 (<-3.3)	100%	<-0.100 (<-2.7)	100%	8[4]
Ra-226	0.012 (0.34)	30%	0.211 (5.7)	13%	3[4]
Ra-228	<0.028 (<0.76)	200%	0.178 (4.8)	60%	5[4]

[1]GEA: Gamma Energy Analysis

[2]Bq L^{-1}: Becquerel per liter; pCi L^{-1}: picoCurie per liter. There are 37 X 10^9 Becquerel per Curie.

[3]Soluble (S) and Insoluble (I) Standards for ^{60}Co and ^{137}Cs from WAC 246-221-290 (Table II).

[4]Standards for total alpha, total beta and tritium from Department of Natural Resources Aquatic Resources Lease No. 20-013357 per WAC 246-290-310 (8)

As stated in the October 16, 1997 incident report, 300 Area Treated Effluent Disposal Facility personnel requested a rerun of the upstream and downstream river samples. Presented below is a comparison of the original data with the rerun analyses.

Sample Location	Isotope	Original picoCurie per liter (pCi/l)	Re-Run picoCurie per liter (pCi/l)
Upstream	Radium (Ra)-226	0.21	0.47
	Ra-228	<D	<D
Downstream	Ra-226	8.3	3.1
	Ra-228	5.9	3.7

Facility personnel reviewed the plant effluent data. To date, no effluent sample has exceeded detection levels for a total Ra. Total Ra detection levels vary between 0.07 - 0.23 pCi/l, well below the WAC limits. Based on this, no addition actions are proposed. The facility will continue to monitor a total Ra in the effluent as required by National Pollutant Discharge Elimination System Permit WA-002591-7.