

Prepared by:
The Dredged Material Management Office
Seattle District, U.S. Army Corps of Engineers

MEMORANDUM FOR RECORD

November 14, 2019

SUBJECT: DMMP NO-TEST DETERMINATION FOR MAINTENANCE DREDGING OF UP TO 500 CUBIC YARDS OF ACCUMULATED SEDIMENT AT THE DARIGOLD DISCHARGE PIPE OUTFALL DIFFUSER ON THE CHEHALIS RIVER FOR UPLAND DISPOSAL.

- 1. Introduction.** This memorandum documents the no-test determination by the Dredged Material Management Program (DMMP) agencies (U.S. Army Corps of Engineers, Washington Departments of Ecology and Natural Resources, and the Environmental Protection Agency) for maintenance dredging and upland disposal of sediment that has accumulated at the discharge pipe outfall for the Darigold facility. The Darigold facility is located approximately 0.5 miles east of the Chehalis River in Lewis County (Figure 1).

The diffuser at the end of the outfall pipe is buried with approximately 100 cubic yards (cy) of accumulated sediment, although the conservative estimate being used for planning purposes is 500 cy. The outfall is operated under NPDES permit WA0037478 to discharge treated wastewater from the Darigold facility.

Dredging will unbury the outfall diffuser structure and facilitate repairs of the diffuser. All dredged material is proposed for placement at an approved upland disposal location.

- 2. Evaluation.** The DMMP guidelines provide testing relief for small projects, depending on the rank of the project. According to the DMMP User Manual, projects for which sources exist in the vicinity of the project, or for which there are present or historical uses of the project site with the potential for producing chemical concentrations within a range associated historically with some potential for causing adverse biological impacts, are to be assigned a 'moderate' rank. Projects with many known chemical sources, high concentrations of chemicals of concern, and/or biological testing failures in one or both of the two most recent cycles of testing are to be assigned a 'high' rank (DMMP, 2018). Projects located within or adjacent to a MTCA/CERCLA cleanup site may be subject to project-specific ranking guidelines with higher sampling and testing requirements.

The Darigold facility has two CERCLA sites nearby: Washington Junk Company (WA Junk) and American Crossarm & Conduit (ACC). The former has a No Further Action (NFA) designation, while the latter has ongoing monitoring and Five-Year reviews. Contaminants of concern (CoCs) for WA Junk included metals, pesticides, PCBs, and PAHs. CoCs for ACC include dioxins/furans, metals, pesticides, phenols, halogenated organics, and PAHs.

Darigold releases treated wastewater to the Chehalis River and must comply with their NPDES permit. Per the NPDES permit the applicant tests for flow, biological oxygen demand (BOD), total suspended solids (TSS), ammonia, fecal coliform bacteria, chlorine, and pH at the river outfall. A review of

Ecology's NPDES database reveals that in the past five years, one violation (in April 2019) occurred. The violation was triggered by excessive total suspended solids (TSS) and is thus of low concern for the DMMP.

The presence of two nearby CERCLA sites complicates the ranking that should be assigned to the outfall. As a precaution, the DMMP agencies reviewed existing contaminant data in the vicinity of the project to determine the need for testing. Sources of information for this review included Ecology's Environmental Information Management (EIM) database and two reports prepared by Ecology documenting follow-up monitoring of the ACC site (Ecology, 2002; Ecology, 2005). The DMMP agencies also reviewed the most recent American Crossarm Five-Year review (signed September, 2019) and coordinated with EPA Region 10 Remedial Project Manager (RPM) Ashley Grompe who conducted the most recent Five-Year review.

Dillenbaugh Creek, which drains into the Chehalis River upstream of the outfall, has multiple EIM sediment samples with elevated dioxin/furans (up to 1156 pg/g TEQ). The source of the creek sediment dioxins/furans is the ACC CERCLA site. Dioxin/furan sediment concentrations generally decrease downstream from the ACC site as the creek approaches the confluence with the Chehalis River. While the elevated dioxin/furans sediment concentrations in nearby Dillenbaugh Creek are concerning, the DMMP assumes that by volume the primary source of sediment that has accumulated on the diffuser is likely clean upriver sediment, with concentrations presumed to be similar to that measured just downstream from the outfall. Sediment contribution to the diffuser from Dillenbaugh Creek is believed to be minor compared to the much larger sediment quantities expected to be carried (and deposited) by the main-stem Chehalis River.

This hypothesis is supported by the minimal data that exist in the Chehalis River near the location of the outfall discharge. Nearby EIM data from the river includes a handful of water samples (tested for nutrients, bacteria, suspended solids) and one sediment sample (location ID CHEHALS3) located just downstream of the outfall that was tested for dioxins/furans in 1998 (Figure 2). The reported dioxin/furan TEQ (ND=1/2) for CHEHALS3 is 6.9 pptr TEQ (Table 1). Figure 3 also shows an upstream background sample (CHEHALS2) that was collected and tested at the same time. The reported dioxin/furan TEQ for CHEHALS2 is 0.8 pptr, which is below state natural background (Table 1).

In reviewing the above information, the DMMP agencies have concluded that the concern for potential contamination in the sediment currently accumulated on the diffuser is moderate. Although there are known nearby sources, the DMMP believes, based on the above analysis, that the sediment accumulated at the outfall predominantly originates from clean main-stem Chehalis River sources. Any residual dioxin/furan contamination in the sediment downstream of Dillenbaugh Creek has likely attenuated in the 20 years since the nearby Chehalis River sediment was last tested in 1998. Given the relatively small volume of proposed dredged material (up to 500 cy), the DMMP agencies have determined that the material does not need to undergo sampling and testing as long as all material is placed in an appropriate upland disposal location. The DMMP does not support in-water placement, such as flow-lane disposal downstream in the Chehalis River, unless the accumulated sediment undergoes additional sampling and testing.

- 3. Antidegradation Evaluations.** The surface to be exposed by dredging is the diffuser structure. No new sediment surface will be exposed.

4. **No-Test Determination.** Based on the DMMP evaluation of existing data and best professional judgment, the DMMP agencies have determined that **sampling and testing are not required for upland disposal of up to 500 cy of dredged material for this project.**

This determination does **not** constitute final agency approval of the project. During the public comment period that follows a public notice, resource agencies and the public will provide input on the overall project. A final decision will be made after full consideration of public input.

5. **References.**

DMMP, 2018. Dredged Material Evaluation and Disposal Procedures (User Manual). Dredged Material Management Program, December 2018.

Ecology, 2002. Reconnaissance Survey of Dioxins and Furans in Dillenbaugh Creek and the Chehalis River near the American Crossarm Site, Publication No. 02-03-043, September 2002.

Ecology, 2005. Spatial Extent of Dioxin/Furan Contaminated Sediments in Dillenbaugh Creek. Prepared by Nigel Blakley and Dale Norton for the Environmental Assessment Program, Publication No. 05-03-008. April 2005.

U.S. Environmental Protection Agency, 2019. Fifth Five-Year Review Report for American Crossarm and Conduit Superfund Site. Lewis County, Washington. September 2019.

6. Agency Signatures.

Concur:

signed copy on file in DMMO - Seattle District office

Date Heather Whitney Fourie – Seattle District U.S. Army Corps of Engineers

Date Justine Barton – U.S. Environmental Protection Agency

Date Laura Inouye, Ph.D. – Washington Department of Ecology

Date Shannon Soto – Washington Department of Natural Resources

Copies Furnished:

DMMP agencies
USACE Regulatory
DMMO File

Table 1. Dioxin/furans concentrations in Dillenbaugh Creek and Chehalis River Sediment

Table 3. PCDD/PCDF Concentrations in Dillenbaugh Creek and Chehalis River Sediments (ng/Kg dry weight basis)

Compound	TEF	Station Name and Lab ID Number							
		CHEHALS1 98238080	CHEHALS2 98238081	CHEHALS3 98238082	DILLEN1 98238083	DILLEN2 98238084	DILLEN3 98238085	DILLEN4* 98238086/87	DILLEN6 98238088
2,3,7,8-TCDD	1	0.28 J	0.2 U	0.3 J	0.51 J	1.3	0.53 J	1.9	0.6 U
1,2,3,7,8-PeCDD	0.5	0.5 J	0.3 NJ	0.88 J	1.2 J	19.2	1.6 J	41.9	1.9 J
1,2,3,4,7,8-HxCDD	0.1	0.53 J	0.37 J	1.3 J	2.2 J	72.5	2.8 J	147.5	3.1 J
1,2,3,6,7,8-HxCDD	0.1	2.2 J	0.8 UJ	9	8.7	700	12.4	2865 J	15.4
1,2,3,7,8,9-HxCDD	0.1	1.9 J	1.2 UJ	3.9 J	5.6 J	159	7.8 J	362	10.8
1,2,3,4,6,7,8-HpCDD	0.01	31.5	6.8	171	164	11340 J	256	39370 J	542
OCDD	0.001	216	46.7	1190	1260	67800 J	2210	168810 J	5080 J
2,3,7,8-TCDF	0.1	0.68	0.7 U	0.92	1.7	5.4	3.3	25.05	3.8
1,2,3,7,8-PeCDF	0.05	0.46	0.35	0.6 NJ	1.2 J	18.4	1.6 J	87.5	2 NJ
2,3,4,7,8-PeCDF	0.5	0.55 UJ	0.46 UJ	0.8 NJ	1.6 J	21.4	2.4 J	84.8	5.8
1,2,3,4,7,8-HxCDF	0.1	1.3 UJ	0.8 UJ	3.2 UJ	3.6	142	4.7 J	493.5	7.9
1,2,3,6,7,8-HxCDF	0.1	0.53 UJ	0.36 UJ	1.3 UJ	1.9	49.8	2.2 UJ	178.5	3.1 J
2,3,4,6,7,8-HxCDF	0.1	0.68	0.3 NJ	2.3	3.2	128	3.9 J	443	7.2
1,2,3,7,8,9-HxCDF	0.1	0.2 U	0.2 U	0.41	0.5 NJ	22.3 J	1.6 J	44.6 J	47.5
1,2,3,4,6,7,8-HpCDF	0.01	9.4	1.7 UJ	59.6	42.1	2610 J	47.2	5215 J	63.4
1,2,3,4,7,8,9-HpCDF	0.01	0.63	0.24	3.5	2.7 J	165	3 J	394	3.7 J
OCDF	0.001	29.2	3 J	201	130	9600 J	112	11815 J	135
TEQ		2.1	0.8	6.9	8.2	369.0	11.8	1156.0	25.4
% 2,3,7,8 TCDD		12%	17%	4%	6%	<1%	4%	<1%	2%
% PCDDs		67%	58%	71%	69%	77%	71%	80%	58%
% PCDFs		33%	42%	29%	31%	23%	29%	20%	42%

* Mean of replicate samples 98238086 and 98238087; the most conservative qualifier is reported here
TEF Toxicity equivalency factor (Barnes, 1989)
TEQ 2,3,7,8-TCDD toxicity equivalent
J Analyte was positively identified and the associated numerical result is an estimate
NJ There is evidence that the analyte is present and the associated numerical result is an estimate
U Analyte was not detected at or above the reported result
UJ Analyte was not detected at or above the reported estimated result

Source: Excerpt from Table 3 of Ecology (2002)

Figure 1. Project Location Map



Figure 2. EIM samples from the Chehalis River near the outfall location.

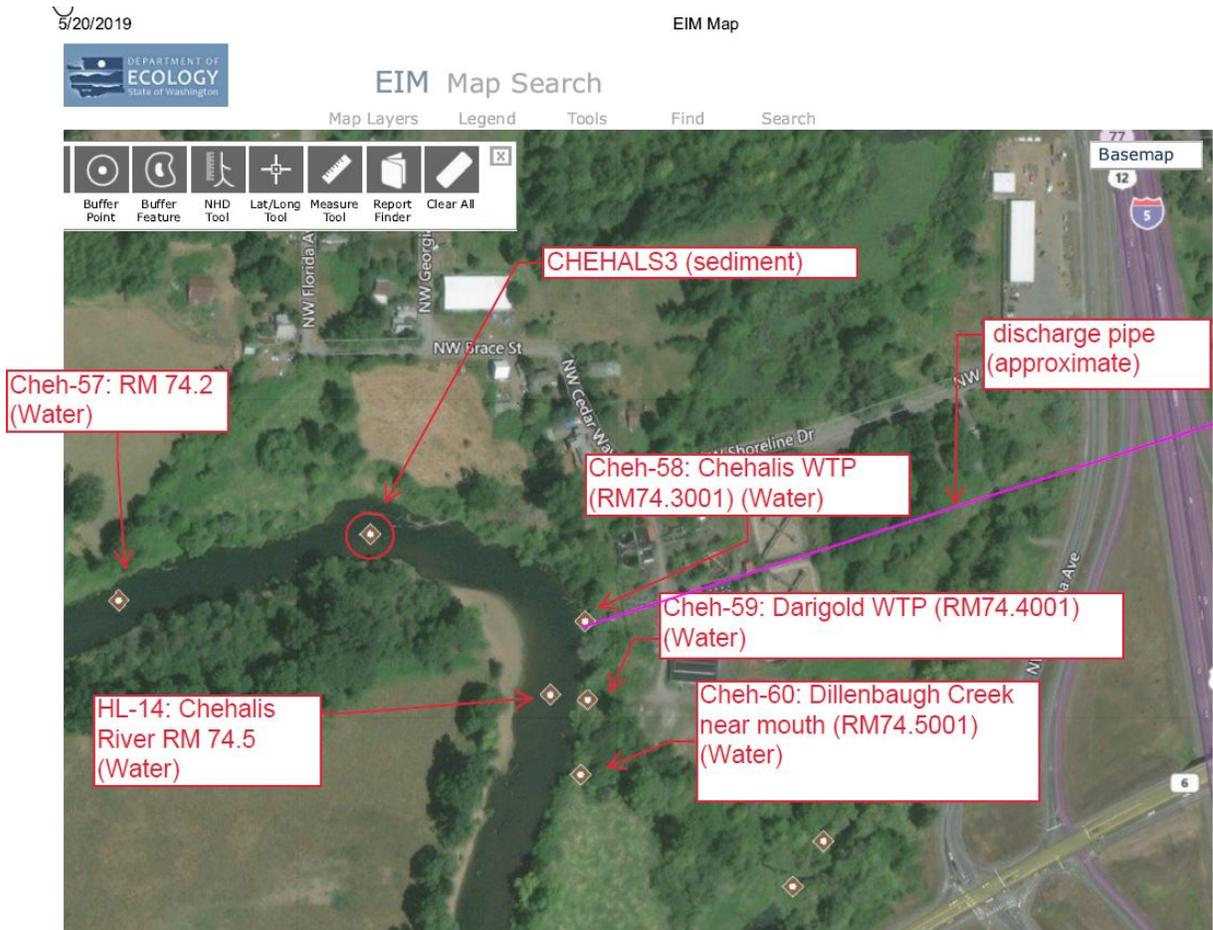


Figure 3. Figure from 2002 Ecology Monitoring Report showing Sediment Sampling Locations

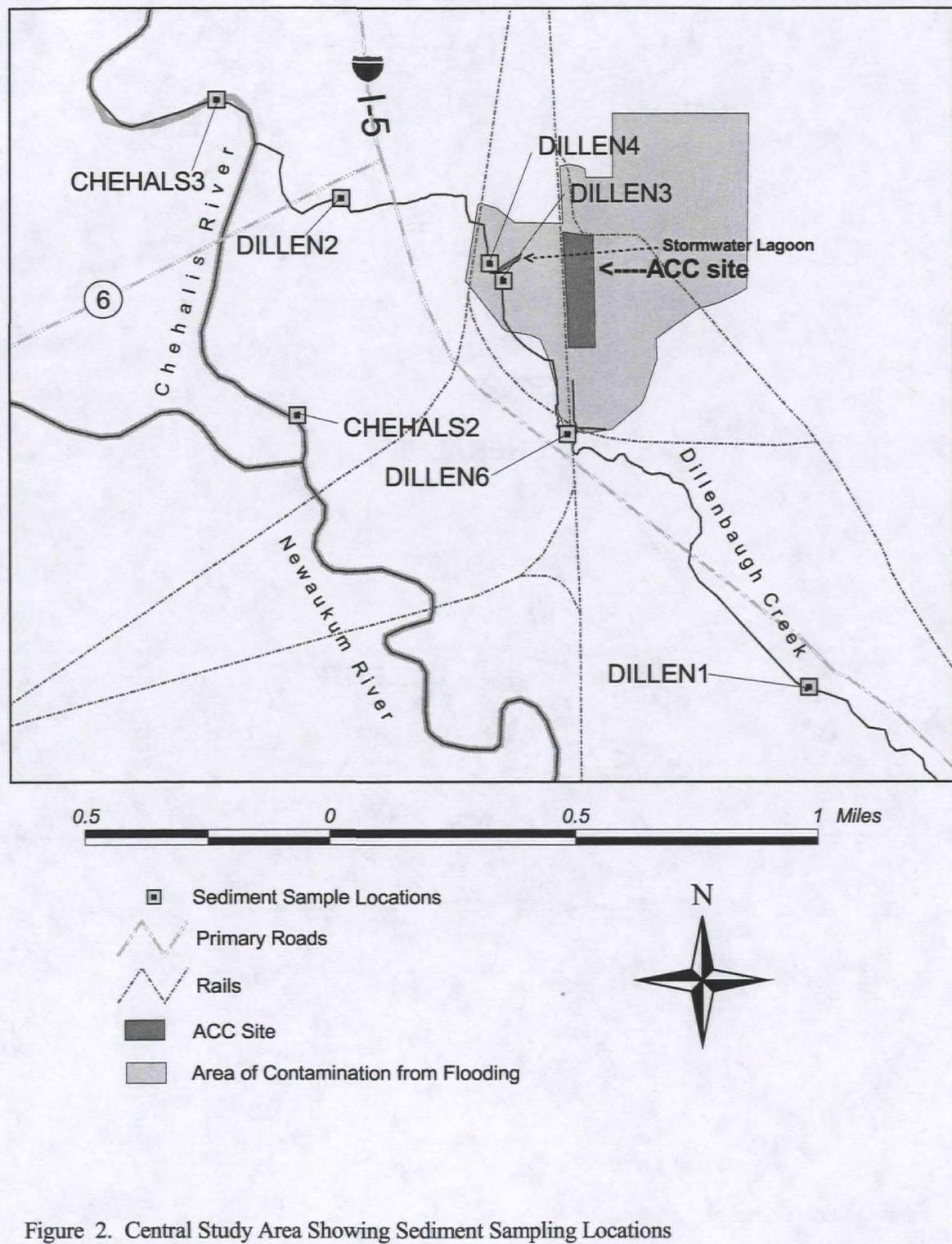


Figure 2. Central Study Area Showing Sediment Sampling Locations

Source Figure: Figure 2 of Ecology (2002)