

25 January 1990

SUBJECT: DECISION ON THE SUITABILITY OF DREDGED MATERIAL TESTED UNDER PSDDA CRITERIA FOR THE METRO EMERGENCY BYPASS OUTFALL PROJECT (WEST POINT TREATMENT PLANT)(OYB-2-013039) TO BE DISPOSED OF AT THE ELLIOTT BAY OPEN WATER DISPOSAL SITE.

1. The following summary reflects the PSDDA agencies (Corps, Department of Ecology, and the Environmental Protection Agency) consensus decision on the acceptability of the sampling plan and all relevant test data (i.e., contained in reports dated December 7, 1989, and December 6, 1989) to make a determination of suitability of the 48,775 cubic yards of dredged material proposed for dredging from the Metro Emergency Bypass Outfall Project site for disposal at a PSDDA disposal site.
2. The PSDDA approved sampling and testing plan was followed, and quality assurance/quality control guidelines specified by PSDDA were generally complied with. The data gathered were deemed sufficient and acceptable for regulatory decision making under the PSDDA program.
3. Four uncomposited surface samples and three composited subsurface samples (each consisting of three samples) were required under the PSDDA guidelines to chemically characterize the "high" concern area covered by the proposed project. Results of chemistry analyses depicting exceedences of PSDDA screening level (SL) guidelines are depicted in enclosure 1. Twelve individual chemicals of concern (COC) exceeded the PSDDA screening level (SL) (fourteen with including total LPAH and HPAH), although none exceeded the bioaccumulation trigger (BT) or maximum level (ML): all were LPAH's and HPAH's from the surface sample at station EBP-8. Detection limits for PSDDA were exceeded for seven COC (enclosure 1). Chemical characterization of the Samish Bay reference sample was also conducted, and generally supported its use as a reference sediment for bioassay comparisons. METRO opted to run bioassays concurrently with chemistry samples, and the results of these analyses are discussed below.
4. In summary, results for bioassay testing for the seven single/composited samples indicated that all dredged material management units passed the PSDDA interpretation guidelines. PSDDA interpretation guidelines specified in June 1988 EPTA, and Sediment Larvae bioassay interpretation guidelines clarified in the Phase II Management Plan Report (MPR) were used to evaluate the bioassay data. Interpretation guidelines discussed in the Phase II MPR specified necessary clarifications/changes in the Echinoderm embryo bioassay mortality and abnormality performance standards for control sediment, reference sediment, and dredged material relative to those specified in June 1988 EPTA. In general the Amphipod, Echinoderm embryo, and Microtox bioassays performed well with respect to appropriate control and reference sediment (Samish Bay) guidelines as specified by PSDDA. Reference sediment (i.e., Samish Bay) and control sediment (i.e., West Beach) performed well within PSDDA performance guidelines specified for each bioassay. All seven samples tested passed the amphipod bioassay and the saline microtox bioassay. Six of the seven sediment samples tested passed the echinoderm embryo bioassay (Dendraster excentricus) with a "single hit" (failure) being recorded for this bioassay for the

subsurface sample EBP-7-9. The tested sediment at EBP-7-9 (lower) was less than 20 percent absolute combined mortality/abnormality over reference sediment and was statistically different (t-Test,  $p < .05$ ), thereby requiring another bioassay "hit" to fail the dredged material management unit. There were no other bioassay "hits". Therefore, the results of these bioassays demonstrated that all seven samples passed the nondispersive disposal guidelines for unconfined openwater disposal.

5. Based on the above discussion and summary of chemical and bioassay results for the METRO Emergency Bypass Outfall Project area, the PSDDA agencies concluded that all the dredged material tested (48,775 cubic yards) is suitable for disposal at the Elliott Bay PSDDA disposal site.

Concur:

5 Feb 1990  
Date

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Enclosures

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RESULTS OF CHEMICAL ANALYSES EXCEEDING PSDDA GUIDELINES: METRO EMERGENCY BYPASS OUTFALL PROJECT (OYB-2-012941)\*

CHEMICAL	1989 SL	1989 ML	EBP-2 UPPER	EBP-3 UPPER	EBP-6 UPPER	EBP-8 UPPER	EBP-7-9 LOWER	SAMMISH BAY REF	NUMBER D > SL	NUMBER U > SL
TOTAL LPAH	610	6,100				852			1	
ACENANPHTHYLENE	64	640				71			1	
PHENANTHRENE	320	3,200				546			1	
ANTHRACENE	130	1,300				139			1	
TOTAL HPAH	1,800	51,000				8,492			1	
FLUORANTHENE	630	6,300				1,260			1	
PYRENE	430	7,300				2,020			1	
BENZO(a)ANTHRACENE	450	4,500				672			1	
CHRYSENE	670	6,700				840			1	
BENZOFLUORANTHENES	800	8,000				1,016			1	
BENZO(a)PYRENE	680	6,800				882			1	
IDENO(1,2,3,c,d)PYRENE	69	5,200			72	756			2	
DIBENZO(a,h)ANTHRACENE	120	1,200				122			1	
BENZO(ghi)PERYLENE	540	5,400				924			1	
HEXACHLOROBENZENE	23	230				<25				1
2,4-DIMETHYLPHENOL	10	50				<13				1
PENTACHLOROPHENOL	69	690				<130		<91		2
BENZYL ALCOHOL	10	73				<13				1
HEXACHLOROBUTADIENE	29	290				<42		<30		2
N-NITROSODIPHENYLAMINE	22	220				<25				1
TOTAL PCB	130	2,500	<200**	<200**	<200**	<200**	<200**			5

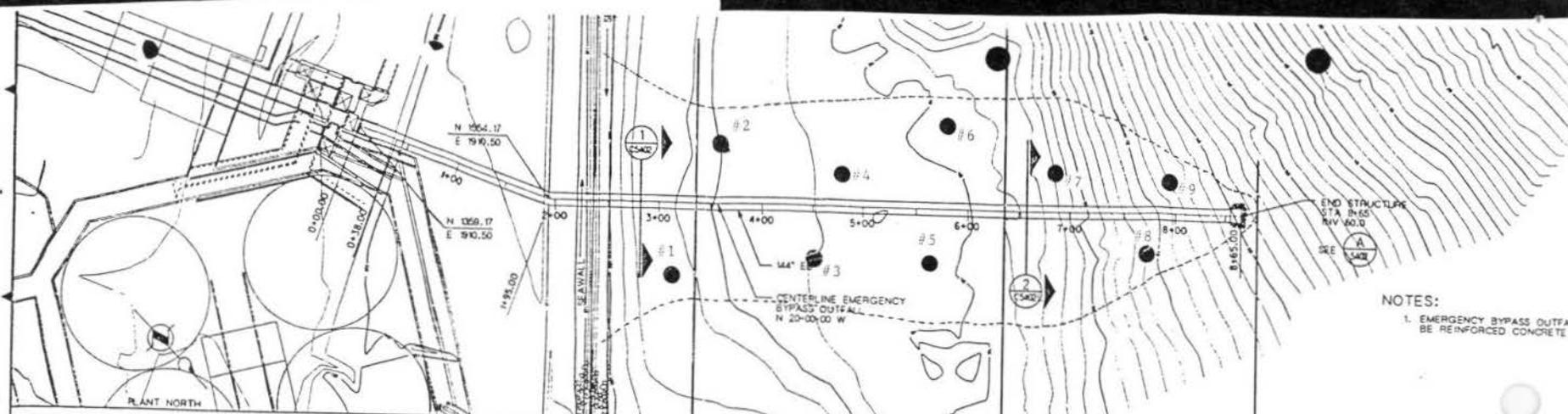
\* CONCENTRATIONS EXPRESSED IN MICROGRAMS/KILOGRAM

\*\* MINIMUM DETECTION LIMITS FOR AROCHLOR 1221

< = MINIMUM DETECTED VALUE (UNDETECTED)

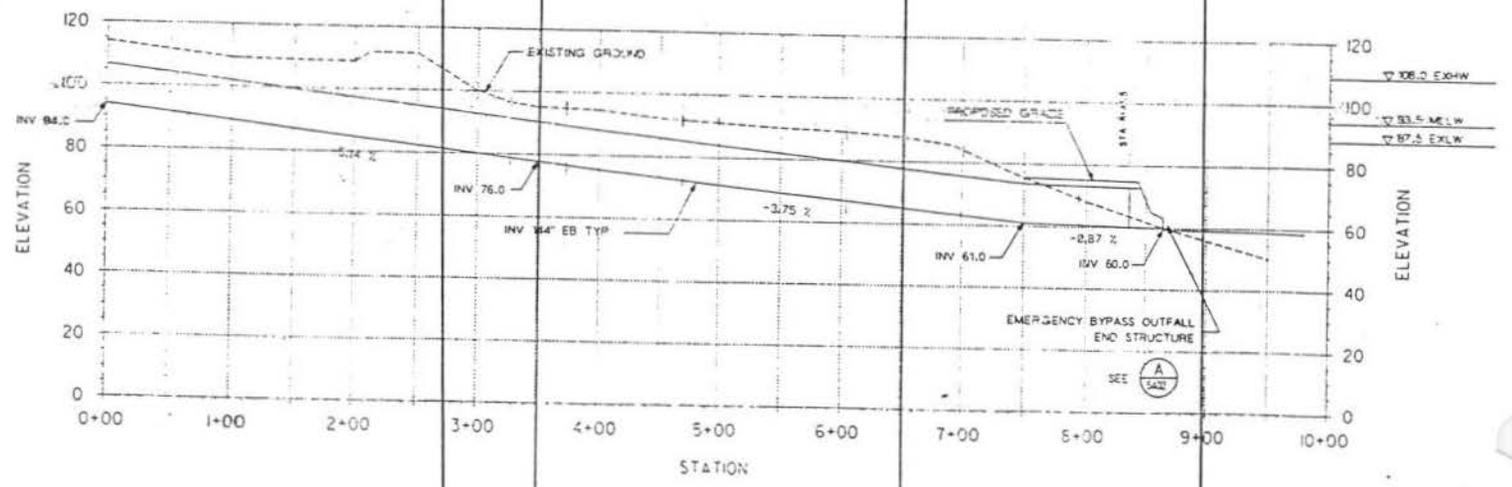
D = DETECTED CONCENTRATIONS

U = UNDETECTED (EXPRESSED AS MINIMUM DETECTED VALUE)



NOTES:  
1. EMERGENCY BYPASS OUTFALL BE REINFORCED CONCRETE

SCALE: 1" = 50' HORIZONTAL  
1" = 20' VERTICAL



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**METRO** Municipality of Metropolitan Denver  
WEST POINT SECONDARY TREATMENT FACILITIES  
EMERGENCY BYPASS OUTFALL  
PLAN AND PROFILE  
STA 0+00 TO STA 8+65

0-4'	2123cy	0-4'	8474cy	0-4'	3897cy
>4'	5337cy	>4'	21052cy	>4'	7892cy

Figure 1-1  
SAMPLE LOCATIONS