

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL

NPPEN-PL-2

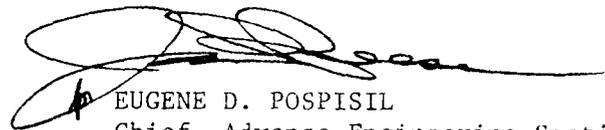
SUBJECT

Analysis of Winchester Bay Boat Basin Sediments

TO Chief, Natural Resources Sec FROM Chief, Advance Engrg Sec DATE 15 January 1980 CMT 1
Moore/6477/jw/18

1. As per our DF of 12 December 1979, attached are the results of analysis of sediment samples from the boat basins and training jetty area at Winchester Bay for grain size, grease and oil, water as percentage total sample, and volatile solids.
2. These analyses were performed to determine if the "greasy" texture of the sediments at station E was due to the nature of the sediments or to organic pollution. Data obtained indicated that volatile solids were present at high levels in both station D and station E samples. However, the station D sample was not particularly slick to the touch as was the station E sample. Sediments from station E contained more small grain size sediments than D, indicating that the slick texture could be attributable to the type of sediment present rather than organic pollution.
3. Sediments from the open water disposal site are expected to be sand and should closely resemble that found at station F (training jetty station). It is probable that benthic organisms currently at the disposal site will not be able to survive in sediments from the boat basin near station E because of the high volatile solids and differing grain size and texture of the boat basin sediments as compared to disposal site sediments. However, boat basin sediments should support other fauna.
4. It is not expected that the sediments contain contaminants of particular bio-accumulative concern and, since they are likely to be dispersed quickly by wave action, they should not have a long-term impact at the open water disposal site. The nutrient levels in the dredged sediments are higher than those in sediments at the open water site. Over the long term, the nutrients are expected to increase productivity at and around the disposal site, although immediate impacts to benthos would be negative because of smothering.
4. A potential impact of concern if open water disposal of sediments from station E occurs is esthetic, (if the discharged sediments wash onto nearby beaches) The chances of this occurring would be lessened if the sediments are disposed in the northwest corner of the open water site as was suggested in our DF of 12 December 1979.
6. We are investigating the possibility of discharging into upland disposal sites or using dredged material for marsh creation. If these options become feasible, you will be notified; otherwise, sediments are proposed to be discharged into the designated open water site.
7. Please issue a public notice which specifies the use of the open water disposal site and describes the sediments to be discharged.

1 Incl
as stated


EUGENE D. POSPISIL
Chief, Advance Engineering Section

DA FORM 2496
1 FEB 62

REPLACES DD FORM 96, WHICH IS OBSOLETE.

U.S.GPO:1978-0-665-041/144

Umpqua Entrance
Surveillance Program

Field Report
29 November 1979

1. Personnel: Vic Schweitz, Wes Toma, Scott Noble
2. Tides & Currents: See figure 1
3. Oceanographic Conditions:

1150: The wind was light at 5 mph from the SE. Initially the waves appeared to be 3-4 feet. In the entrance, spilling breakers were occurring over the shallow areas. The sky was overcast. From the end of the north jetty the highest waves appeared to be 7-8 feet high. Waves were breaking on the offshore bar. The predominant breaker line was located at about station 3. Waves were from the southwest with a period of about 14 seconds.

4. Data Results & Discussion:

a. Water Samples - Table 1 lists the results of the suspended solids analysis and figure 2 is a bar graph of the results. The average surface suspended solids concentrations for the stations sampled are: 2N - 66 parts per million (PPM); 2S = 19 ppm; 3N = 44 ppm; 3S = 165 ppm; 4N = 121 ppm; 5N = 126 ppm; 5S = 45 ppm; and 6 = 21 ppm. The ratios of the concentrations of the north side to the south side are 3.5 for station 2; 0.3 for station 3; and 3.0 for station 5.

On the north side of the jetty there is a large change in concentrations between stations 3 and 4. The breaker line was in the vicinity of station 3. To the south of the jetty the results from station 3 are contrary to what would be expected. No trend exists on the south side. Possibly, we just happened to hit a time with high suspended solids. The concentrations of the 2 samples taken at 2S are 197 ppm and 133 ppm, indicating that the average value is representative.

b. Currents - Rip currents were difficult to measure beyond station 3. At station 2, the rip current in the seaward direction was on the order of 1.8 feet per second.

Measurements of the time the flow along the jetty was moving shoreward or seaward were made at stations 2 and 3. At station 4, there was not enough time for a seaward moving current to develop before the next surge of water from a broken wave passed by. This may indicate a position where shoals may develop. The tabulation below provides the surf beat information, shown as the time in seconds that the water flowed a particular direction, for stations 2 and 3.

<u>Current Direction</u>	<u>Station</u>	
	<u>2</u>	<u>3</u>
Seaward (1)	30	30
Shoreward (2)	15	30
1	20	60
2	25	25
1	80	35
2	10	30
1		40
2		20

For station 2, the average time of seaward flow was 43 seconds, and the average time of shoreward flow was 17 seconds; while for station 3, it was 41 seconds and 26 seconds, respectively.

c. Incident Wave Angles - The wave angles with respect to the shoreline are listed below. Positive angles imply a northward moving sediment transport, and negative angles a southward transport.

<u>Station</u>	<u>Angles (°)</u>
5	17
4	18
3 majority of coast	11
3 close to jetty	-11
2 majority of coast	5
2 close to jetty	-7

5. Sediment Samples: At the request of Jim Reese and Pam Moore, we took sediment samples at 3 stations as part of other Corps projects on the Umpqua River. The following table presents the information desired for the samples taken. The "Ellard Sampler" was used to obtain the samples.

<u>Sample</u>	<u>Time</u>	<u>Weather</u>	<u>Sediment Characteristics</u>
D1	1025	45°F, partly cloudy, no rain, winds SSE at 7 mph, small wind waves less than 3 inches.	Black, silty, light greasy feel, no odor, no stratification, no oil slicks.
D2	1035	Same as 1025	Same as D1 with addition of slight grease layer on top, and organic material.

<u>Sample</u>	<u>Time</u>	<u>Weather</u>	<u>Sediment Characteristics</u>
E1	1545	Winds SE at 8 mph, cloudy and cold, small wind waves less than 3 inches.	Sticky black goeey muck, very fine, no odor and no oil slicks.
E2	1550	Same as 1545	Same as E1
Jetty	1415	Light wind, swell about 2 feet high, ebb tide with elevation at about +1 foot mllw.	Sandy, no odor, no layering.

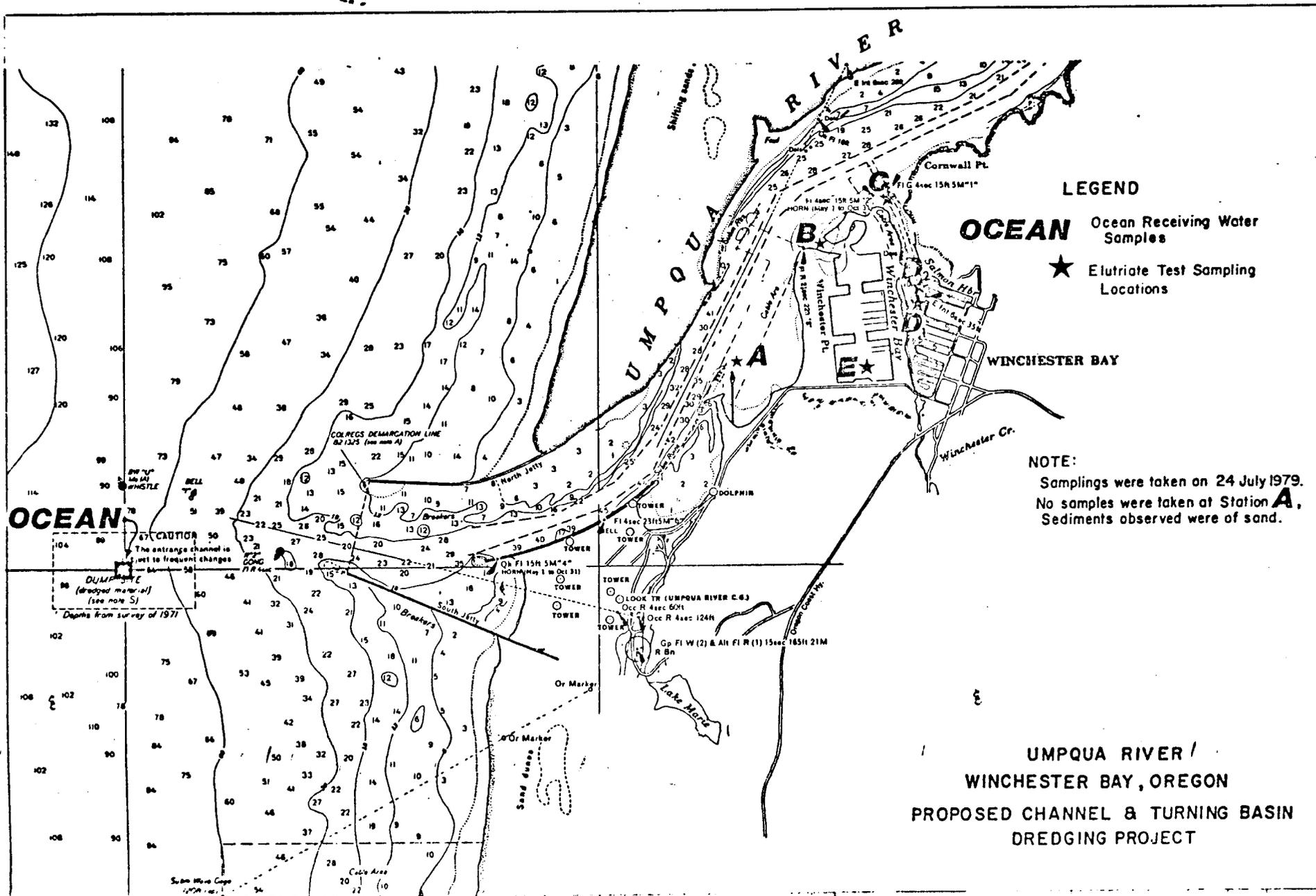
Jetty sample was taken at about 200 feet away from the south jetty, 700 feet in a straight line from the end of the training jetty, and about 200 feet seaward of the end of the training jetty. This point will be in the enclosed basin formed by the extended training jetty. One other alignment noted for this point was that it is just south of the south dredging range. The seas in this area were significantly calmer than in the channel next to the end of the training jetty.

UMPQUA TRAINING JETTY/WINCHESTER BAY

Sediment Samples

Results of tests on three sediment samples received 3 Dec 1979

<u>Parameter</u>	<u>Results</u>		
	<u>Winchester Bay-D</u>	<u>Winchester Bay E</u>	<u>Jetty</u>
Grease & Oil as % dry solids	.0833	.0774	.0188
Water as % total sample	49.8	59.6	20.6
Volatile solids as % dry solids	9.49	10.3	.470



DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

WINCHESTER BAY BOAT BASIN

REFERENCE OR OFFICE SYMBOL

NPPEN-PL-3

SUBJECT

Analysis of Reedsport and
Bandon Boat Basins

TO Ch, Natural Resources Sec.

FROM Ch, Advance Engr. Sec.

DATE 12 Dec 79

CMT 1

Moore/6477/lvm

1. It is currently proposed that 6,000 cubic yards of sediments be dredged from the Bandon Boat Basin and 120,000 from the Winchester Bay Boat Basin in two Section 107 studies under review by EN-PL-2. Attached are elutriate analysis results for sediment samples obtained from the proposed dredging sites. Field notes and maps depicting sampling locations are also attached. It is requested that this data be incorporated into the 404/103 notices currently being written on these projects.

2. Winchester Bay sediments ranged in appearance from black silt to greasy, black clay within the boat basin (Stations B, C, D, and E) with sand being obtained from the navigation channel (Station A). The elutriate of boat basin sediments did not contain contaminants at levels significantly exceeding those of the receiving water sample, which was from the ocean disposal site, except in the case of ammonia and volatile solids. Neither of these, however, were present at levels which were of concern in terms of impact potential. Sediment obtained at Stations B and E visually and tactilely had very greasy consistencies. Elutriates of these samples were tested for both oil and grease and hydrocarbons. Surprisingly, neither parameter was detected.

3. Since elutriate analysis data obtained on Winchester Bay sediments from Stations B and E failed to account for their black, greasy natures, grain size and bulk sediment analysis of volatile solids will be performed on the sediments. These tests should indicate whether the "greasy" texture of the sediments are attributable to the nature of the sediments or to organic pollution. If organic pollution is the cause, additional chemical testing or bioassays may be necessary to ascertain the sediments' impact potential upon open water disposal. A bioassay is expected to cost \$15,000 to \$30,000 and will be undertaken only if response to the public notice is negative.

4. Since the sediments in the Winchester Bay Boat Basin substantially differ from those at the disposal site (sand and rock), benthic organisms characteristic of the ocean disposal site may exhibit poor survivability in the sediments. For this reason, as well as to avoid expenses involved in performing bioassays, we urge that the black, greasy sediments be disposed at an upland site if at all feasible. If not (and provided that sediments are not organically polluted), the sediments should be discharged in the northwest corner of the designated disposal site. If disposal takes place in the depths present at this location, the chances of the greasy black sediments being washed up on beaches are expected to minimal; particularly

12 December 1979

SUBJECT: Analysis of Reedsport and
Bandon Boat Basins

since depth contours near the disposal site run roughly parallel to shore, indicating that long-shore rather than on-shore currents prevail in the area. The State and Federal organizations mentioned in 40 CFR 222.3(c) should be fully appraised of the nature of the sediments via a Public Notice.

5. Sediments dredged from the Winchester Bay Boat Basin in areas other than that from which samples B and E were obtained should be suitable for disposal anywhere within the designated open water disposal site.
6. Bandon sediments were predominantly composed of greyish sand with concrete and stones intermixed. Except for phosphorus, contaminants in the elutriates of the sediment samples were present at either undetectable levels or at levels less than the criteria specified in the EPA's publication "Quality Criteria for Water." Phosphorus levels slightly exceeded the quality criteria. Judging by the elutriate analysis data on Bandon sediments, they are suitable for discharge at the designated open water site.
7. The detection limits used in the elutriate analyses of sediments from both projects for cadmium, mercury, endrin, toxaphene, and PCB's were not at low enough levels to allow comparison of the data to EPA criteria. Since specific concerns in respect to these parameters did not exist at the onset of the study and since levels of parameters tested were below the detection limits, the data is considered adequate for assessing the pollution potential of the sediments.

2 Incls
as


EUGENE D. POSPISIL
Chief, Advance Engineering Section

FIELD NOTES
BANDON HARBOR BOAT BASIN
25 JULY 1979

Weather Conditions: Sunny, high wind (small craft warning).

Sampling Personnel: James Reese, Robert Ellard, Pam Moore, John Rennie.

<u>Sampling Station</u>	<u>Sample Description</u>	<u>Comments</u>
A	Grey sand with some concrete debris and stones.	Collected by hand at low tide. Too much rock for core sampling.
B	Same as above.	Ellard sampler was used; five sample composite.
C	Same as above	Collected by hand at low tide. Too much rock for core sampling.
E	Estuarine water.	
Ocean disposal site.	Marine water.	

UMPQUA RESEARCH COMPANY

(Water and Air Technology)

P. O. Box 791

Telephone (503) 863-5201

626 N.E. Division Street Myrtle Creek, Oregon 97457

Gerald V. Colombo

David F. Putnam

TEST RESULTS

NAME U.S. Army Corps of Engineers ATTN Jim Reese DATE 7-26-79
Planning Branch, NPPEN-PL-2

ADDRESS P.O.Box 2946, Portland, OR 97208 DATE REPORTED 9-19-79
Winchester Bay

TEST	SOURCE	WB	WB	WB	WB
	DATE TESTED				
	SAMPLE #	Ocean	B	C	D
UNITS					
pH	pH Units	7.5	7.7	7.6	7.8
SPECIFIC CONDUCTIVITY	µ mho/cm	38,500	38,500	40,000	38,500
ARSENIC	mg/liter	0.01	0.01	< 0.01	0.01
CADMIUM	mg/liter	< 0.001	< 0.001	< 0.001	< 0.001
CHROMIUM	mg/liter	< 0.02	< 0.02	< 0.02	< 0.02
COPPER	mg/liter	< 0.05	< 0.05	< 0.05	< 0.05
LEAD	mg/liter	< 0.01	< 0.01	< 0.01	< 0.01
ZINC	mg/liter	0.08	0.08	0.06	0.06
MERCURY	mg/liter	< 0.001	< 0.001	< 0.001	< 0.001
AMMONIA, NITROGEN	mg/liter	0.06	1.13	0.39	1.47
OIL & GREASE	mg/liter	< 1	< 1	< 1	< 1
*HYDROCARBONS - GC	mg/liter	< 0.5	< 0.5	< 0.5	< 0.5
TOTAL PHOSPHORUS	mg/liter	0.11	0.10	0.19	0.17
VOLATILE SOLIDS	mg/liter	3,120	3,340	3,440	4,822
TOTAL SOLIDS	mg/liter	33,080	33,142	33,890	33,808
ENDRIN	mg/liter	< 0.00001	< 0.00001	< 0.00001	< 0.00001
LINDANE	mg/liter	< 0.00001	< 0.00001	< 0.00001	< 0.00001
TOXAPHENE	mg/liter	< 0.0001	< 0.0001	< 0.0001	< 0.0001
METHOXYCHLOR	mg/liter	< 0.00002	< 0.00001	< 0.00001	< 0.00001
2, 4 - D	mg/liter	< 0.001	< 0.001	< 0.002	< 0.001
2, 4, 5 - TP SILVEX	mg/liter	< 0.0003	< 0.0003	< 0.006	< 0.0003
PCB	ppb	< 1	< 1	< 1	< 1

* Gasoline thru diesel

APPROVED BY

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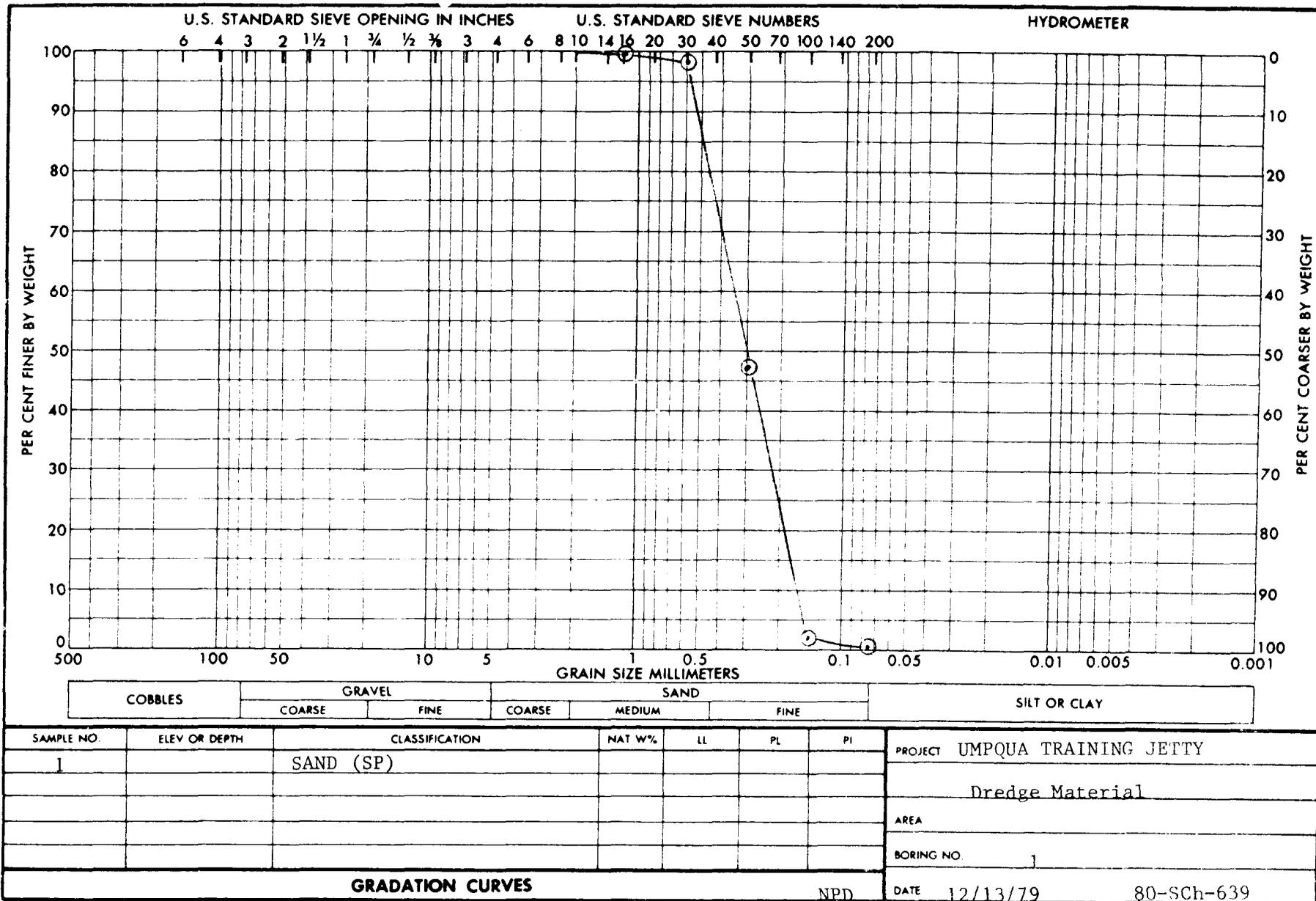
Winchester Bay

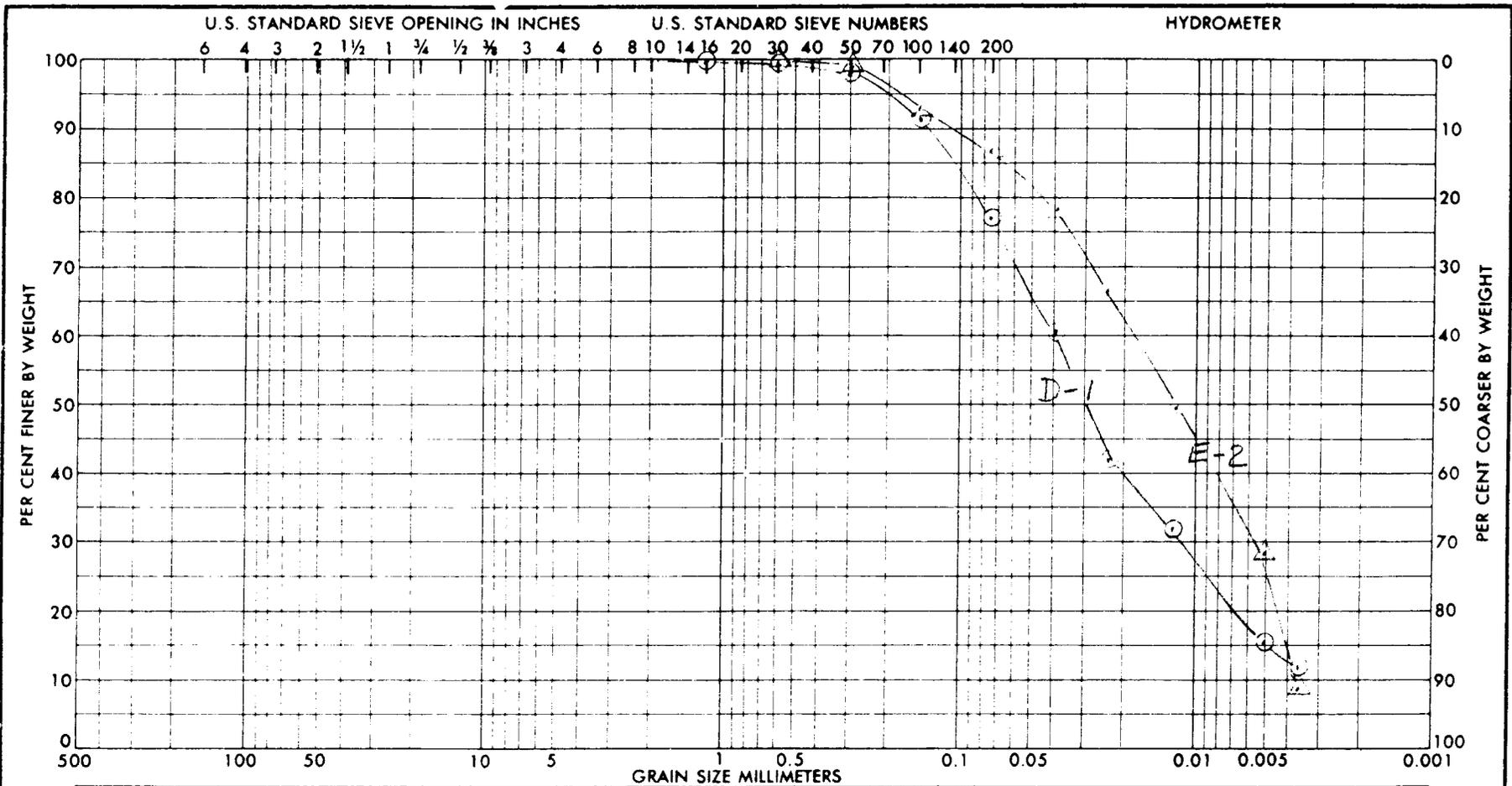
TEST	SOURCE	WB	WB		
	DATE TESTED				
	SAMPLE #	D 2	E		
	UNITS				
pH	pH Units	7.7	7.7		
SPECIFIC CONDUCTIVITY	μ mho/cm	38,500	38,000		
ARSENIC	mg/liter	< 0.01	0.01		
CADMIUM	mg/liter	< 0.001	< 0.001		
CHROMIUM	mg/liter	< 0.02	< 0.02		
COPPER	mg/liter	< 0.05	< 0.05		
LEAD	mg/liter	< 0.01	< 0.01		
ZINC	mg/liter	0.06	0.06		
MERCURY	mg/liter	< 0.001	< 0.001		
AMMONIA, NITROGEN	mg/liter	2.98	0.66		
OIL & GREASE	mg/liter	< 1	< 1		
*HYDROCARBONS - GC	mg/liter	< 0.5	< 0.5		
TOTAL PHOSPHORUS	mg/liter	0.13	0.13		
VOLATILE SOLIDS	mg/liter	3,620	3,588		
TOTAL SOLIDS	mg/liter	32,858	29,390		
ENDRIN	mg/liter	< 0.00001	< 0.00001		
LINDANE	mg/liter	< 0.00001	< 0.00001		
TOXAPHENE	mg/liter	< 0.0001	< 0.0001		
METHOXYCHLOR	mg/liter	< 0.00002	< 0.00002		
2, 4 - D	mg/liter	< 0.001	< 0.001		
2, 4, 5 - TP SILVEX	mg/liter	< 0.0003	< 0.003		
PCB	ppb	< 1	< 1		

* Gasoline thru diesel

APPROVED BY

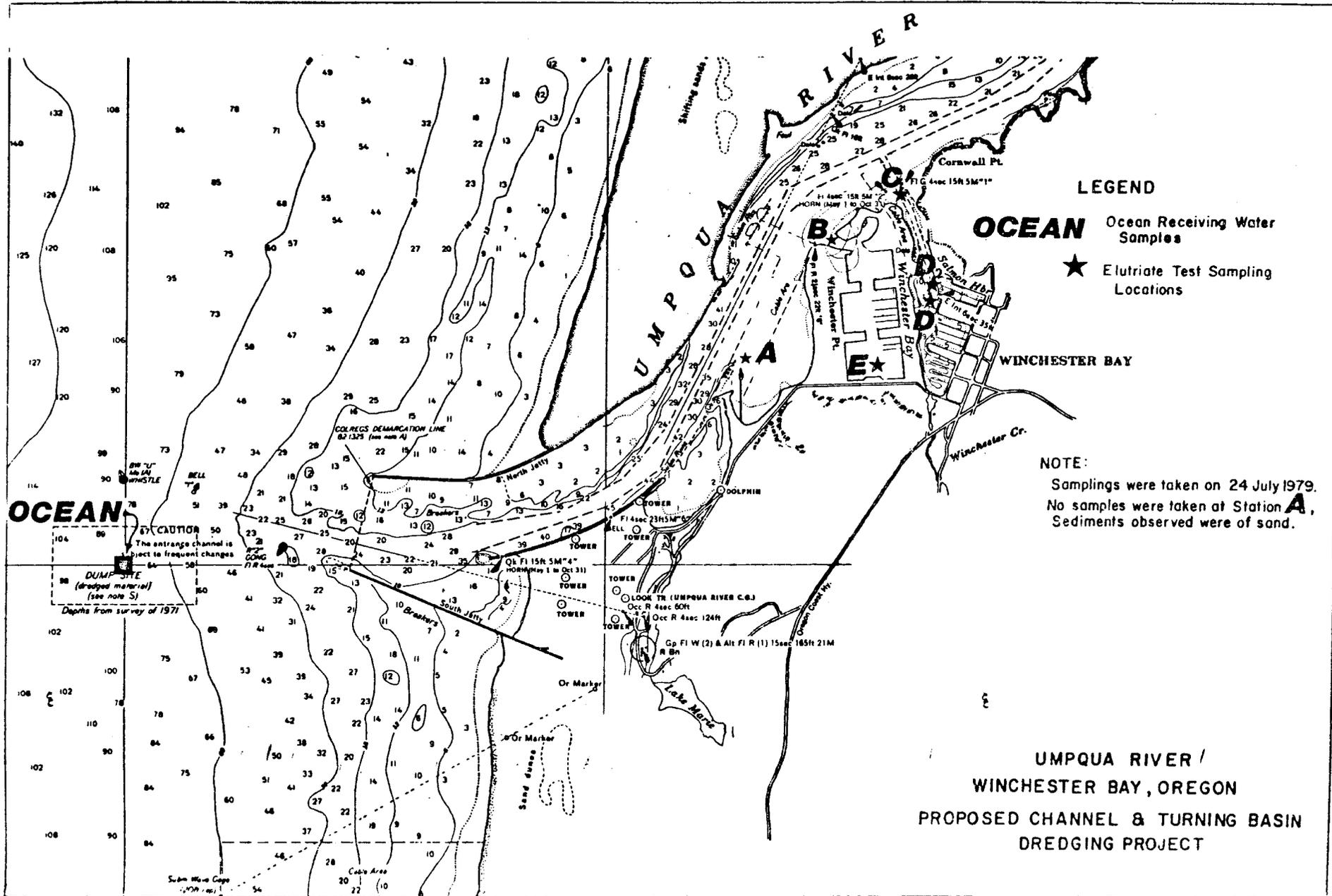






COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

SAMPLE NO	ELEV OR DEPTH	CLASSIFICATION	NAT W%	LL	PL	PI	PROJECT	
D-1		Sa. SILT (OL)					WINCHESTER BAY	
E-2		Sa. SILT (ML)					Dredge Material	
							AREA	
							BORING NO	
GRADATION CURVES							NPD	DATE 12/13/79
								80-Sch-639



OCEAN

OCEAN

WINCHESTER BAY

**UMPQUA RIVER /
 WINCHESTER BAY, OREGON
 PROPOSED CHANNEL & TURNING BASIN
 DREDGING PROJECT**

CAUTION
 The entrance channel is
 subject to frequent changes.

DUMP SITE
 (dredged material)
 (see note S)

Depths from survey of 1971

COLLEGS DEMARCATION LINE
 02 1325 (see note A)

Go Fl W (2) & Alt Fl R (1) 15sec 165ft 21M
 R Bn

Ql Fl 15R 5M "4"
 HORN May 1 to Oct 31

Fl 4sec 23H 5M "6"

Fl 4sec 15R 5M "1"

Fl 4sec 15R 5M "2"
 HORN (May 1 to Oct 31)

Shifting sands

Sand dunes

Sub. Wave Cape

Cape Area

Go Fl W (2) & Alt Fl R (1) 15sec 165ft 21M
 R Bn

LOOK TR (UMPQUA RIVER C&J)
 Occ R 4sec 60ft
 Occ R 4sec 124ft

Fl 4sec 23H 5M "6"

Fl 4sec 23H 5M "6"