CENPS-OP-DMMO

MEMORANDUM FOR RECORD 11 April 1997

SUBJECT: FINAL DETERMINATION ON THE SUITABILITY OF DREDGED MATERIAL DREDGED FROM THE WILLAPA BAR (MIDDLE CHANNEL) AND/OR THE NORTH CHANNEL BORROW SITE BY THE DEPARTMENT OF TRANSPORTATION (97-5-00281), EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT (CWA) AND SECTION 103 OF THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT (MPRSA) FOR OPEN-WATER DISPOSAL IN EITHER THE MIDDLE CHANNEL (SIDE CASTING) AND/OR THE NORTH CHANNEL AND ADJACENT BEACH.

1. This memorandum reflects the consensus determination of the Agencies' (U.S. Army Corps of Engineers, Department of Ecology, Department of Natural Resources, and the Environmental Protection Agency) with jurisdiction on dredging and disposal on the suitability of an estimated 5,000,000 cubic yards of dredged material from the bar near the middle channel and/or the north channel borrow site to be disposed in the north channel. The COLREGS demarcation line depicted on Figure 1 denotes the regulatory boundary separating Section 404 CWA jurisdiction from Section 103 MPRSA jurisdiction for the purposes of this project. All material dredged and disposed (e.g., including de minimus discharges associated with dredging) west of the line is evaluated under MPRSA, whereas all material dredged and disposed east of the line is evaluated under CWA.

2. The composition of the proposed maintenance material from the bar near the middle channel is as follows. A total of five samples (samples 002 - 006) were collected during February 1997 from the area proposed for dredging on both sides of the COLREGS line in both MPRSA and CWA jurisdictional areas (figure 2). These samples were east of the sample previously collected by the Corps from the western edge of the MPRSA jurisdictional area (sample 001)(figure 2). The results from these six analyses demonstrated that the material to be dredged was predominantly sand (e.g., 99.1 - 100% sand)(see enclosures 1a and 1b for sample analyses summary). Additional samples collected in 1993 north of the proposed channel and west of the COLREGS demarcation line (figure 2) were almost exclusively sand (e.g., 97.4, 99.4, 97.0, and 88.8% respectively). Therefore, the quantitative description of the proposed dredged material indicates that it is predominantly sand with very little fines. This is due to the hydrodynamics and high tidal current energy at the entrance bar, which precludes the settlement of fine grained material.

3. The material from the middle channel bar area meets exclusionary criteria under both MPRSA: 40 CFR 227.13 (subparagraphs (b)(1), (b)(3i), and (b)(3ii))(enclosure 2a) and CWA: 40 CFR 230.60 (subparagraphs a, b, and c) (enclosure 2b). The exclusionary criteria state that material meets the criteria and can be excluded from further testing if it is: (1) predominantly sand from a high current/wave energy area; and (2) dredging area is sufficiently removed from contaminant sources; and (3) where the disposal site is adjacent to the dredging site. The

dredging/disposal area is in a highly dynamic current/tidal area, and is free from any known sources of contamination. Based on the above information, the agencies with regulatory jurisdiction agree that the material from the middle channel does not require further testing under Section 103 of the MPRSA and Section 404 of the CWA. This factual finding represents a final determination, and reflects agency review of final analysis results.

4. The composition of the proposed maintenance material from the north channel borrow area is as follows. A total of three samples (samples 1, 2, 3) were collected during April 1997 from the borrow area proposed for dredging (figure 3). The results from these three analyses demonstrated that the material to be dredged was predominantly sand (e.g., 99.0 - 100% sand)(see enclosures 3 for sample analyses summary).

5. The material from the north channel borrow area meets exclusionary criteria under CWA: 40 CFR 230.60 (subparagraphs a, b, and c) (enclosure 2b). The exclusionary criteria state that material meets the criteria and can be excluded from further testing if it is: (1) predominantly sand from a high current/wave energy area; and (2) dredging area is sufficiently removed from contaminant sources; and (3) where the disposal site is adjacent to the dredging site. The dredging/disposal area is in a highly dynamic current/tidal area, and is free from any known sources of contamination. Based on the above information, the agencies with regulatory jurisdiction agree that the material from the north channel borrow area does not require further testing under Section 404 of the CWA. This factual finding represents a final determination, and reflects agency review of final analysis results.

6. This memorandum documents the final suitability of proposed dredged sediments from both the middle channel bar and the north channel borrow area under both CWA and MPRSA for unconfined open-water disposal in the north channel and the adjacent beach. It constitutes final agency approval of the suitability of the dredged material for unconfined open-water disposal. A public notice was issued for this project. During the public comment period, which follows a public notice, the resource agencies will provide input on the overall project. A final decision will be made after full consideration of agency input, and after an alternatives analysis is done under both Section 103 of the Marine Protection, Research and Sanctuaries Act and Section 404 (b)(1) of the Clean Water Act.

SUBJECT: FINAL DETERMINATION ON THE SUITABILITY OF DREDGED MATERIAL DREDGED FROM THE WILLAPA BAR (MIDDLE CHANNEL) AND/OR THE NORTH CHANNEL BORROW AREA BY THE DEPARTMENT OF TRANSPORTATION (97-2-00281), EVALUATED UNDER SECTION 404 OF THE CLEAN WATER ACT (CWA) AND SECTION 103 OF THE MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT (MPRSA) FOR OPEN-WATER DISPOSAL IN EITHER THE MIDDLE CHANNEL (SIDE CASTING) AND/OR IN THE NORTH CHANNEL AND ADJACENT BEACH.

Concur:

5/1/97 — David R. Kendall
Date — David R. Kendall, Ph.D
Seattle District Corps of Engineers

5-1-97 — Justine Barton
Date — Justine Barton
Environmental Protection Agency
Region 10

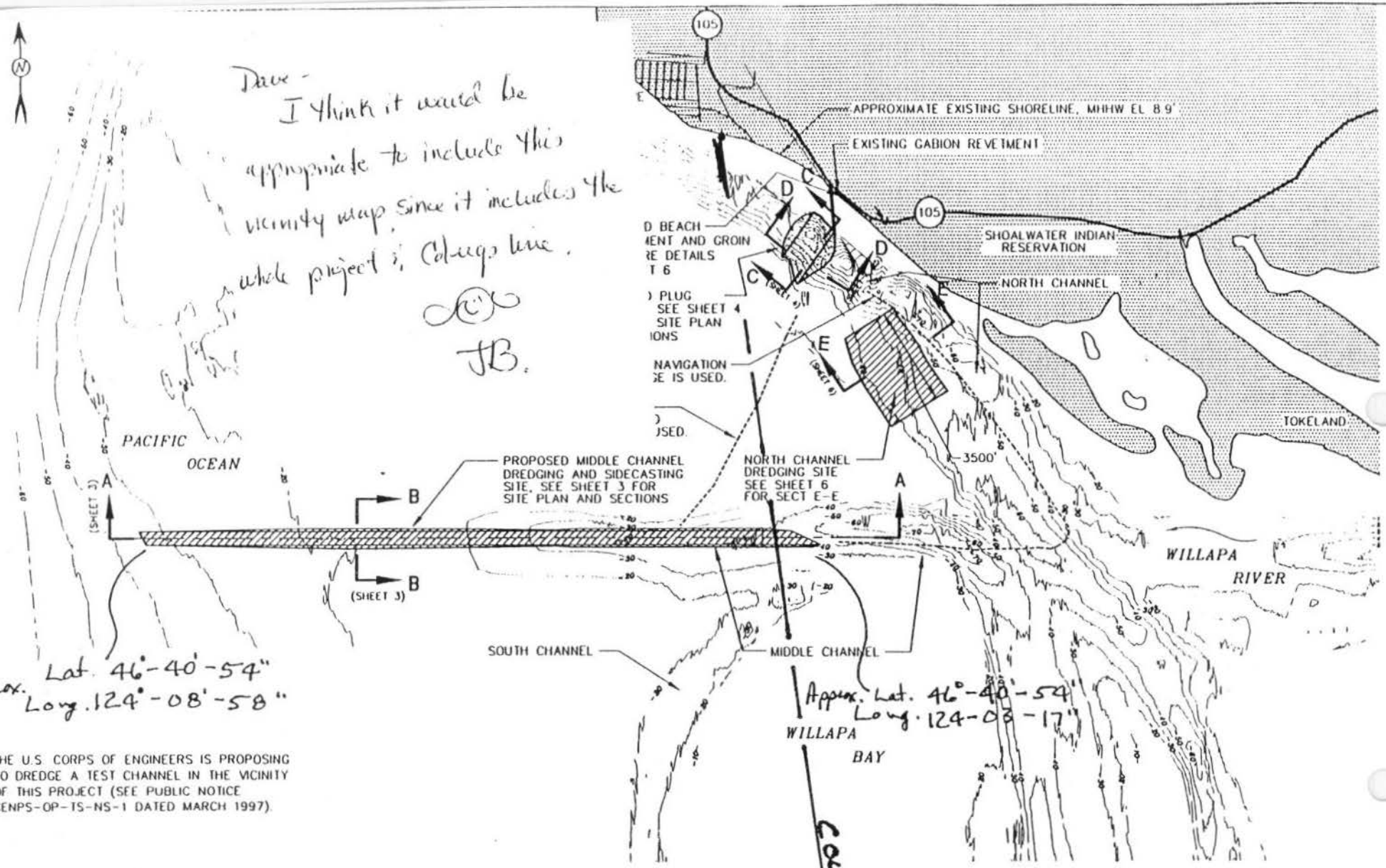
4/16/97 — Sandra L. Manning
Date — Sandra Manning
Washington Department of Ecology

22APR97 — Ted H. Benson
Date — Ted Benson
Washington Department of Natural Resources

Enclosures

Copies Furnished:
Jim Green, Corps
Hiram Arden, Corps
Pat Cagney, Corps
Justine Barton, EPA
Sandra Manning, Ecology
Ted Benson, DNR
DMMO File

Dave -
I think it would be appropriate to include this vicinity map since it includes the whole project & Colregs line.
JB.




THE U.S. CORPS OF ENGINEERS IS PROPOSING TO DREDGE A TEST CHANNEL IN THE VICINITY OF THIS PROJECT (SEE PUBLIC NOTICE CENPS-OP-TS-NS-1 DATED MARCH 1997).

NOTES:

1. DATUM: M.L.L.W. EL 0.0'
2. PURPOSE: BANK PROTECTION FOR SR 105
3. SURVEY PER U.S. ARMY C.O.E. 1996 SURVEY
4. ADJACENT PROPERTY OWNERS: (SEE SHEET 4)

PROJECT SITE PLAN

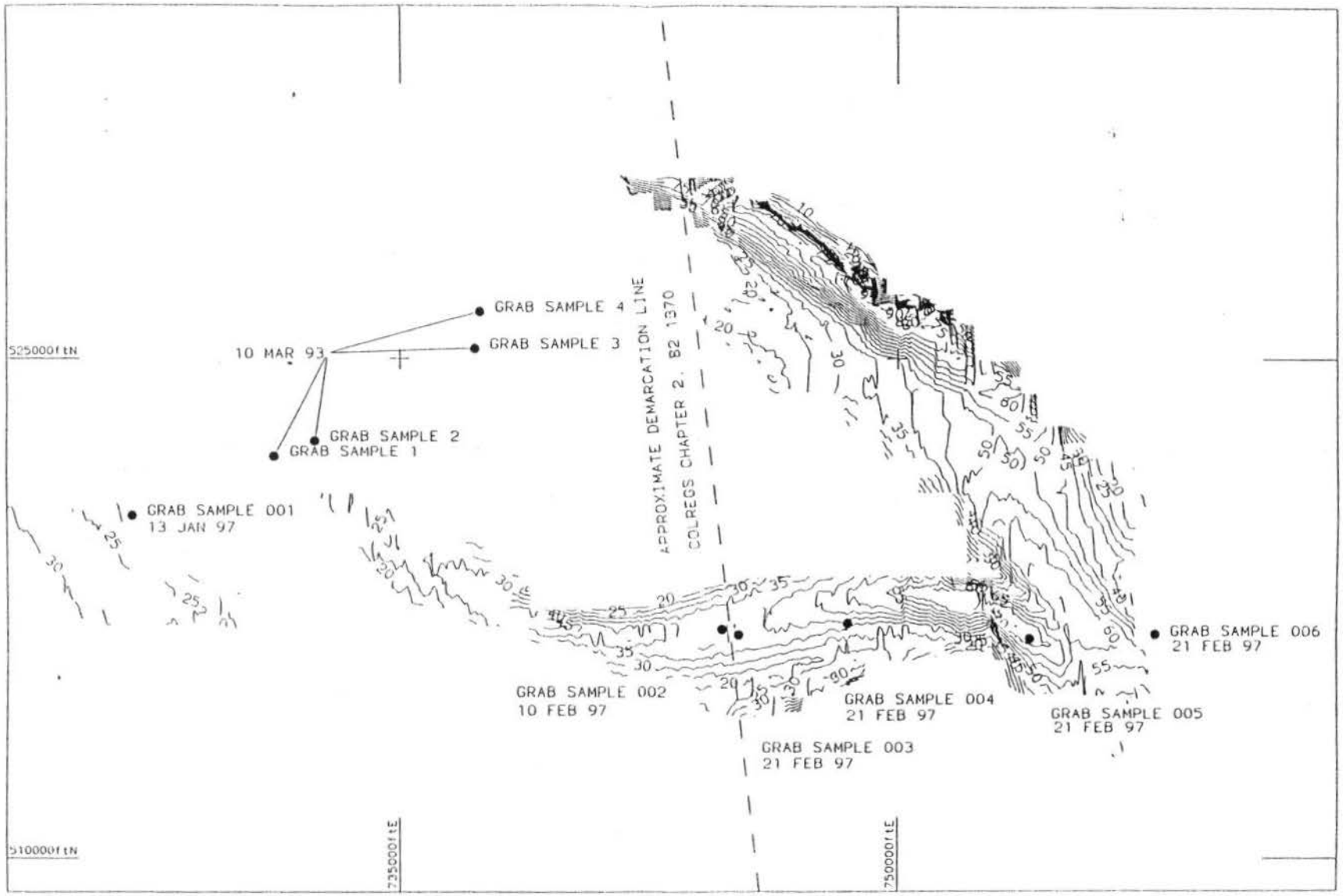
0 1250 2500 5000

SCALE IN FEET

T14N, R11W

97-5-00281

| | |
|---|---|
| PROPOSED: | DREDGING, DISPOSAL, BEACH NOURISHMENT, SINKING INERT OBJECTS & RIPRAP GROIN |
| IN: | WILLAPA BAY, PACIFIC OCEAN |
| NEAR: | TOKELAND; PACIFIC COUNTY, WA |
| APPLICANT: | WA STATE DEPT. TRANSPORTATION |
| DATE: | MAR 6 1997 SHEET: 2 OF 8 |




Origin 509000 000 N 723000 000 E
Scale 1 inch 3000 feet Elevation 0'

WILLAPA BAY SAMPLE LOC JAN-FEB 97

Surveyed by DAVE CAMPBELL
Reference NAD83, NOS

Figure 2.

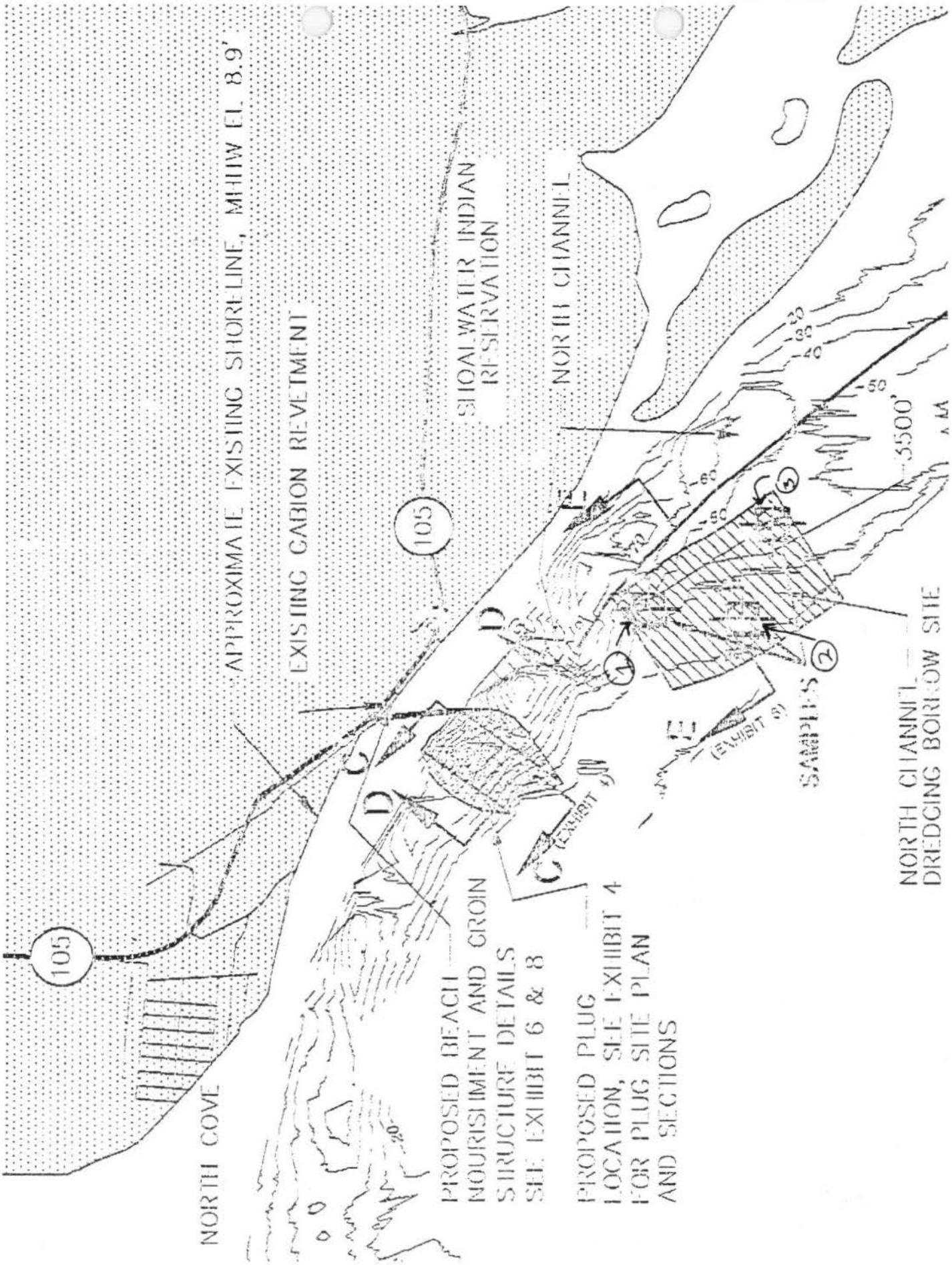

APPROXIMATE EXISTING SHORELINE, MHHW EL 8.9'
EXISTING GABION REVETMENT
SHOALWATER INDIAN RESERVATION
NORTH CHANNEL
105
105
NORTH COVE
PROPOSED BEACH NOURISHMENT AND GROIN STRUCTURE DETAILS SEE EXHIBIT 6 & 8
PROPOSED PLUG LOCATION, SEE EXHIBIT 4 FOR PLUG SITE PLAN AND SECTIONS
(EXHIBIT 4)
(EXHIBIT 6)
SAMPLES
NORTH CHANNEL DREDGING BORROW SITE
3500'
-20
-30
-40
-50
-60
-70
A
B
C
D
E

Figure 3

* * * CORPS OF ENGINEERS - NORTH PACIFIC DIVISION LABORATORY * * *

WILLAPA BAR CHANNEL 97-0130

Boring: Sample: 001 Depth: --- Lab No.: 13001

------ Sieve Analysis ------

| Sieve | Cumulative Grams Retained | Percent Passing |
|---|---|---|
| 5 In. | 0.00 | 100.0 |
| 2.5 In. | 0.00 | 100.0 |
| 1.25 In. | 0.00 | 100.0 |
| 5/8 In. | 0.00 | 100.0 |
| 5/16 In. | 0.00 | 100.0 |
| No. 5 | 0.00 | 100.0 |
| No. 10 | 0.32 | 100.0 |
| Pan | 992.39 | 0.0 |
| No. 18 | 0.12 | 99.9 |
| No. 35 | 0.47 | 99.6 |
| No. 60 | 6.23 | 95.0 |
| No. 120 | 121.72 | 3.1 |
| No. 230 | 125.49 | 0.1 |
| Pan | 125.63 | 0.0 |

No hydrometer analysis.

D85: 0.23 D60: 0.19 D50: 0.18 D30: 0.15 D15: 0.14 D10: 0.13 mm

Cu: 1.46 Cc: 0.93

Liquid Limit: NP Plasticity Index: NP

Fines Type Used for Classification: ML, SILT

Gravel: 0.0% Sand: 99.1% Fines: 0.9%

---------- ASTM D 2487 Classification ----------

SP Poorly graded SAND

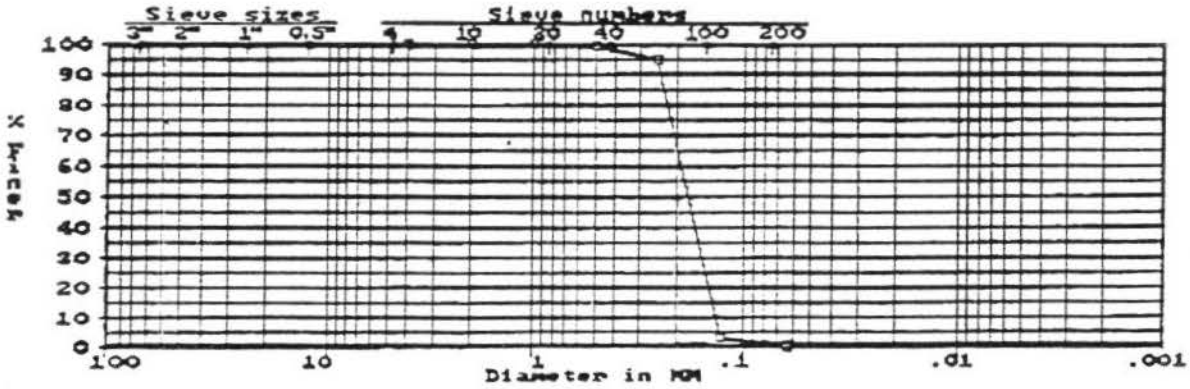
---------- TM 5-818-2 Frost Classification ----------

Frost Classification: NFS

---------- Comments ----------

-Outside sample,Willapa Bay.

-Date:13 December 1997




enclosure 1a

CENPP-PE-L (97-0130)

Willapa Bar Channel
Willapa Harbor, WA

Results of Dredge Test Analysis

| CENPD Sample No. | Resuspended Density, gm/L | Void Ratio | Volatile Solids,% | Specific Gravity | Soil Classification ASTM D2487 | Particle Roundness Grading |
|---|---|---|---|---|---|---|
| 001 | 1977 | 0.765 | 0.6 | 2.724 | SP | Subangular-subrounded |

CENPD Laboratory number 5671. Samples received 22 Jan 97.

3MAR97

| Post-it® Fax Note 7671 | Date 3/3/97 | # of pages ▶ 3 |
|---|---|---|
| To Hiram Arden | From Vladimir | |
| Co./Dept. | Co. | |
| Phone # | Phone # | |
| Fax # 764-3308 | Fax # | |


SOIL TECHNOLOGY, INC.
SPECIALIZING IN PHYSICAL SOIL TESTING

[illegible] NE [illegible] Road West
[illegible], WA [illegible]
[illegible]
[illegible]


TO : Pacific International Engineering
310 Waterfront Park Bldg.
144 Railroad Ave.
Edmonds, WA 98020

Date : 2-28-97
Job No. J-1040

ATTENTION : Vladimir Shepsis

SUBJECT : Willapa Bar Sediment Samples

RE : Sample Nos. #002, #003, #004, #005, #006

We are sending the following items:

| Date | Description |
|---|---|
| 2-28-97 | Particle Size Distribution Report (Tables 1,2) |
| 2-28-97 | Original Invoice #1431 |

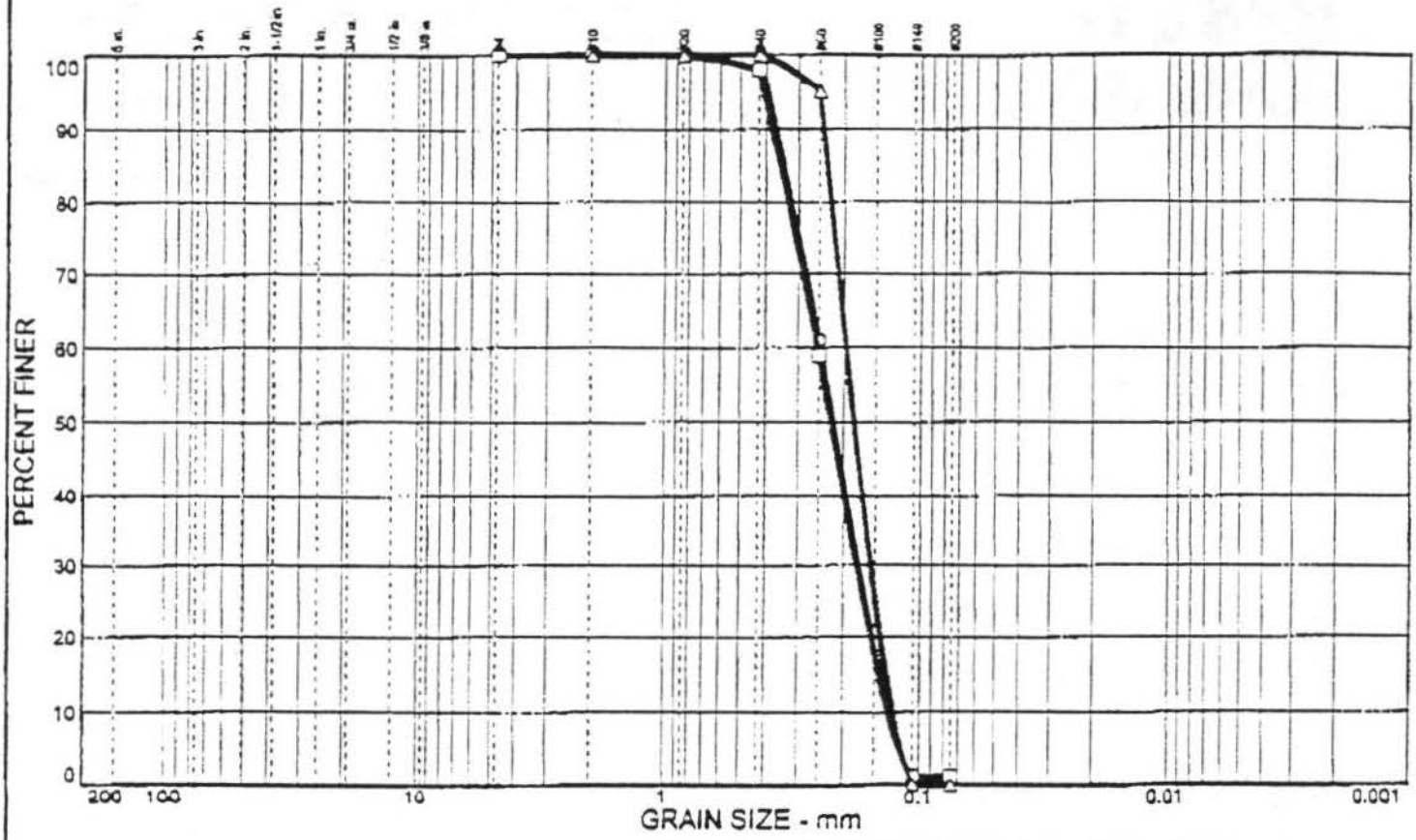
These are transmitted for your use.

Best Regards,
SOIL TECHNOLOGY, INC.

Richard G. Sheets,
Vice President

cc: Kendall
enclosure 1a

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 99 | | | SP | | | |
| □ | | | 99 | | | SM | | | |
| △ | | | 100 | | | SP | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | | 100 | |
| #10 | | 100 | 100 |
| #20 | 100 | 100 | 100 |
| #40 | 100 | 98 | 100 |
| #60 | 61 | 59 | 95 |
| #140 | 1 | 1 | 0 |
| #200 | 1 | 1 | 0 |

Gravel

Sand

SOIL DESCRIPTION

○ Poorly graded sand

□ Silty sand

△ Poorly graded sand

| | GRAIN SIZE | | |
|---|---|---|---|
| $D_{60}$ | 0.247 | 0.253 | 0.196 |
| $D_{30}$ | 0.174 | 0.177 | 0.156 |
| $D_{10}$ | 0.132 | 0.133 | 0.127 |
| | COEFFICIENTS | | |
| $C_c$ | 0.93 | 0.93 | 0.97 |
| $C_u$ | 1.87 | 1.90 | 1.55 |

REMARKS:

○

□

△

○ Source: Sample No.: #002 Elev./Depth:

□ Source: Sample No.: #003 Elev./Depth:

△ Source: Sample No.: #004 Elev./Depth:

**SOIL TECHNOLOGY, INC.**

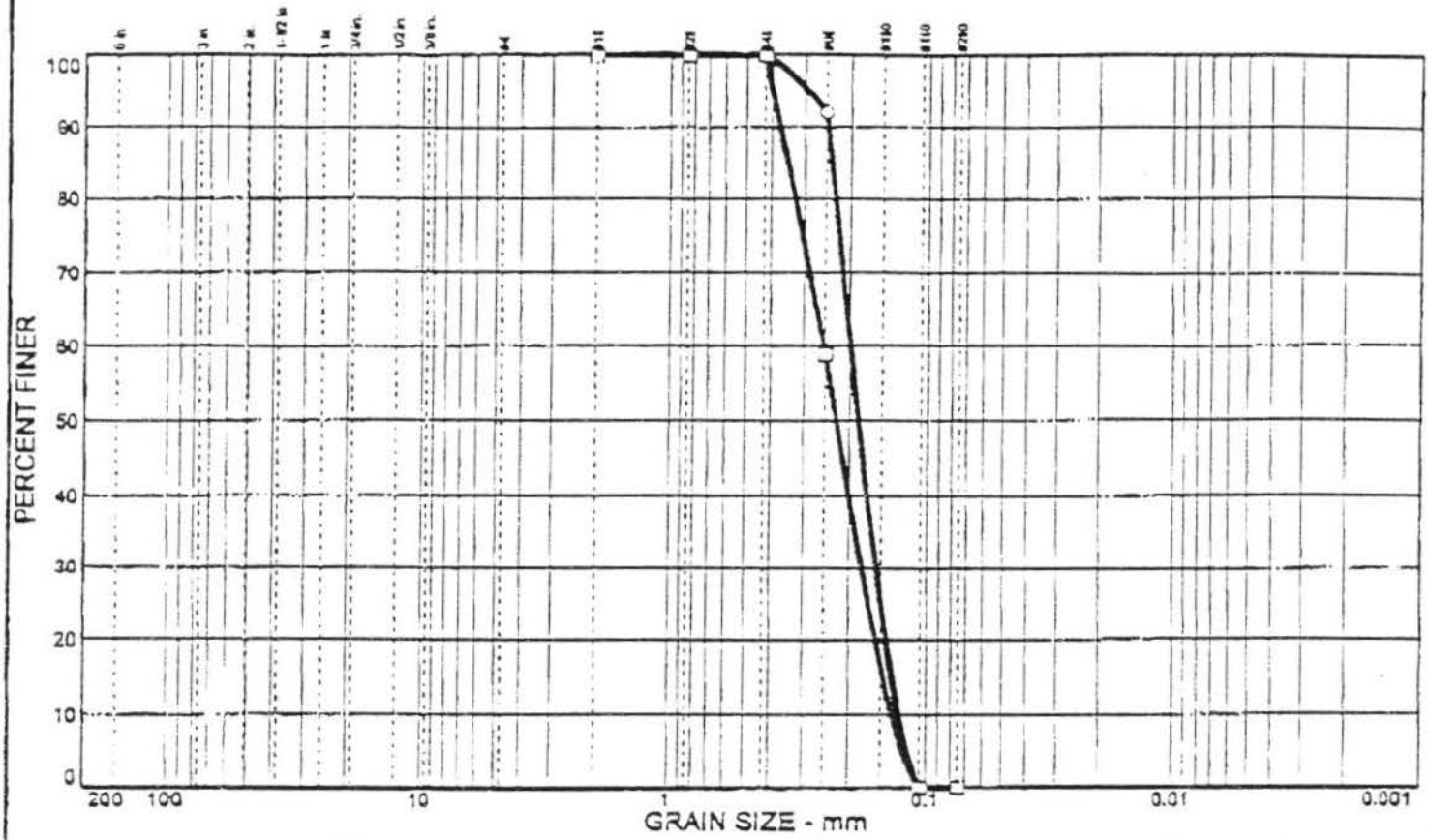
Client: PACIFIC INTERNATIONAL ENGINEERING

Project: WILLAPA BAR SEDIMENT SAMPLES

Project No.: WILLAPA BAR

Plate 1

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 100 | | | SP | | | |
| □ | | | 100 | | | SP | | | |
| | | | | | | | | | |

| SIEVE Inches Size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| | | | |

| | GRAIN SIZE | | |
|---|---|---|---|
| $D_{60}$ | 0.199 | 0.253 | |
| $D_{30}$ | 0.157 | 0.178 | |
| $D_{10}$ | 0.127 | 0.135 | |
| | COEFFICIENTS | | |
| $C_c$ | 0.97 | 0.93 | |
| $C_u$ | 1.56 | 1.87 | |

| SIEVE number Size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #10 | 100 | 100 | gravel |
| #20 | 100 | 100 | sand |
| #40 | 100 | 100 | |
| #60 | 92 | 59 | |
| #140 | 0 | 0 | |
| #200 | 0 | 0 | |

**SOIL DESCRIPTION**

○ Poorly graded sand

□ Poorly graded sand

**REMARKS:**

○

□

○ Source: Sample No.: #005 Elev./Depth:

□ Source: Sample No.: #006 Elev./Depth:

**SOIL TECHNOLOGY, INC.**

Client: PACIFIC INTERNATIONAL ENGINEERING

Project: WILLAPA BAR SEDIMENT SAMPLES

Project No.: WILLAPA BAR

Plate 2

A) Ocean Dumping (Section 103)

# MPRSA EXCLUSIONS
# (40 CFR 227.13)

(b)(1) - PREDOMINANTLY SAND, GRAVEL, OR ROCK
- PARTICLE SIZE LARGER THAN SILT
- HIGH ENERGY ENVIRONMENT

(b)(2) - BEACH NOURISHMENT OR RESTORATION
- SAND, GRAVEL, OR SHELL
- PARTICLE SIZE COMPATIBLE WITH RECEIVING BEACHES

(b)(3)(i) - DREDGED MATERIAL SAME AS DISPOSAL SITE

(b)(3)(ii) - DREDGING SITE FAR REMOVED FROM POLLUTION SOURCES

WRIGH002

B) Inland Testing (Section 404)

# CWA Exclusions
# 40 CFR 230.60(a),(b),(c), and (d)

(a) - Sand, gravel, other inert material
- High current and/or wave energy

(b) - Sufficiently removed form contaminant sources

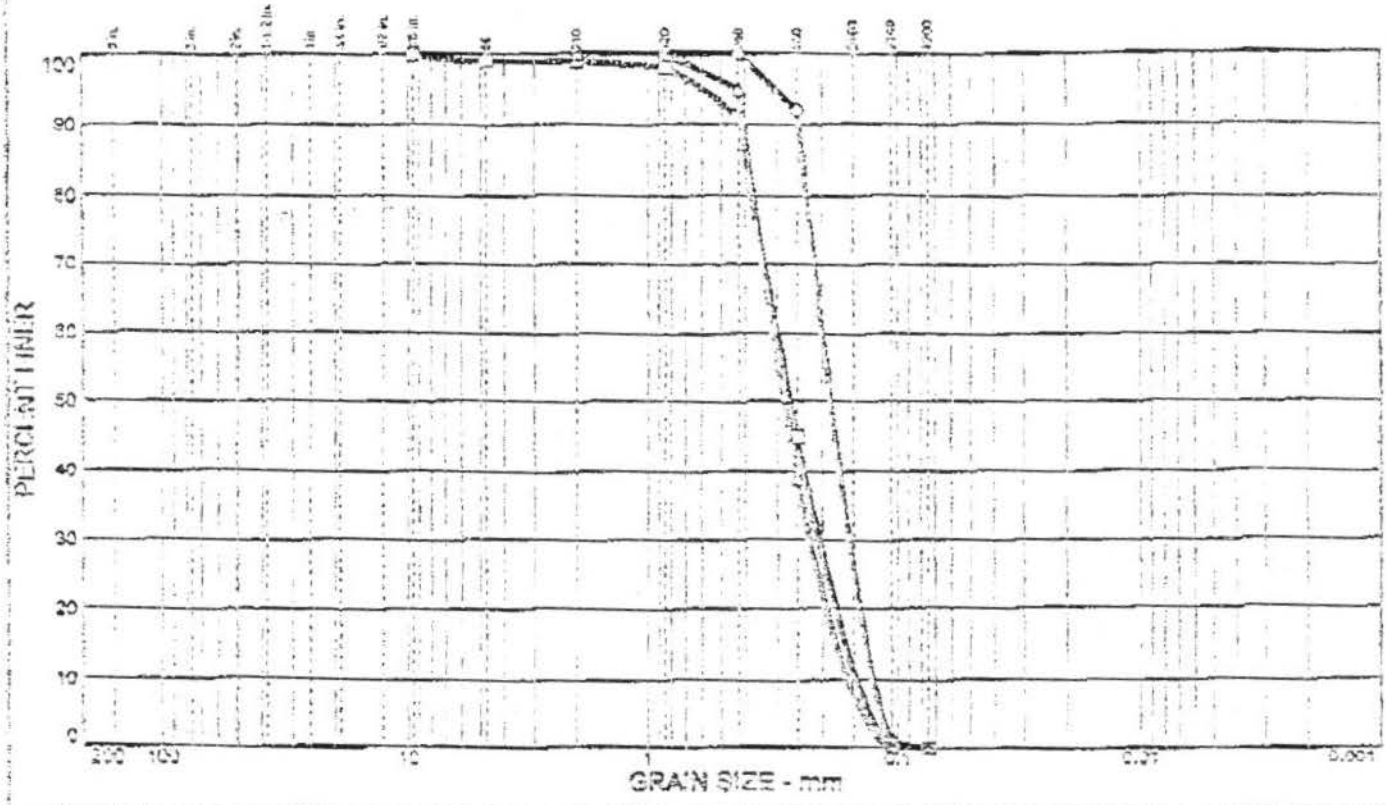
(c) - Dredging and discharge adjacent
- Subject to same contaminants
- Dissolved/suspended management

(d) - Contaminant management at site
- No transport beyond site

WWRI025

enclosure 2

# PARTICLE SIZE DISTRIBUTION TEST REPORT




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 100 | | | SP | | | |
| □ | | 1 | 99 | | | SP | | | |
| △ | | | 100 | | | SP | | | |

| SIEVE size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/8" | | 100 | |

| SIEVE number | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | | 99 | |
| #10 | | 98 | 100 |
| #20 | 100 | 98 | 100 |
| #40 | 100 | 95 | 95 |
| #60 | 97 | 45 | 39 |
| #140 | [illegible] | 0 | 0 |
| #200 | 0 | 0 | 0 |

SOIL DESCRIPTION

○ Poorly graded sand

□ Poorly graded sand

△ Poorly graded sand

| | GRAIN SIZE ○ | □ | △ |
|---|---|---|---|
| $D_{60}$ | 0.199 | 0.299 | 0.311 |
| $D_{30}$ | 0.156 | 0.205 | 0.224 |
| $D_{10}$ | 0.126 | 0.147 | 0.159 |
| | **COEFFICIENTS** | | |
| $C_c$ | 0.98 | 0.96 | 1.02 |
| $C_u$ | 1.58 | 2.04 | 1.96 |

REMARKS

○

□

△

○ Source: Sample No.: 1 Elev./Depth:

□ Source: Sample No.: 2 Elev./Depth:

△ Source: Sample No.: 3 Elev./Depth:

**SOIL TECHNOLOGY, INC.**

Client: Pacific International Engineering

Project: Willapa Sediments

Project No.: 8700-66[illegible]

Plate 1

enclosure 3