CENWS-OD-ME-DMMO

MEMORANDUM FOR: RECORD **July 8, 2013**

SUBJECT: TIER 1 DETERMINATION REGARDING THE SUITABILITY OF DREDGED MATERIAL FOR BENEFICIAL USE FROM CAPE GEORGE MARINA, DISCOVERY BAY, JEFFERSON COUNTY, WASHINGTON.

1. **Introduction**. This memorandum reflects the consensus Tier 1 determination of 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) regarding the suitability of dredged material from Cape George Marina for beneficial use.

2. **Background**. Cape George Colony Club is a private residential community and marina located on Discovery Bay, west of Port Townsend (Figure 1). The entrance channel requires annual dredging to provide adequate depth for access to the marina. The source of material accumulating in the entrance channel is erosion from feeder bluffs to the north of the marina. The eroded material, consisting primarily of sand and cobble, is transported toward the marina by north-south littoral drift. The accumulated sand and cobble is dredged with a land or beach-operated track-mounted backhoe or front-end loader at low tide and placed as beach nourishment along the seawall to the south of the entrance channel. Past dredging events have been restricted to the entrance channel and have consisted of 1,000 cubic yards or less. The DMMP agencies have found this material to be suitable for beneficial use under the Clean Water Act exclusionary criteria.

3. **Proposed Dredging**. In addition to the normal dredging of the entrance channel (1,000 cubic yards), the Cape George Colony Club proposes to conduct a test dredge of 3,000 cubic yards from the north side of the north jetty (to prevent this material from being transported into the entrance channel) and 1,000 cubic yards from the boat basin itself. Material from the entrance channel and north side of the north jetty will be excavated at extreme low tide and the material hauled to a site south of the marina for beach nourishment. Material from the boat basin will be removed with a hydraulic suction dredge, placed on a parking lot south of the marina for dewatering, and then transported to the beach nourishment placement site (Figure 2).

4. **Applicability of the Exclusionary Criteria**. The CWA Section 404(b)1 Guidelines for Specification of Disposal Sites for Dredged or Fill Material (CFR 40 Section 230.60, subparagraphs a and b) include exclusionary criteria with regard to testing. The Guidelines state that (1) dredged or fill material is most likely to be free from chemical, biological, or other pollutants where it is composed primarily of sand, gravel, or other naturally occurring inert material. Dredged material so composed is generally found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels; and (2) the extraction site shall be examined in order to assess whether it is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants (EPA, 1980). Dredged material that meets these two guidelines may be excluded from further testing. Testing may also not be necessary "where the discharge site is adjacent to the excavation site and subject to the same sources of sources of contaminants, and materials at the two sites are substantially similar." The DMMP agencies agreed that the exclusionary criteria continue to apply to material in

the entrance channel and the test harvest area north of the north jetty, but were less certain of the material that has settled out within the boat basin. In order to determine the applicability of the exclusionary criteria to the material inside the marina, the dredging proponent was required to conduct some limited sampling and physical testing.

5. **Sampling**. The DMMP agencies required sampling from the two shoaling areas inside the marina that will be dredged during the next dredging event (see Figure 3). One core sample was collected from Area 1 and two core samples were collected from Area 2. The samples from Area 2 were composited for analysis. 1.5-inch diameter core tubes were driven to a depth of 5 feet with a manually-operated slide-hammer at each of the three sampling stations. The Area 1 and Area 2 samples were submitted to a testing laboratory for analysis of grain size and total organic carbon (TOC).

6. **Grain-size and TOC Analysis**.

   The testing results were as follows:

Parameter	Area 1	Area 2
gravel (%)	0.7	8.9
sand (%)	85.4	80.6
fines content (%):	13.8	10.5
TOC (%):	0.765	0.937

   The grain-size analysis showed that the dredged material in the boat basin is predominantly sand with low fines content.

7. **Exclusionary Status Determination**. The DMMP agencies have traditionally used 20 percent fines and 0.5% TOC as the upper limits for determining eligibility for exclusionary status. The fines content from the boat basin samples met the grain-size criterion for exclusionary status. The TOC content for the two samples was above 0.5%, however the testing lab found visible traces of woody material in one of the sediment samples. The presence of small amounts of woody material could explain the slightly elevated TOC content.

   With respect to the proximity of Cape George Marina to sources of contamination, as was noted previously, the source of shoaling in the boat basin is eroded material from feeder bluffs to the north of the marina, transported in a drift cell that experiences net north-to-south movement. This drift cell extends from approximately 1.2 miles north of the entrance channel and continues 1.9 miles south of the marina. There are no point sources updrift of the entrance channel, the land cover in this area being a mix of residential and woodlands. The marina has no fueling or boat maintenance facilities. Therefore the DMMP agencies determined that Cape George Marina is sufficiently removed from sources of pollution to provide reasonable assurance that the proposed discharge material is not a carrier of contaminants.

   In addition to meeting the exclusionary criteria, the proposed dredging operation simply continues the transport of material from north to south within the drift cell, placing “like on like” within a small geographic area. In the absence of the marina and entrance channel, this same north-to-south

sediment transport would take place as a result of local hydrodynamic forces. The dredging operation simply keeps the material moving within the littoral drift cell.

In summary, the DMMP agencies have determined that dredged material from the Cape George Marina meets the exclusionary criteria under the Clean Water Act and results in "like on like" deposition. Therefore, additional chemical testing is not required.

8. **Sediment Exposed by Dredging**. Based on the exclusionary status of the dredged material, the DMMP agencies believe the probability that the sediment exposed by dredging might have concentrations of chemicals of concern that exceed the Sediment Management Standards Sediment Quality Standards (Ecology, 1995) is very low. The agencies agreed that no testing of the newly exposed sediment is necessary.

9. **Project Summary**. Table 1 includes project summary and tracking information.

Table 1. Project Summary

Project ranking (after testing)	Exclusionary
Dredged volume	5,000 cubic yards
Dredged depth	Entrance channel: -3.5 feet MLLW Marina: -5.0 feet MLLW
SAP received	May 21, 2013
SAP approved	May 25, 2013
Sampling date	June 4, 2013
Data report received	July 2, 2013
EIM study ID	CGCCM13
USACE Permit Application Number	NWS-2013-108
Frequency Determination (7 years)	June 2020

10. **References**.

Ecology, 1995. *Sediment Management Standards – Chapter 173-204 WAC*. Washington State Department of Ecology, December 1995.

EPA, 1980. *40 CFR Part 230 Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, Environmental Protection Agency, December 1980.

9. Agency Signatures.

The signed document is on file in the Dredged Material Management Office.

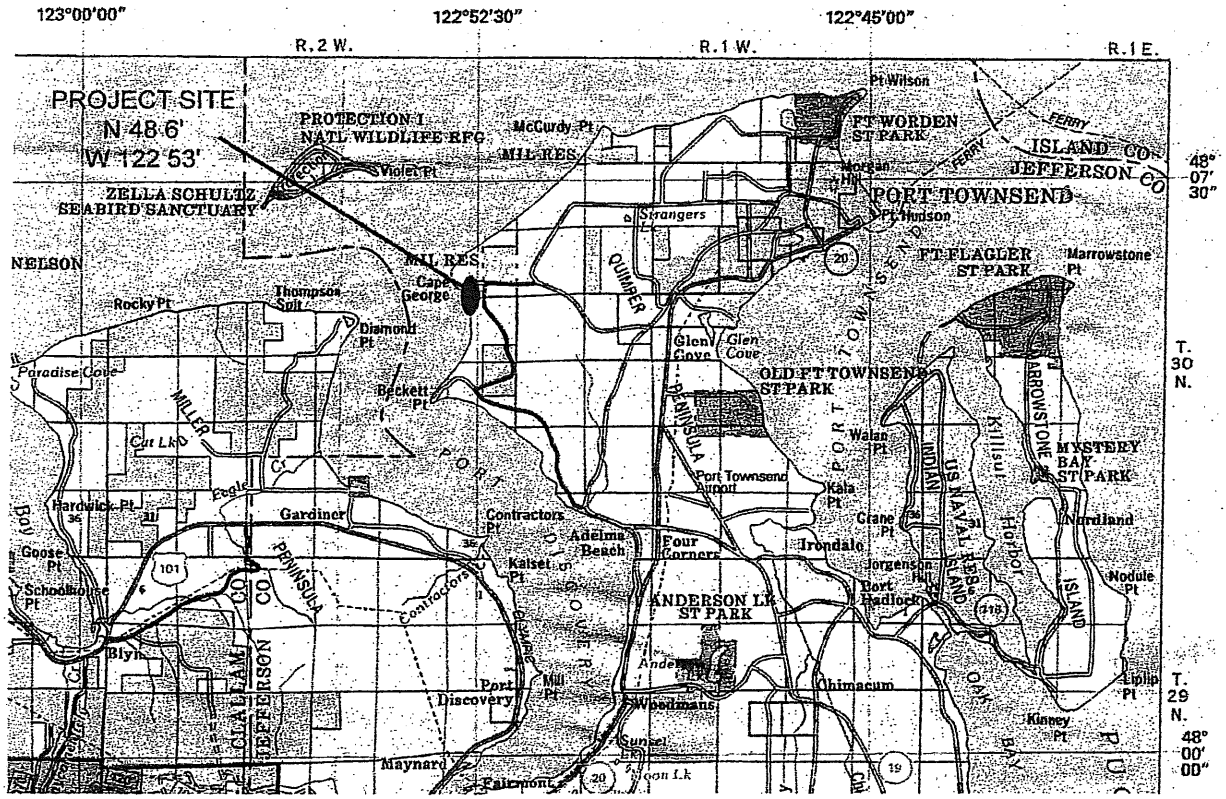
Concur:

_____	_____
Date	David Fox, P.E. - Seattle District Corps of Engineers
_____	_____
Date	Erika Hoffman - Environmental Protection Agency
_____	_____
Date	Laura Inouye, Ph.D. - Washington Department of Ecology
_____	_____
Date	Celia Barton - Washington Department of Natural Resources

Copies furnished:

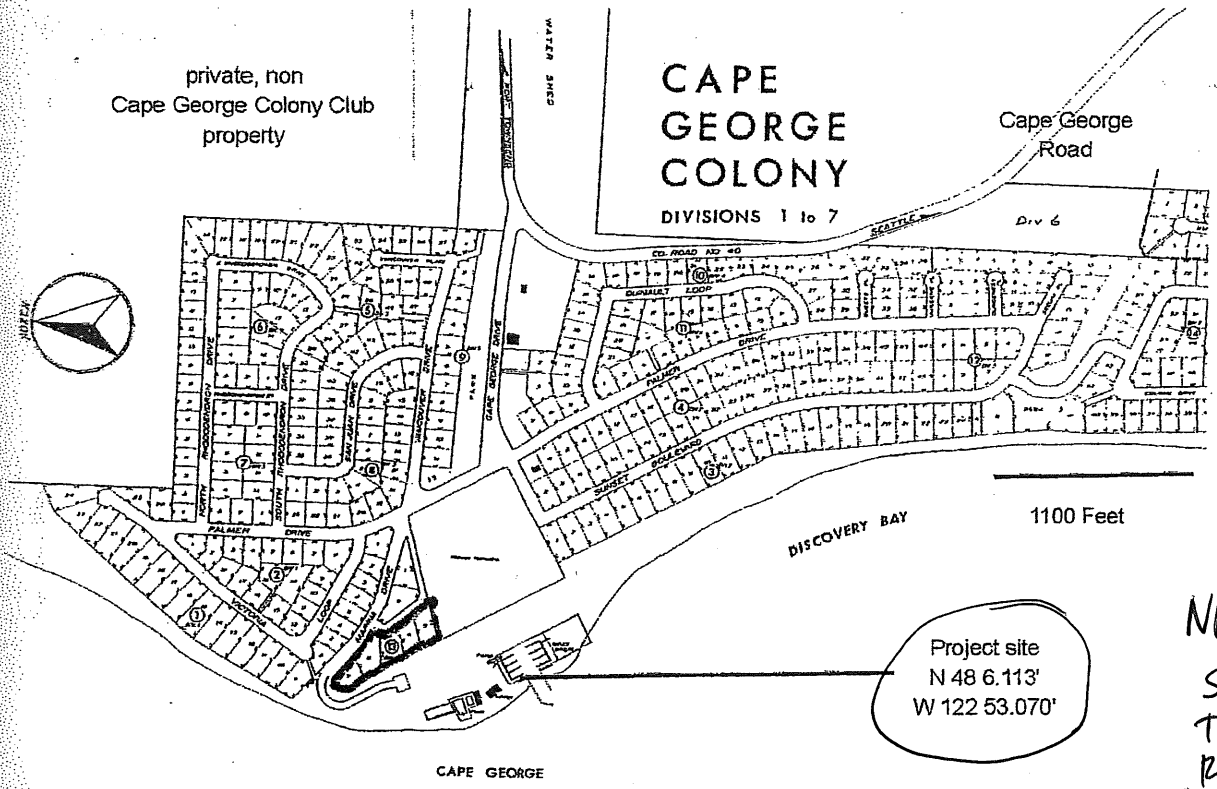
DMMP signatories
Darren Habel, Seattle District Regulatory
Gary Rossow, Cape George Colony Club
Art Burke, Cape George Colony Club

Figure 1



Vicinity Maps

Port Townsend is about 3 miles from the project site



NWS-2013-108
S: 12
T: 30N
R: 2W

Project 2
Cape George Colony, Inc

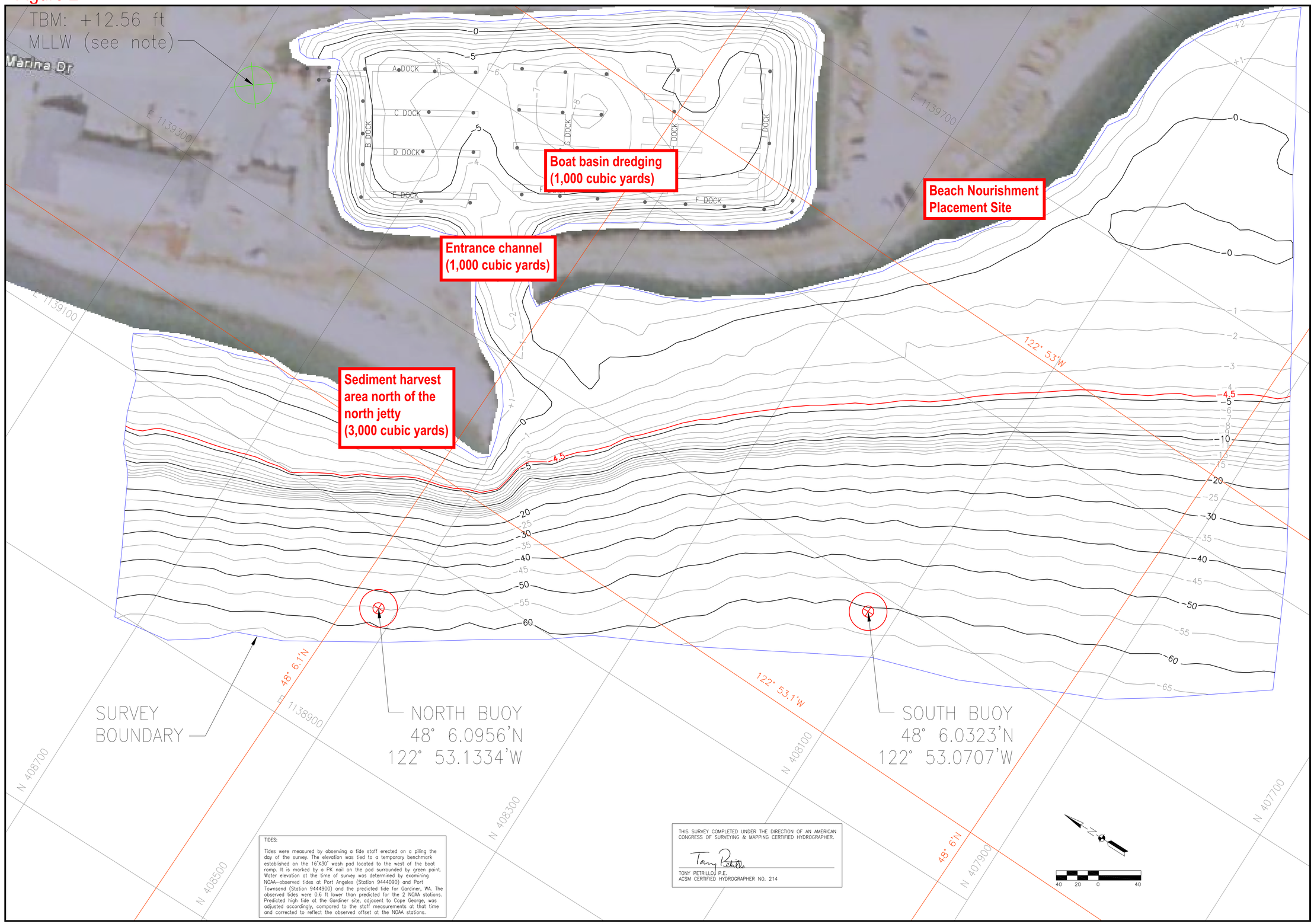
Proposed entrance channel dredging
& dock maintenance

61 Cape George Dr
Port Townsend, Jefferson County
Wasjomgtpm 98368

10/4/12

Sheet 1 of 16

Figure 2



TIDES:

Tides were measured by observing a tide staff erected on a piling the day of the survey. The elevation was tied to a temporary benchmark established on the 16"X30" wash pad located to the west of the boat ramp. It is marked by a PK nail on the pad surrounded by green paint. Water elevation at the time of survey was determined by examining NOAA-observed tides at Port Angeles (Station 9444090) and Port Townsend (Station 9444900) and the predicted tide for Gardiner, WA. The observed tides were 0.6 ft lower than predicted for the 2 NOAA stations. Predicted high tide at the Gardiner site, adjacent to Cape George, was adjusted accordingly, compared to the staff measurements at that time and corrected to reflect the observed offset at the NOAA stations.

THIS SURVEY COMPLETED UNDER THE DIRECTION OF AN AMERICAN CONGRESS OF SURVEYING & MAPPING CERTIFIED HYDROGRAPHER.

TONY PETRILLO P.E.
ACSM CERTIFIED HYDROGRAPHER NO. 214

Cape George Colony Club
61 Cape George Drive
Port Townsend, WA 98368
(360) 385-1177

Cape George Marina
Bathymetric Contour Map

Temporary Benchmark Note

A temporary benchmark was located on a concrete wash pad to the west of the boat ramp. It is marked by a PK nail 8.0 ft south of the northern edge and 1.4 ft west of the eastern edge of the wash pad and circled by green paint. A scaled position is located on the drawing. An approximate elevation of 12.56 ft MLLW was extracted from the tidal calculation described in the TIDES box. Based on the tidal measurements it is estimated to be accurate to ±0.5 ft.

LEGEND

FEATURES

- −10 — CONTOUR − 10 FT INTERVAL (BELOW −15 FT)
- CONTOUR − 5 FT INTERVAL (BELOW−15 FT)
- −5 — CONTOUR − 5 FT INTERVAL (ABOVE −15 FT)
- CONTOUR − 1 FT INTERVAL (ABOVE −15 FT)
- −4.5 — TIDELAND BOUNDARY
- PILING

EQUIPMENT

GPS: Trimble Ag132 DGPS

DEPTH SOUNDER: Odom Hydrotrac

NAVIGATION DATA ACQUISITION SOFTWARE: Hypack Max Version 4.3

VESSEL: Local Inflatable

SURVEY PERFORMED BY:

BLUE WATER ENGINEERING SVCS, INC.
PO Box 232
Port Townsend, WA 98368
(360) 385-2680
bluewater@seanet.com

SURVEY DATUMS

HORIZONTAL REFERENCES:
WA State Plane−North Zone
(NAD 83/91)
Example: N 407900
Geographic Coordinates:
Example: 122° 53.1'N

VERTICAL DATUM:
Mean Lower Low Water (MLLW)

UNITS: U.S. Survey Feet

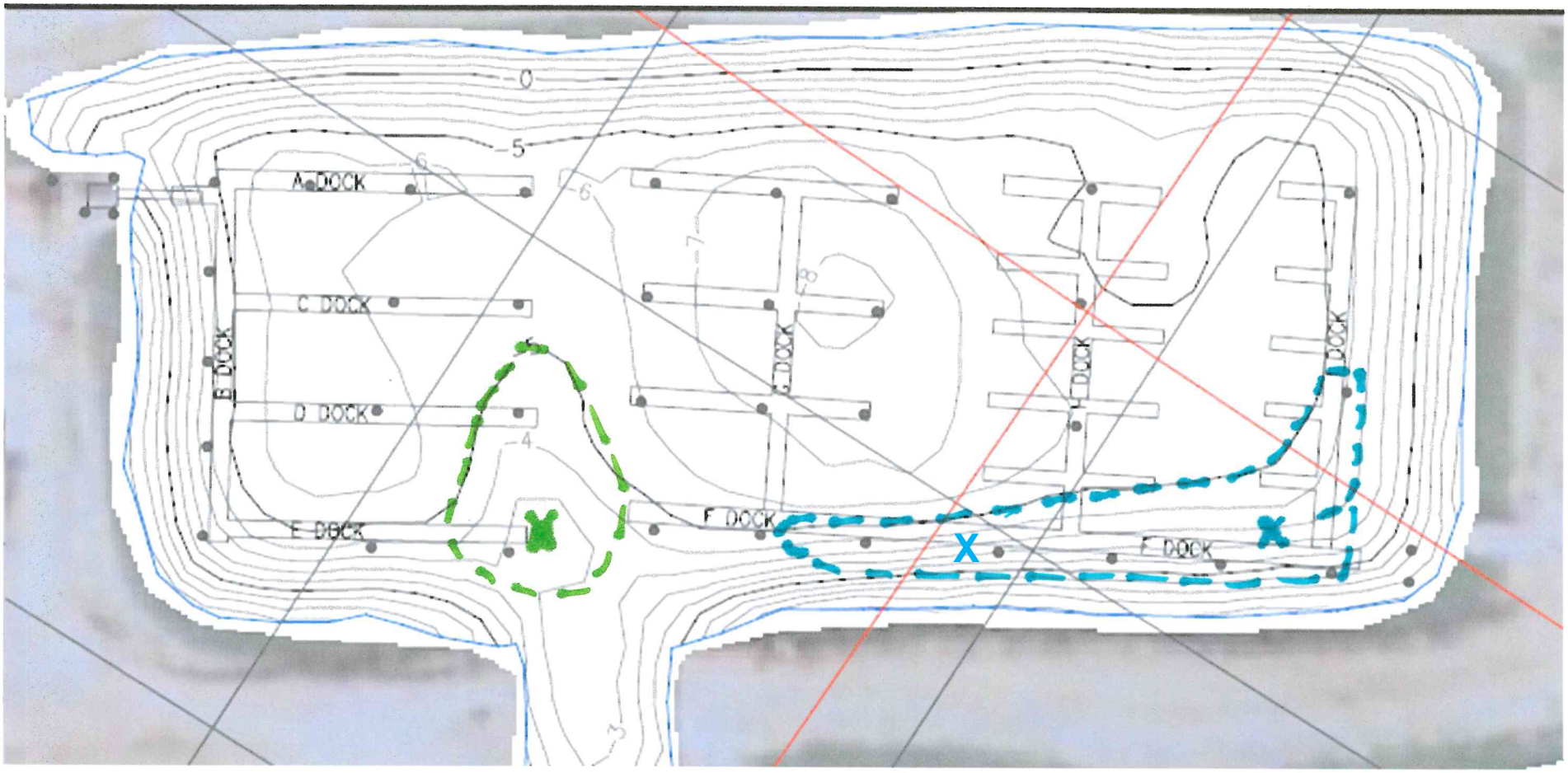
SCALE: 1" = 40'

DRAWING DATE	05/17/10
DRAWN BY	Autoscan Inc.
VERSION	AutoCAD 2000
CHECKED BY	TP
SURVEY DATE	05/11/10

Drawing file: CG-AC400-v2000.dwg May 26, 2010 - 1:36pm AutoCAD v2000

Figure 3

BASIN DREDGE AREAS + SAMPLING SITES



AREA 1 - - - SITE 1 X

AREA 2 - - - SITE 2 X