

**F00541**

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SERVICE

## DESCRIPTIVE REPORT

Type of Survey           Navigable Area          

Field No                   NRT3-5-02-07          

Registry No.                   F00541          

### LOCALITY

State                   Washington          

General Locality           Bremerton          

Locality           Sinclair Inlet to          

                  Rich Passage          

**2007**

CHIEF OF PARTY  
Kathryn Simmons  
NOAA/NRT3

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DATE



# Descriptive Report to Accompany F00541

Scale 1:5000

2007

Navigation Response Team 3

Team Leader: Kathryn Simmons

## A. Area Surveyed

This navigable area hydrographic survey was conducted in accordance with Port Instructions OPR-N396-NRT3-07, Washington, Bremerton, Sinclair Inlet to Rich Passage, issued May 10, 2007. The Regional Navigation Manager received a request from the United States Navy, for a hydrographic survey to be done in and around the Puget Sound Naval Shipyard and Naval Base Kitsap – Bremerton. The last survey in the area was from 1998, but it did not cover the berthing areas and their approaches. Also in 2000, dredging was done along several piers and a turning basin. Vessels going into the base have drafts up to 39 feet, while the charted depths in this area range from 33 to 44 feet. A subsequent request was received for new hydrography in Rich Passage and off of Point White. Two Field Sheets were created: one for Sinclair Inlet and one for Rich Passage and Point White as shown below: *Concur.*

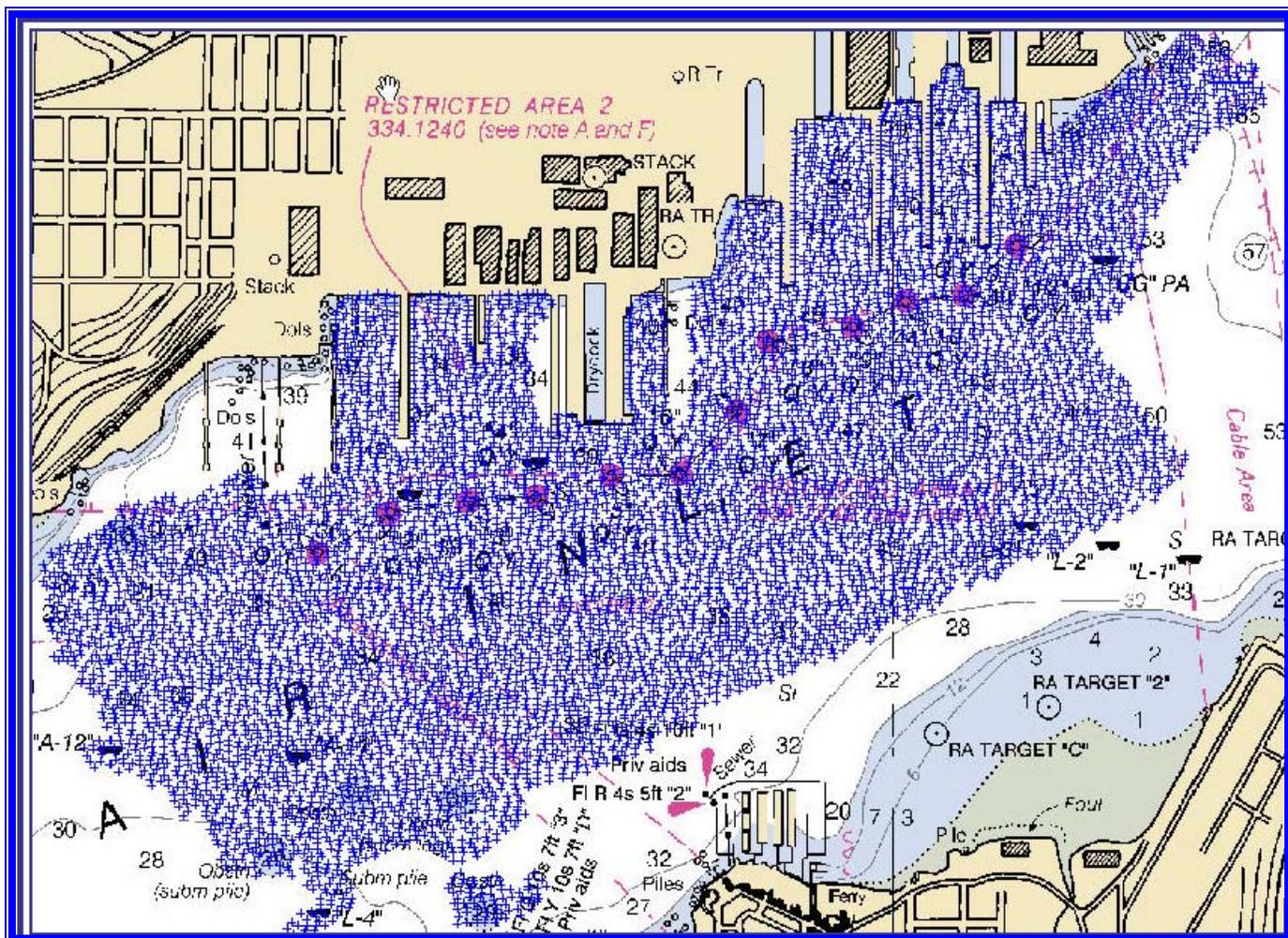


Figure 1 - Chart 18452 (Sinclair Inlet)

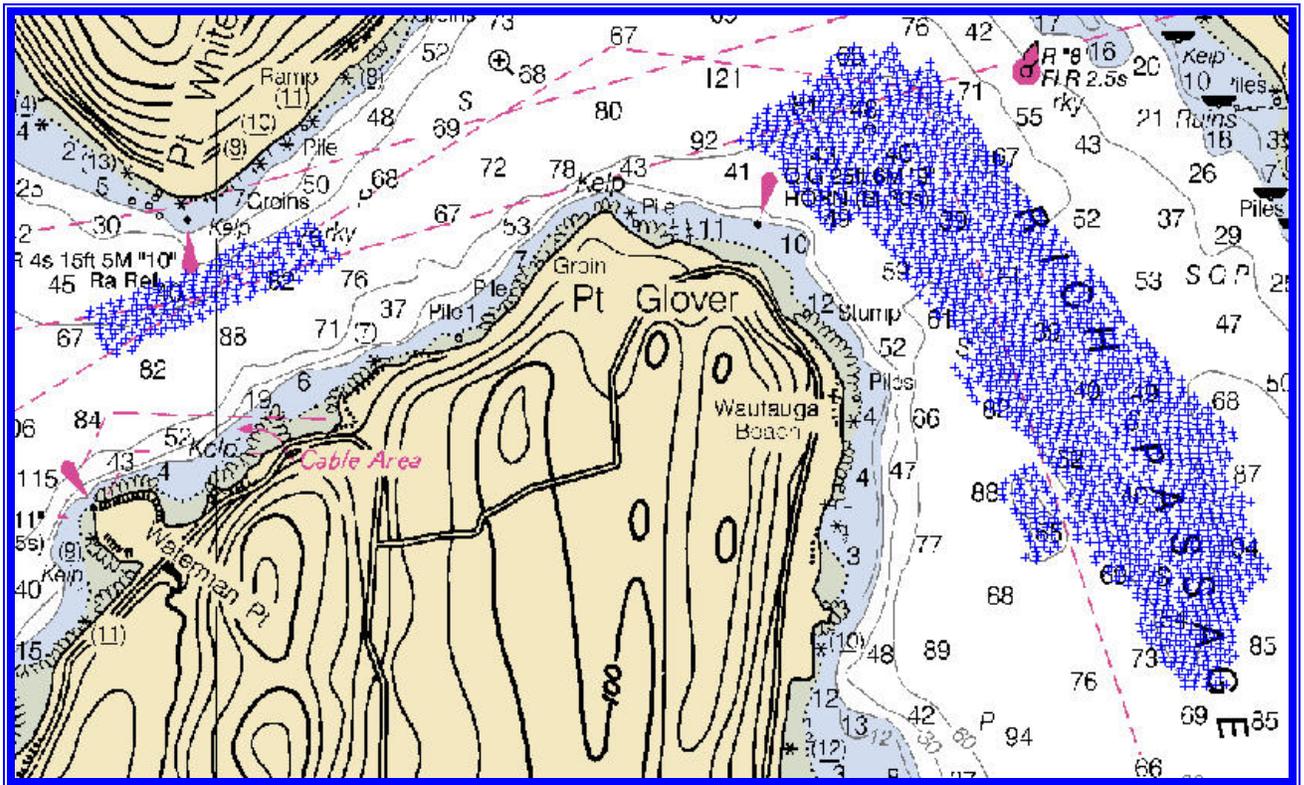


Figure 2: Chart 18449 (Rich Passage)

The total area of hydrography is approximately 1.6 square nautical miles.

F00541 is the only hydrographic survey in Project OPR-N912-NRT3-06 and includes hydrographic data and detached positions. *Concur.*

## B. DATA ACQUISITION AND PROCESSING

Data acquisition was conducted from May 16, 2007 (DN 136) through May 29, 2007 (DN 149) *Concur.*

### B1. Equipment and Vessels

NRT3's survey vessel, NOAA Survey Launch S1212, is equipped with an Odom single beam transducer, a Klein side scan sonar system and a Simrad EM3000 SWMB echosounder and was used to acquire multibeam echosounder data and detached positions.

Launch S1212, a 27-foot, SeaArk Commander (SAMA115510000), was acquired in January 2001. In August 2004 the hull was extended to 30 feet to accommodate the weight of the two 150-horsepower Yamaha four-stroke outboards which power the vessel. The launch is eight feet wide, displaces 4.8 tons, has a static draft of 0.4 meters and is equipped with a Dell Pentium IV PC for running the primary acquisition software.

See Data Acquisition and Processing Report (DAPR)\*.

## **B2. Quality Control**

### Crossline Data

Crossline data were not acquired. It was not feasible to acquire crossline data in and around the berthing areas which were the priority for this survey. And, due to the combination of equipment issues and a narrow survey window, time was not available for crosslines over the remainder of the survey. **Concur.**

See also Data Acquisition and Processing Report.\*

## **B3. Corrections to Echo Soundings**

See Data Acquisition and Processing Report.\*

On DN 136 the Seacat SBE 19+ (S/N 4778) was put in service for the first time. The time stamp in the unit was inadvertently set for Pacific Daylight Time and was not corrected until DN 141. The svp time stamps for DNs 136 and 138 were manually corrected in a text editor and new .svp files were created in UTC. **Concur.**

On DN 137 the surface sound velocity probe failed (Odom Digibar S/N 98314). A small hole was observed on the sensor face and the unit was sent back to the factory for repair. A spare was acquired from Navigation Response Team 6 (S/N 98206) and used throughout the remainder of the survey. **Concur.**

## **B4. Data Processing**

Two CARIS BASE surfaces were created for each field sheet: one at 0.5 meter resolution and one at 1-meter resolution. Both surfaces were finalized. **Concur.**

See also Data Acquisition and Processing Report.\*

## **C. VERTICAL AND HORIZONTAL CONTROL**

### **C1. Tides and Water Levels**

See Data Acquisition and Processing Report. **Concur.**

### **C2. Horizontal Datum**

The horizontal control datum for this project is North American Datum of 1983 (NAD83). **Zone 10.**

### **C3. Position Control**

See Data Acquisition and Processing Report.\*

On DN 141 the Pos MV firmware was upgraded from 3.22 to 3.41. **Concur.**

***\*DAPR included with survey deliverables.***

## D. RESULTS AND RECOMMENDATIONS

### D1. Chart Comparison

Survey results were compared with the latest revisions of the affected raster charts and ENC's available for download from the NOAA website. *Concur.*

Chart No.	Scale	Date	Edition	LNLM Update
18449	1:25,000	October 2003	18th	February 16, 2008
18452	1:10,000	October 1999	16th	February 16, 2008

ENC Cell	Issue Date	Edition	Update
US5WA21M	February 8, 2008	4	September 18, 2007
US5WA14M	February 21, 2008	5	February 21, 2008

#### Comparison of Soundings

Survey data were compared with the charts using contour lines and sounding plots generated by CARIS Field Sheet Editor and Mapinfo/Vertical Mapper. In Sinclair Inlet surveyed soundings are generally deeper than charted soundings consistent with recent dredge activity. Point White appears to have shoaled somewhat with a 35-foot sounding located just shoreward of a charted 40-foot sounding – see DTON report. Little change was observed in Rich Passage; the controlling depth through the passage remains at 39 feet. *Concur.*

#### Comparison of Non-Sounding Features

Positions on shoreline features were not acquired; however, detached positions were acquired on red lights along the Navy's security fence and on revised or disapproval positions of other floating features. *Concur.*

#### AWOIS Items

Seven AWOIS items are included in this survey. Survey findings and charting recommendations are discussed in Pydro and included in the Pydro-generated Feature Report. *Concur. See Appendices for comments regarding the individual features.*

#### Dangers to Navigation

Five Dangers to Navigation were found during the course of this survey and submitted to Marine Chart Division. See Appendix I. *Concur.*

## D2. Additional Results

### Comparison with Prior Surveys

Prior surveys were not addressed. **Concur.**

### Aids to Navigation

Positions were not acquired on fixed aids. **Concur with clarification. Positions acquired along buoys associated with security fence around Navy facilities.**

### Bridges, Cables, Pipelines

Where feasible, charted bridges, cables, and pipelines were visually confirmed. Observed discrepancies as well as submerged features located with SWMB hydrography were addressed. See DTON report. **Concur.**

### Miscellaneous

Field Notes recorded for the information of the hydrographer are typically plotted in Mapinfo to aid in clarification during office processing. These notes are not detached positions but have been imported into the PSS for information only. **Concur.**

### Statistics

Description	Quantities
Total Linear Nautical Miles	72.15
Mainscheme Multibeam	70.41
Side Scan Sonar	0
Development	2.17
Crosslines	0
Square Nautical Miles Hydrography	1.2
Square Nautical Miles SSS	0
Velocity Casts	15
Bottom Samples	0
AWOIS Items	7
Tide Stations Installed	0

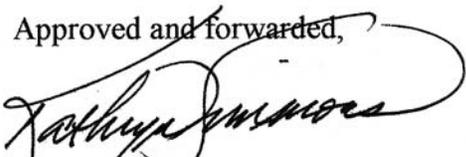
## E. APPROVAL SHEET

Standard field surveying and processing procedures were followed in producing this survey in accordance with the Navigation Response Branch Operations Manual, the Field Procedures Manual and NOS Hydrographic Surveys Specifications and Deliverables.

The data were reviewed daily during acquisition and processing.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded to Atlantic Hydrographic Branch and should be attached to F00541 for final review and processing.

Approved and forwarded,

A handwritten signature in black ink, appearing to read 'Kathryn Simmons', written over a horizontal line.

Kathryn Simmons  
Team Leader

Descriptive Report  
Appendix 1: Dangers to Navigation

# F00541 DTON Report

**Registry Number:** F00541  
**State:** Washington  
**Locality:** Bremerton, Washington  
**Sub-locality:** Sinclair Inlet to Rich Passage  
**Project Number:** OPR-N396-NRT3-07  
**Survey Dates:** 05/16/2007 - 05/23/2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18452	16th	10/02/1999	1:10,000 (18452_1)	USCG LNM: 04/22/2008 (06/02/2009) CHS NTM: None (05/29/2009) NGA NTM: None (06/13/2009)
18445	31st	04/01/2006	1:80,000 (18445_1) 1:25,000 (18445_5)	[L]NTM: ?
18449	18th	10/01/2003	1:25,000 (18449_1)	USCG LNM: 10/21/2008 (10/28/2008) NGA NTM: 11/13/1999 (11/08/2008)
18474	8th	10/01/2003	1:40,000 (18474_1)	[L]NTM: ?
18441	45th	04/01/2006	1:80,000 (18441_1)	[L]NTM: ?
18448	34th	07/01/2006	1:80,000 (18448_1)	[L]NTM: ?
18440	28th	12/01/2005	1:150,000 (18440_1)	[L]NTM: ?
18003	20th	11/01/2006	1:736,560 (18003_1)	[L]NTM: ?
18007	32nd	07/01/2005	1:1,200,000 (18007_1)	[L]NTM: ?
501	12th	11/01/2002	1:3,500,000 (501_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

\* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	29ft Obstruction	Obstruction	8.86 m	47° 32' 42.2" N	122° 39' 11.2" W	---
1.2	29ft Obstruction	Obstruction	8.99 m	47° 32' 44.5" N	122° 39' 10.2" W	---
1.3	35ft Sounding	Shoal	10.65 m	47° 33' 15.4" N	122° 38' 29.1" W	---

1.4	Pipeline	Pipe	15.51 m	47° 33' 33.1" N	122° 37' 34.0" W	---
1.5	35ft Sounding	Shoal	10.82 m	47° 35' 20.7" N	122° 34' 04.4" W	---

**1 - DR\_DToN**

## 1.1) 29ft Obstruction

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 47° 32' 42.2" N, 122° 39' 11.2" W  
**Least Depth:** 8.86 m (= 29.07 ft = 4.845 fm = 4 fm 5.07 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.527$  m ; TVU (TPEv)  $\pm 0.510$  m  
**Timestamp:** 2007-136.21:20:33.814 (05/16/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-136 / 173\_2114  
**Profile/Beam:** 3244/117  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Rectangular obstruction (least depth 29.07 feet/8.86 meters) rising 3.75 feet/1.14 meters above surrounding depths in the vicinity of charted mooring buoy A-11. Feature is approximately 130 meters due west of charted 27-foot obstruction which was disproved.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-136/173_2114	3244/117	0.00	000.0	Primary

#### Hydrographer Recommendations

Chart submerged obstruction and designated sounding.

#### Cartographically-Rounded Depth (Affected Charts):

29ft (18452\_1, 18449\_1)

4  $\frac{3}{4}$ fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

4fm 5ft (18445\_5, 18474\_1, 18445\_1)

8.9m (501\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 8.861 m

**Geo object 2:**    Sounding (SOUNDG)

## **Office Notes**

Concur. DtoN previously sent to MCD, hence obstruction is already charted.

### Feature Images



*Figure 1.1.1*

## 1.2) 29ft Obstruction

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 47° 32' 44.5" N, 122° 39' 10.2" W  
**Least Depth:** 8.99 m (= 29.49 ft = 4.915 fm = 4 fm 5.49 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.452$  m ; TVU (TPEv)  $\pm 0.248$  m  
**Timestamp:** 2007-143.23:22:16.909 (05/23/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-143 / 004\_2321  
**Profile/Beam:** 519/93  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

High point on long narrow object (least depth 29.49 feet/8.99 meters) which rises 4 feet/1.24 meters above surrounding depths. The feature is approximately 43 meters (azimuth 029 degrees) from charted mooring buoy "A-11" and is approximately 40 meters long. Its orientation is 38/228 degrees true.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-143/004_2321	519/93	0.00	000.0	Primary

#### Hydrographer Recommendations

Chart submerged obstruction and designated sounding

#### Cartographically-Rounded Depth (Affected Charts):

29ft (18452\_1, 18449\_1)

4  $\frac{3}{4}$ fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

4fm 5ft (18445\_5, 18474\_1, 18445\_1)

9.0m (501\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 8.988 m

**Geo object 2:**    Sounding (SOUNDG)

## **Office Notes**

Concur. Dton previously sent to MCD, hence obstruction is already charted.

### Feature Images



*Figure 1.2.1*

### 1.3) 35ft Sounding

## DANGER TO NAVIGATION

### Survey Summary

**Survey Position:** 47° 33' 15.4" N, 122° 38' 29.1" W  
**Least Depth:** 10.65 m (= 34.94 ft = 5.823 fm = 5 fm 4.94 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.527$  m ; TVU (TPEv)  $\pm 0.497$  m  
**Timestamp:** 2007-141.21:27:42.825 (05/21/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-141 / 063\_2124  
**Profile/Beam:** 1735/12  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

This 35-foot/10.65-meter submerged feature is not dense but was observed on two separate SWMB lines of hydro. It rises 6.8 feet/2.1 meters off the bottom and represents the controlling depth for the moorage slip.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-141/063_2124	1735/12	0.00	000.0	Primary

### Hydrographer Recommendations

Charted designated sounding

#### Cartographically-Rounded Depth (Affected Charts):

35ft (18452\_1, 18449\_1)

5  $\frac{3}{4}$ fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

5fm 5ft (18445\_5, 18474\_1, 18445\_1)

10.6m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Sounding (SOUNDG)

## Office Notes

Concur. Dton previously sent to MCD, hence sounding is already charted.

### Feature Images

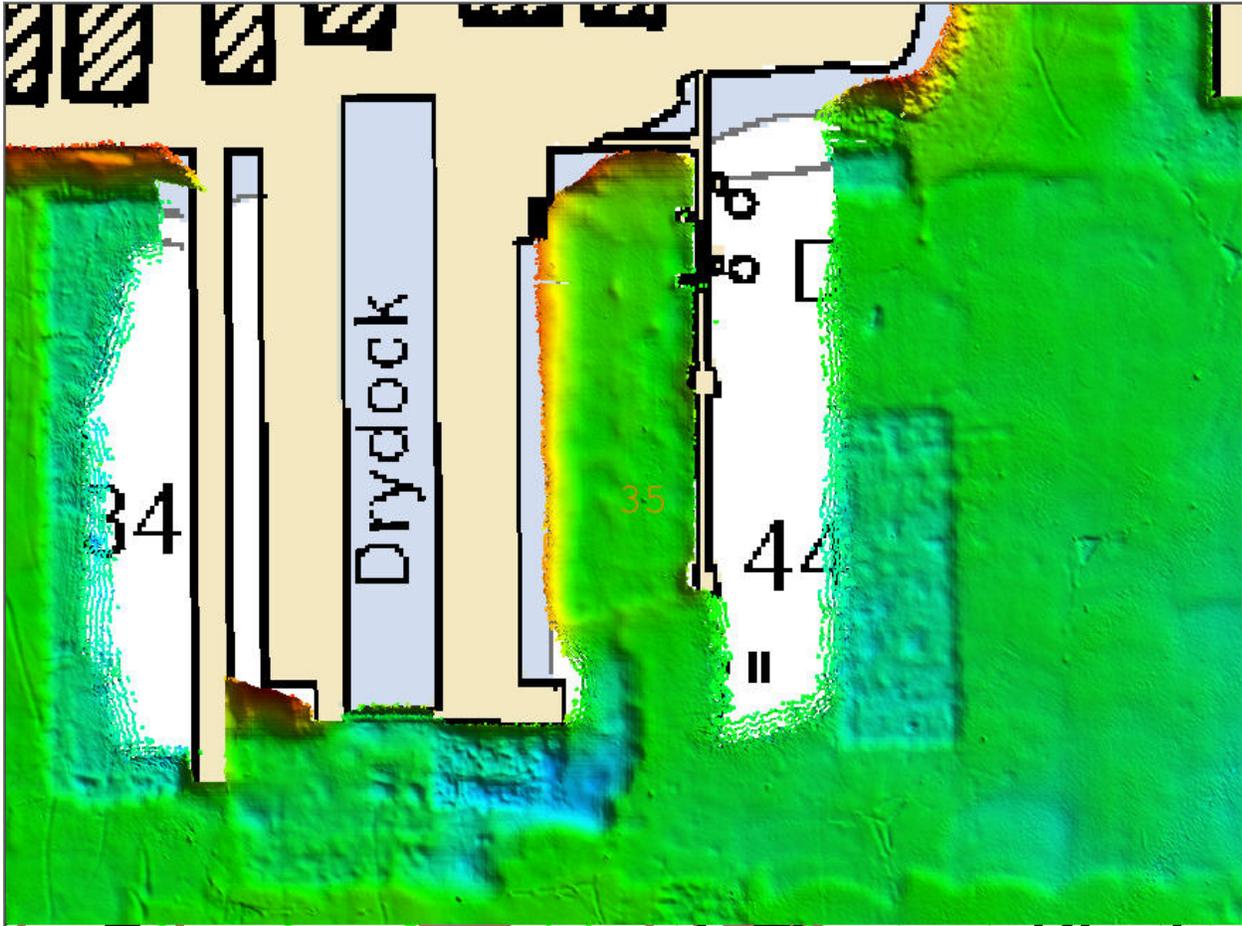
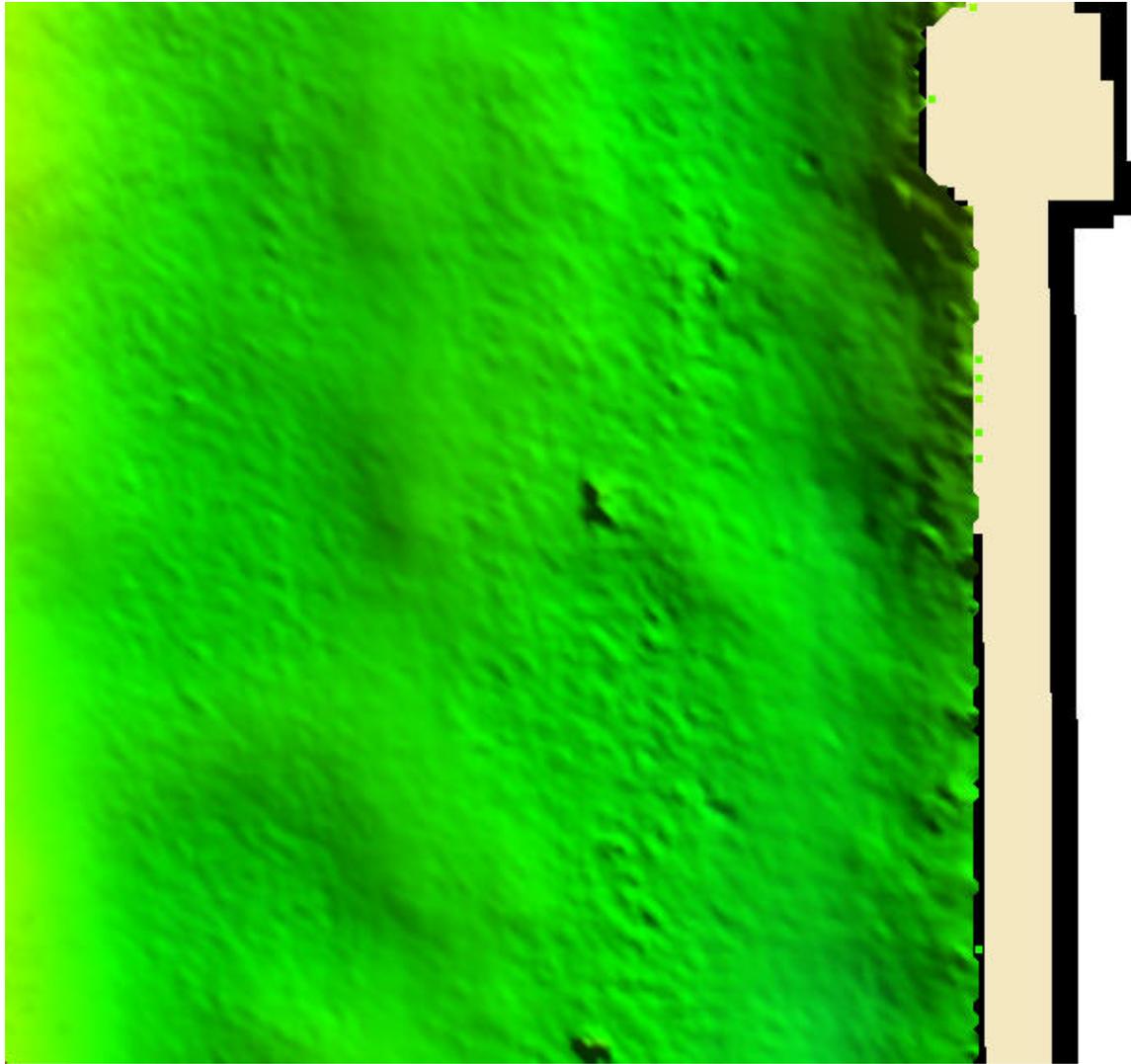


Figure 1.3.1



*Figure 1.3.2*

## 1.4) Pipeline

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 47° 33' 33.1" N, 122° 37' 34.0" W  
**Least Depth:** 15.51 m (= 50.87 ft = 8.478 fm = 8 fm 2.87 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.591$  m ; **TVU (TPEv)**  $\pm 0.232$  m  
**Timestamp:** 2007-143.21:38:14.741 (05/23/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-143 / 101\_2136  
**Profile/Beam:** 819/76  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Designated sounding marks offshore end of an uncharted pipeline. Pipeline is not visible on shore but the feature as surveyed is oriented 318 degrees true.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-143/101_2136	819/76	0.00	000.0	Primary

#### Hydrographer Recommendations

Chart new pipeline as depicted.

#### Cartographically-Rounded Depth (Affected Charts):

51ft (18452\_1, 18449\_1)

8 ½fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

8fm 3ft (18445\_5, 18474\_1, 18445\_1)

15.5m (501\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Pipeline, submarine/on land (PIPSOL)

## Office Notes

Concur. Dton previously sent to MCD, hence pipeline is already charted.

### Feature Images

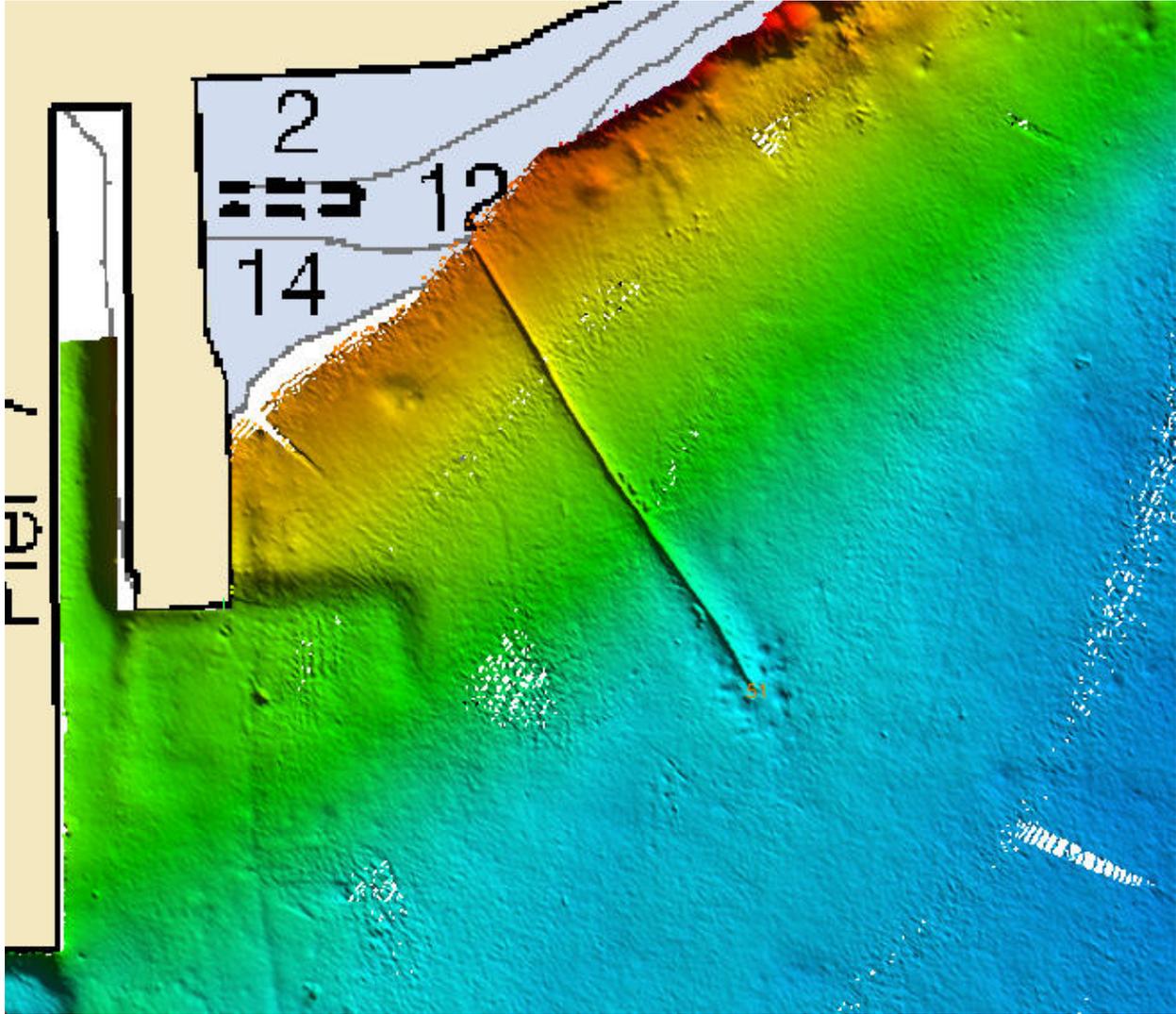


Figure 1.4.1

## 1.5) 35ft Sounding

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 47° 35' 20.7" N, 122° 34' 04.4" W  
**Least Depth:** 10.82 m (= 35.51 ft = 5.918 fm = 5 fm 5.51 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.690$  m ; **TVU (TPEv)**  $\pm 0.888$  m  
**Timestamp:** 2007-138.20:56:34.812 (05/18/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-138 / 017\_2055  
**Profile/Beam:** 265/124  
**Charts Affected:** 18449\_1, 18474\_1, 18441\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Shoal 35-foot sounding adjacent to charted 40-foot sounding

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-138/017_2055	265/124	0.00	000.0	Primary

#### Hydrographer Recommendations

Chart designated sounding

#### Cartographically-Rounded Depth (Affected Charts):

35ft (18449\_1)

5  $\frac{3}{4}$ fm (18441\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

5fm 5ft (18474\_1, 18445\_1)

10.8m (501\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Sounding (SOUNDG)

## Office Notes

Concur. Dton previously sent to MCD, hence sounding is already charted.

### Feature Images

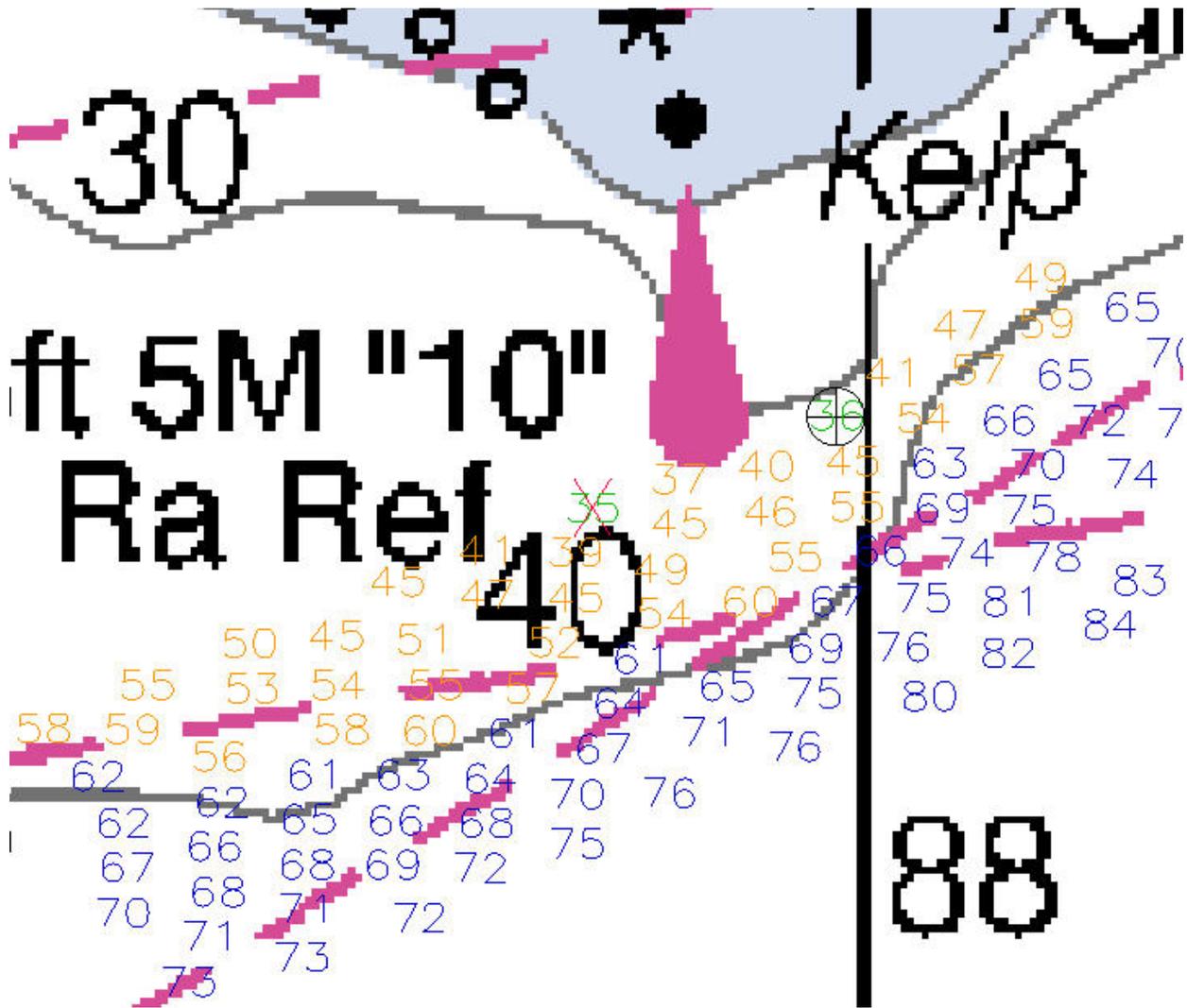


Figure 1.5.1

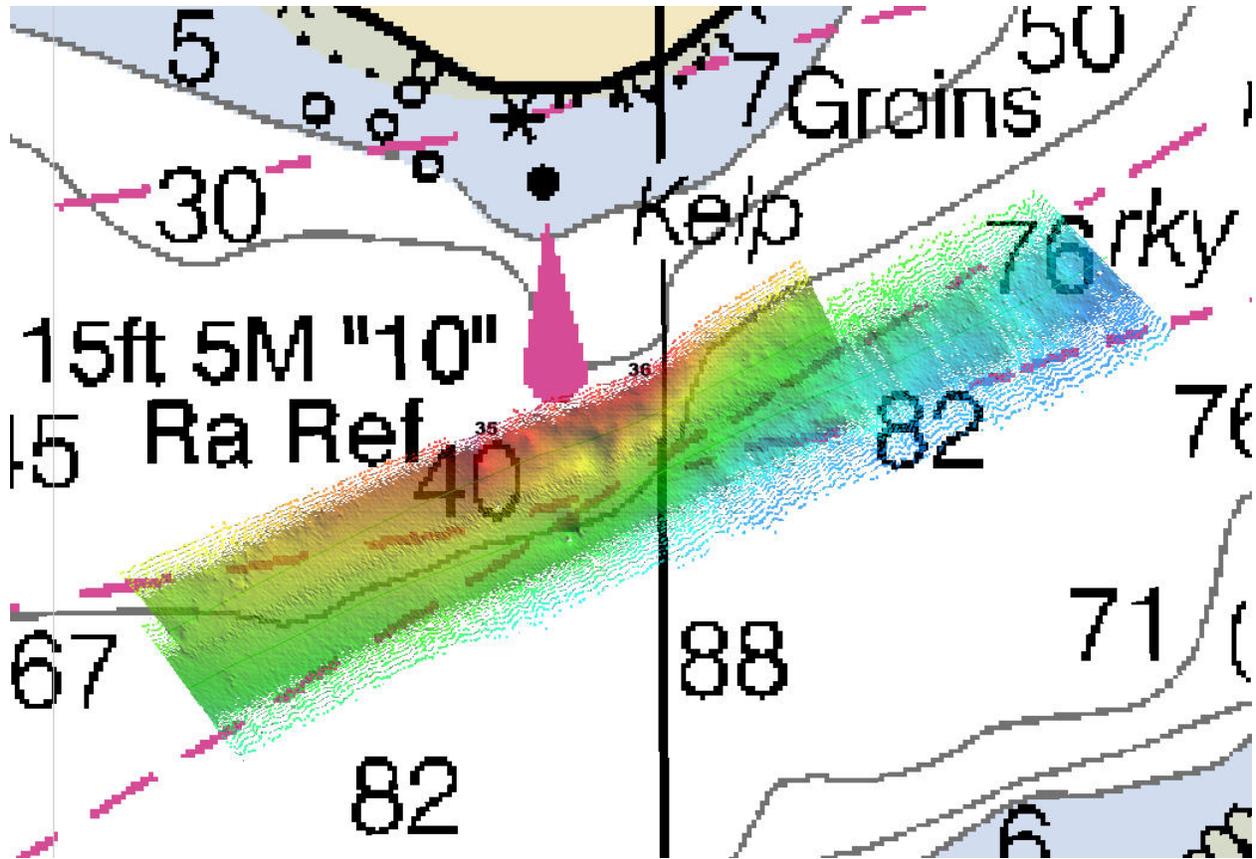


Figure 1.5.2

Descriptive Report  
Appendix 2: Survey Feature Report

# F00541 AWOIS Report

**Registry Number:** F00541  
**State:** Washington  
**Locality:** Bremerton, Washington  
**Sub-locality:** Sinclair Inlet to Rich Passage  
**Project Number:** OPR-N396-NRT3-07  
**Survey Dates:** 05/16/2007 - 05/23/2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18452	16th	10/02/1999	1:10,000 (18452_1)	USCG LNM: 04/22/2008 (06/02/2009) CHS NTM: None (05/29/2009) NGA NTM: None (06/13/2009)
18445	31st	04/01/2006	1:80,000 (18445_1) 1:25,000 (18445_5)	[L]NTM: ?
18449	18th	10/01/2003	1:25,000 (18449_1)	USCG LNM: 10/21/2008 (10/28/2008) NGA NTM: 11/13/1999 (11/08/2008)
18474	8th	10/01/2003	1:40,000 (18474_1)	[L]NTM: ?
18448	34th	07/01/2006	1:80,000 (18448_1)	[L]NTM: ?
18440	28th	12/01/2005	1:150,000 (18440_1)	[L]NTM: ?
18003	20th	11/01/2006	1:736,560 (18003_1)	[L]NTM: ?
18007	32nd	07/01/2005	1:1,200,000 (18007_1)	[L]NTM: ?
501	12th	11/01/2002	1:3,500,000 (501_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

\* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS 53554	Obstruction	9.80 m	47° 32' 40.7" N	122° 38' 52.0" W	53554
1.2	AWOIS 53553	Obstruction	9.61 m	47° 32' 41.0" N	122° 39' 04.6" W	53553
1.3	AWOIS 50728	Obstruction	9.17 m	47° 32' 35.7" N	122° 39' 15.3" W	50728
1.4	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---

1.5	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---
1.6	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---
1.7	AWOIS 53555	Shoal	6.36 m	47° 33' 02.1" N	122° 39' 33.6" W	53555

**1 - DR\_AWOIS**

## 1.1) AWOIS 53554

### Primary Feature for AWOIS Item #53554

**Search Position:** 47° 32' 40.7" N, 122° 38' 52.1" W  
**Historical Depth:** 9.45 m  
**Search Radius:** 75  
**Search Technique:** S2, ES  
**Technique Notes:** [None]

#### History Notes:

H9862-- 1989; ADDED 31 FOOT OBSTRUCTION. THE OBSTRUCTION IS A SUBMERGED LOG.  
(ENTERED CEH 5/2007)

### Survey Summary

**Survey Position:** 47° 32' 40.7" N, 122° 38' 52.0" W  
**Least Depth:** 9.80 m (= 32.15 ft = 5.359 fm = 5 fm 2.15 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.529$  m ; TVU (TPEv)  $\pm 0.395$  m  
**Timestamp:** 2007-136.22:41:51.036 (05/16/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-136 / 168\_2239  
**Profile/Beam:** 1005/106  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

A stump rising 1.2 feet off the bottom was found with SWMB at position of AWOIS item #53554. Not significant among surrounding depths.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-136/168_2239	1005/106	0.00	000.0	Primary
AWOIS	AWOIS # 53554	1.34	066.7	Secondary

## Hydrographer Recommendations

Delete charted obstruction. Chart soundings from current survey.

### Cartographically-Rounded Depth (Affected Charts):

32ft (18452\_1, 18449\_1)

5 ¼fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

5fm 2ft (18445\_5, 18474\_1, 18445\_1)

9.8m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 9.800 m

### Office Notes

Concur.

### Feature Images



*Figure 1.1.1*

## 1.2) AWOIS 53553

### Primary Feature for AWOIS Item #53553

**Search Position:** 47° 32' 42.0" N, 122° 39' 05.0" W  
**Historical Depth:** 8.23 m  
**Search Radius:** 50  
**Search Technique:** S2, ES  
**Technique Notes:** [None]

**History Notes:**

H10796-- OCS BP 169352; ADDED 27 FT OBSTRUCTION. (ENTERED CEH 5/2007)

### Survey Summary

**Survey Position:** 47° 32' 41.0" N, 122° 39' 04.6" W  
**Least Depth:** 9.61 m (= 31.52 ft = 5.254 fm = 5 fm 1.52 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.489$  m ; **TVU (TPEv)**  $\pm 0.379$  m  
**Timestamp:** 2007-136.20:49:19.968 (05/16/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-136 / 240\_2044  
**Profile/Beam:** 2765/18  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

A small feature rising 1.5 feet off the bottom was located approximately 31 meters south (165 degrees) the target. With a least depth of 31.5 feet, the feature is not a significant obstruction.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-136/240_2044	2765/18	0.00	000.0	Primary
AWOIS	AWOIS # 53553	31.91	165.3	Secondary

## Hydrographer Recommendations

Delete charted obstruction; chart soundings from current survey.

### Cartographically-Rounded Depth (Affected Charts):

31ft (18452\_1, 18449\_1)

5 ¼fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

5fm 1ft (18445\_5, 18474\_1, 18445\_1)

9.6m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 9.608 m

**Geo object 2:** Sounding (SOUNDG)

### Office Notes

Concur.

### Feature Images



*Figure 1.2.1*

### 1.3) AWOIS 50728

#### Primary Feature for AWOIS Item #50728

**Search Position:** 47° 32' 35.7" N, 122° 39' 15.2" W  
**Historical Depth:** [None]  
**Search Radius:** 75  
**Search Technique:** S2, ES, DI  
**Technique Notes:** [None]

**History Notes:**

BP19126/63--AERIAL PHOTOS; A PILE WAS LOCATED IN LAT.47-32-33.9N, ■LONG.122-39-03W. (ENTERED, 2/28/84, MJF). ■ CL1550/75--USPS; THE PILE WAS REP. REMOVED AND REVISED TO SUBM. ON CHART 18452■BY CHAIN DRAG WITH A SERIES OF KADIAL LINES IN A 100M RADIUS. ALTHOUGH NOT ■LOCATED A STUB PROTRUDING 2 1/2FT ABOVE BOTTOM WAS FOUND IN LAT.47-32-36.40N,■LONG.122-39-10.75W AND HAS A LD OF 29FT. THIS PILE WAS NOT CONSIDERED AS A ■DANGER TO NAV. BY THE HYDRO. BUT SHOULD BE CHARTED, AS WELL AS RETAINING THE ■PRESENTLY CHARTED SUBM. PILE ON CHART 18452. (ENTERED, 2/28/84, MJF).

#### Survey Summary

**Survey Position:** 47° 32' 35.7" N, 122° 39' 15.3" W  
**Least Depth:** 9.17 m (= 30.08 ft = 5.014 fm = 5 fm 0.08 ft)  
**TPU (±1.96σ):** THU (TPEh) ±1.454 m ; TVU (TPEv) ±0.210 m  
**Timestamp:** 2007-143.22:16:56.974 (05/23/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-143 / 007\_2215  
**Profile/Beam:** 587/79  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

A small, insignificant stump rising one foot off the bottom was located with SWMB at position of AWOIS #50728.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-143/007_2215	587/79	0.00	000.0	Primary
AWOIS	AWOIS # 50728	1.91	234.8	Secondary

## Hydrographer Recommendations

Delete charted obstruction and text "Obstn (subm pile)". Chart soundings from current survey.

### Cartographically-Rounded Depth (Affected Charts):

30ft (18452\_1, 18449\_1)

5fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

5fm 0ft (18445\_5, 18474\_1, 18445\_1)

9.2m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 9.169 m

**Geo object 2:** Pile (PILPNT)

### Office Notes

Concur.

### Feature Images

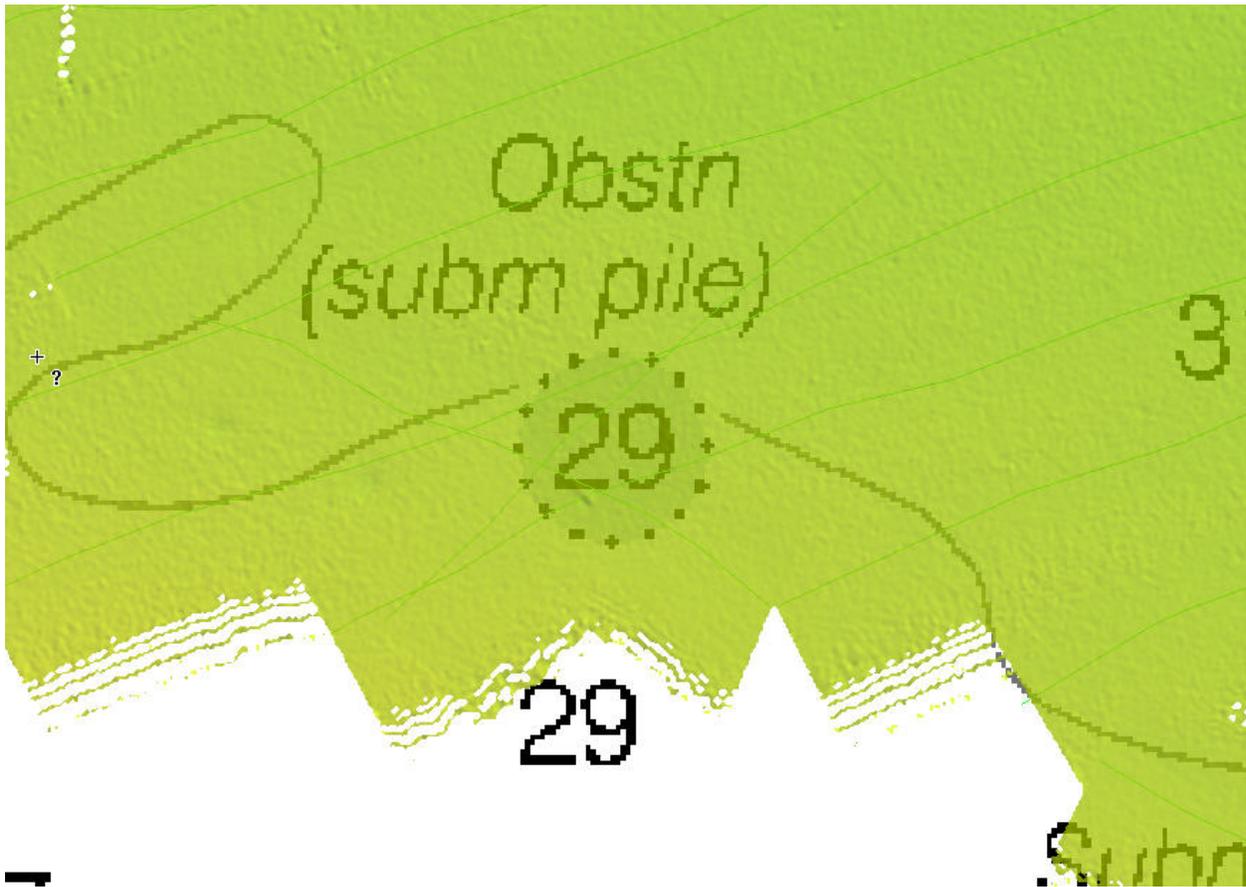


Figure 1.3.1

## 1.4) AWOIS #53551 - OBSTRUCTION

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 47° 32' 32.9" N, 122° 39' 07.1" W  
**Historical Depth:** [None]  
**Search Radius:** 75  
**Search Technique:** S2, ES, DI  
**Technique Notes:** [None]

#### History Notes:

L-177/66-- ADDED PILE TO CHART. ■ UNKNOWN SOURCE-- PILE WAS REVISED TO SUBM PILE BETWEEN 1973 - 1981.

### Survey Summary

**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Object detection SWMB coverage was acquired over the target location out to a radius of about 35 meters. No obstruction was found.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS	AWOIS # 53551	0.00	000.0	Primary

### Hydrographer Recommendations

Given that there is no evidence that the charted position was 'PA' combined with the age of the report and the findings of this survey, the hydrographer recommends deleting the charted Subm pile and text and charting the soundings from the current survey.

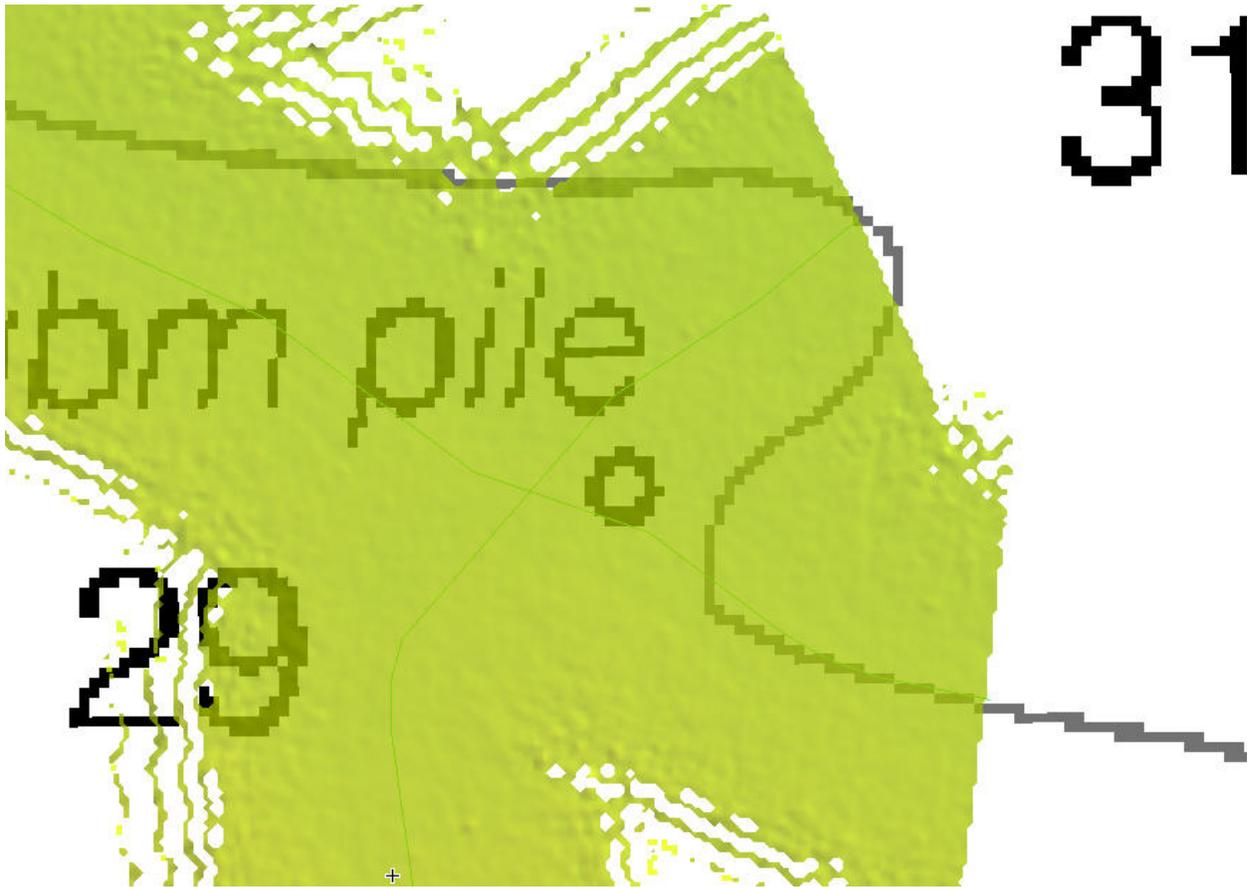
### S-57 Data

**Geo object 1:** Pile (PILPNT)

## Office Notes

Concur.

**Feature Images**



*Figure 1.4.1*

## 1.5) AWOIS #53552 - OBSTRUCTION

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 47° 32' 32.0" N, 122° 38' 50.0" W  
**Historical Depth:** 8.84 m  
**Search Radius:** 50  
**Search Technique:** S2, ES  
**Technique Notes:** [None]

#### History Notes:

H10796-- OCS BP 169352; ADDED 29 FT OBSTRUCTION. (ENTERED CEH 5/2007)

### Survey Summary

**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

No obstruction was found

### Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS	AWOIS # 53552	0.00	000.0	Primary

### Hydrographer Recommendations

Delete sounding over obstruction and "obstn" text. Chart soundings from current survey.

### S-57 Data

**Geo object 1:** Sounding (SOUNDG)

### Office Notes

Concur.

### Feature Images

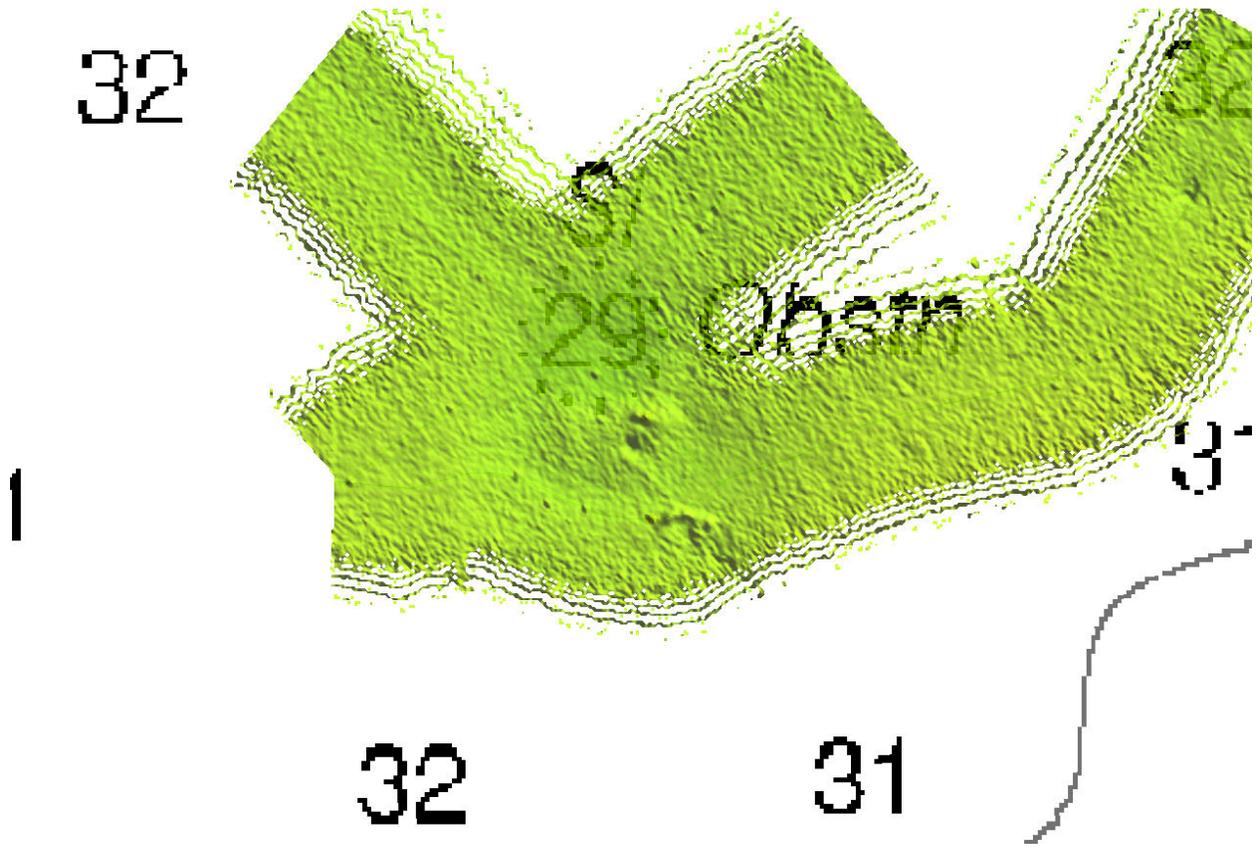


Figure 1.5.1

## 1.6) AWOIS #53556 - OBSTRUCTION

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 47° 33' 18.8" N, 122° 39' 04.9" W  
**Historical Depth:** [None]  
**Search Radius:** 50  
**Search Technique:** S2, ES  
**Technique Notes:** 50 METER RADIUS AROUND PIER FROM ABOVE POSITION TO SHORE.

**History Notes:**

1-38/75-- CHANGES PIER TO PIER IN RUINS. (ENTERED CEH 5/2007)

### Survey Summary

**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

Source Info: 1-38/75-- CHANGES PIER TO PIER IN RUINS. (ENTERED CEH 5/2007)

Findings: Remnants of the pier remain; Charted piles at the end are not visible.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS	AWOIS # 53556	0.00	000.0	Primary

### Hydrographer Recommendations

Retain and extend charted ruins to include charted piles at offshore end

### S-57 Data

**Geo object 1:** Shoreline Construction (SLCONS)  
**Attributes:** CATSLC - 4: pier (jetty)  
 CONDTN - 2:ruined  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur.

### Feature Images

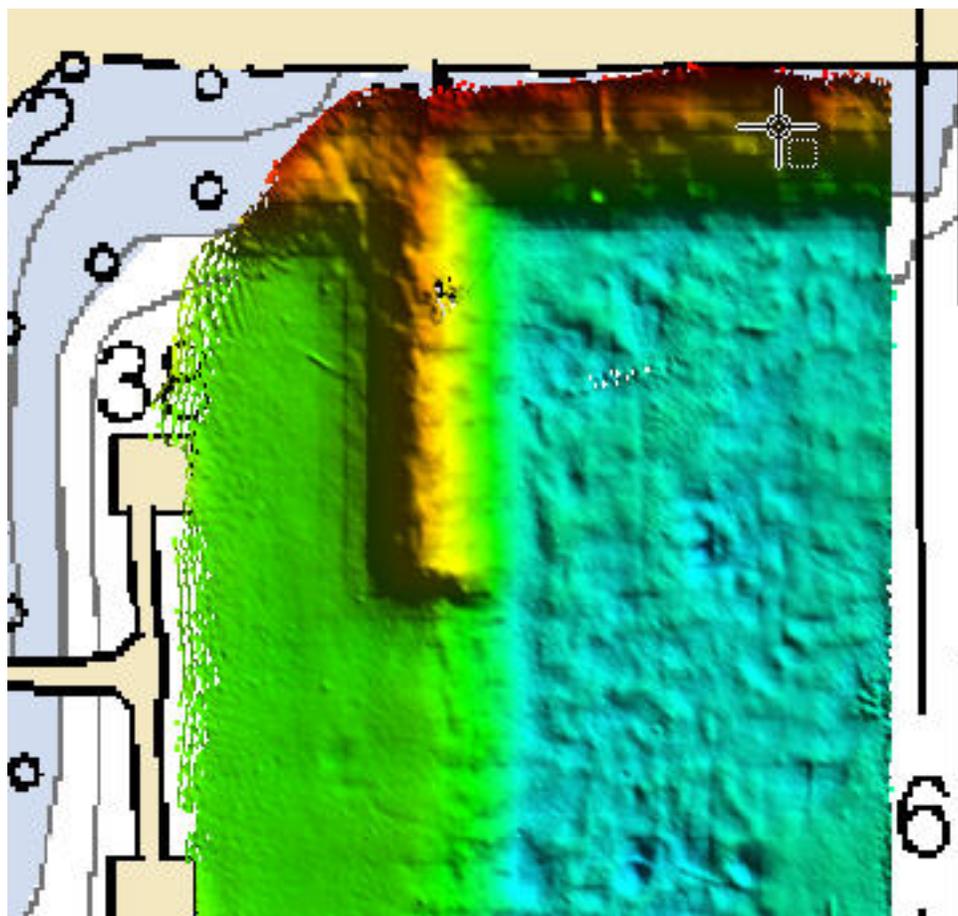


Figure 1.6.1

**1.7) AWOIS 53555**

**Primary Feature for AWOIS Item #53555**

**Search Position:** 47° 33' 02.3" N, 122° 39' 33.2" W  
**Historical Depth:** 5.49 m  
**Search Radius:** 75  
**Search Technique:** S2, ES  
**Technique Notes:** [None]

**History Notes:**

H9862-- 1989; ADDED 18 FOOT OBSTRUCTION. (ENTERED CEH 5/2007)

**Survey Summary**

**Survey Position:** 47° 33' 02.1" N, 122° 39' 33.6" W  
**Least Depth:** 6.36 m (= 20.85 ft = 3.476 fm = 3 fm 2.85 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.455$  m ; **TVU (TPEv)**  $\pm 0.407$  m  
**Timestamp:** 2007-143.23:26:54.139 (05/23/2007)  
**Survey Line:** f00541 / s1212\_simrad / 2007-143 / 010\_2326  
**Profile/Beam:** 487/9  
**Charts Affected:** 18452\_1, 18445\_5, 18449\_1, 18474\_1, 18445\_1, 18448\_1, 18440\_1, 18003\_1, 18007\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

[None]

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
f00541/s1212_simrad/2007-143/010_2326	487/9	0.00	000.0	Primary
AWOIS	AWOIS # 53555	10.60	234.6	Secondary

## Hydrographer Recommendations

[None]

### Cartographically-Rounded Depth (Affected Charts):

21ft (18452\_1, 18449\_1)

3 ½fm (18448\_1, 18440\_1, 18003\_1, 18007\_1, 530\_1)

3fm 3ft (18445\_5, 18474\_1, 18445\_1)

6.4m (501\_1, 50\_1)

## S-57 Data

[None]

## Office Notes

Revise position and depth of charted obstruction based on survey findings.

### Feature Images

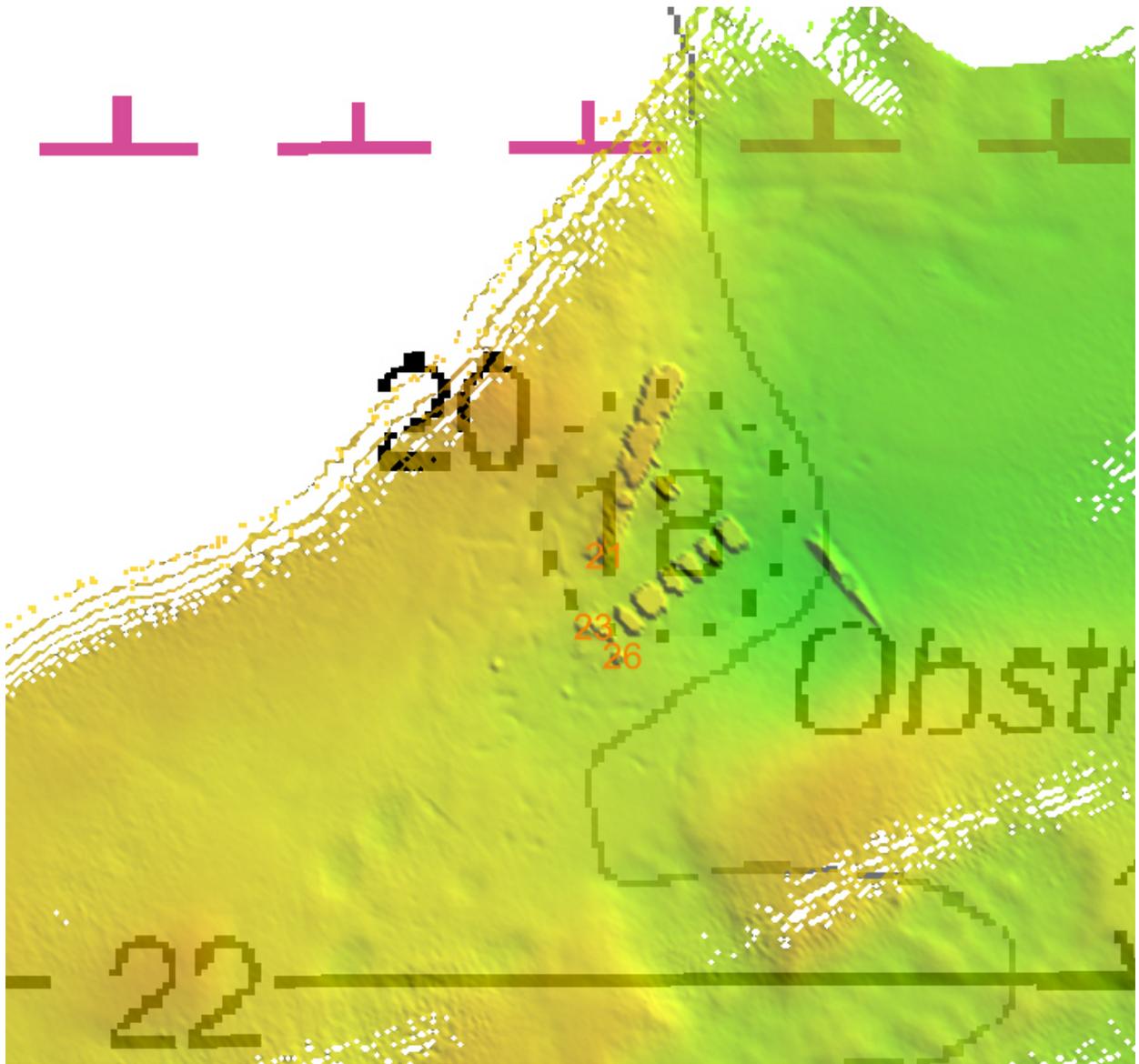
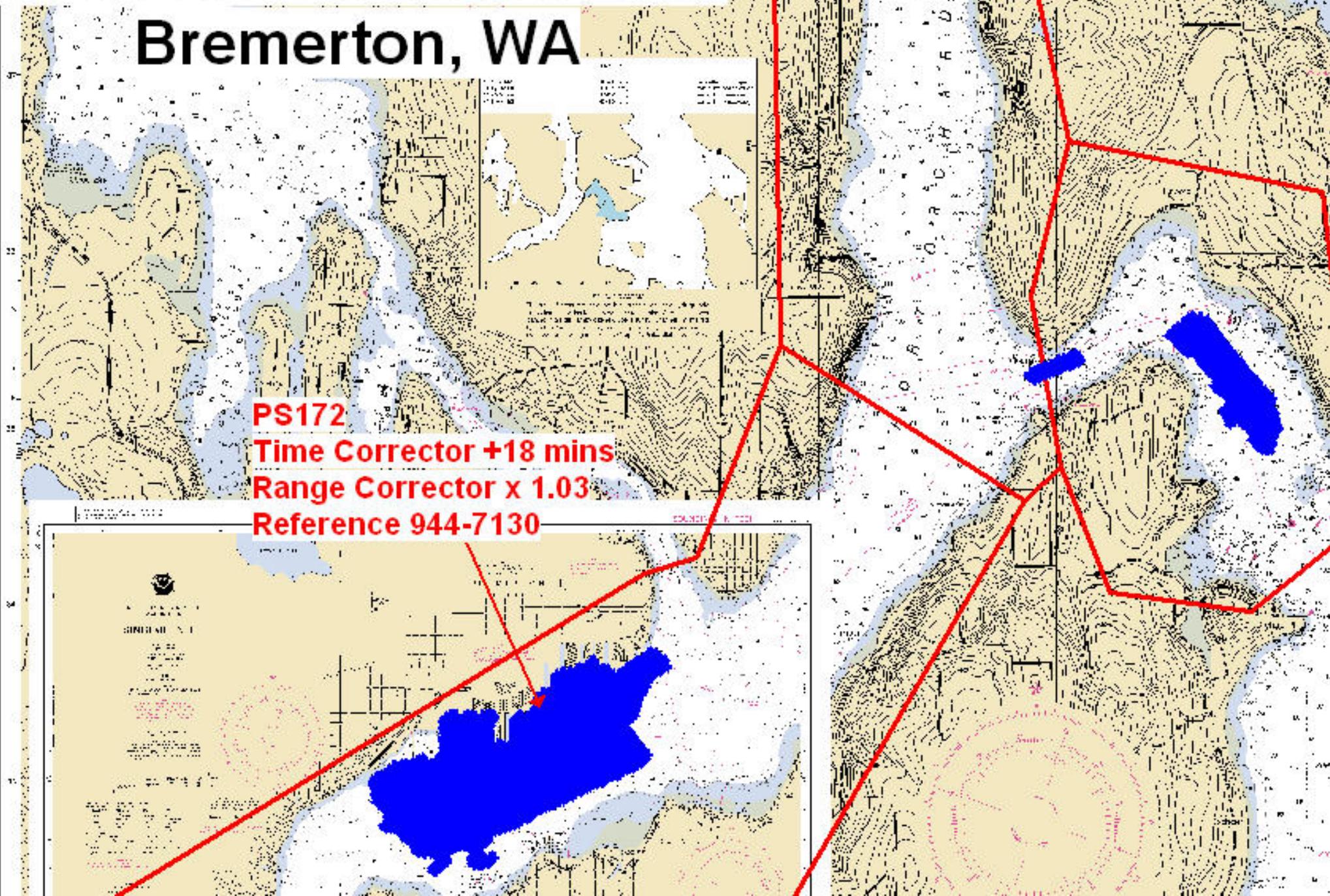


Figure 1.7.1

Descriptive Report  
Appendix 3: Final Progress Sketch & Survey  
Outline

# Preliminary Tidal Zoning for OPR-N396-NRT3-2007 Bremerton, WA

**PS172**  
**Time Corrector +18 mins**  
**Range Corrector x 1.03**  
**Reference 944-7130**



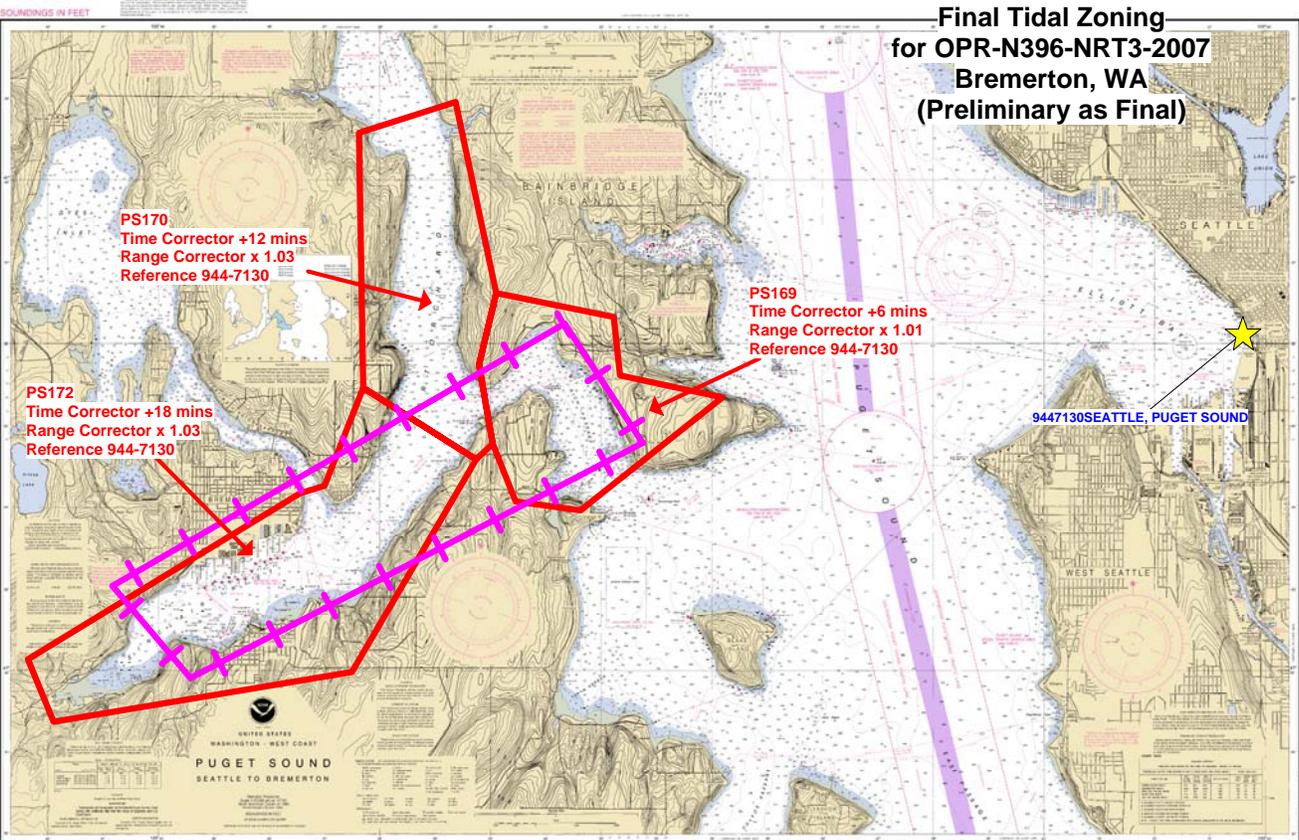
Descriptive Report  
Appendix 4: Tides and Water Levels



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
National Ocean Service  
Silver Spring, Maryland 20910



**Final Tidal Zoning  
for OPR-N396-NRT3-2007  
Bremerton, WA  
(Preliminary as Final)**



**PS170**  
Time Corrector +12 mins  
Range Corrector x 1.03  
Reference 944-7130

**PS169**  
Time Corrector +6 mins  
Range Corrector x 1.01  
Reference 944-7130

**PS172**  
Time Corrector +18 mins  
Range Corrector x 1.03  
Reference 944-7130

9447130 SEATTLE, PUGET SOUND

UNITED STATES  
WASHINGTON - WEST COAST  
**PUGET SOUND**  
SEATTLE TO BREMERTON

**NOTE F**  
**TRAFFIC SEPARATION SCHEME**  
One-way traffic lanes overlaid on this chart are RECOMMENDED for use by all vessels traveling between the points involved. They have been designated to aid in the prevention of collisions in the Puget Sound waters, but are not intended in any way to supersede or alter the applicable Rules of the Road. Separation zones are intended to separate inbound and outbound traffic and to be free of ship traffic. Separation Zones should not be used except for crossing purposes. When crossing traffic lanes and separation zones, use extreme caution.  
Precautionary Areas have been established where major lanes merge and cross the traffic separation scheme. It is recommended that vessels proceed with caution in these areas. Whenever practical, vessels entering or leaving the system should do so at these precautionary areas. For more information regarding Traffic Separation Scheme procedures and regular use, see 33 CFR 167 and 170 Chapter 2 of the U.S. Coast Pilot.

Full bottom coverage  
Partial bottom coverage



Descriptive Report  
Appendix 5: Supplemental Correspondence

---

**From:** "Johnson, William H. CIV ComNavRegNW Port Operations" <william.h.johnson6@navy.mil>  
**To:** "Matthew Wilson" <Matthew.Wilson@noaa.gov>  
**Cc:** "Edenbeck, William E LCDR Port Operations Officer Naval Base Kitsap, N31BA" <william.edenbeck@navy.mil>; "Porter, Raymond L CIV NISMO, N55639" <raymond.porter@navy.mil>; "Kelly, Michael P CIV CNRNW, N316BR" <michael.p.kelly1@navy.mil>; "LCDR Rick Brennan, NOAA" <Richard.T.Brennan@noaa.gov>  
**Sent:** Tuesday, August 04, 2009 12:47 PM  
**Subject:** RE: Dive Report and Buoy Guidance

Matthew,

Go ahead and remove the 13, 19 and 23 foot soundings. I am confident the water depth falls within the 41 - 42 range.

R/ Bill Johnson  
Navy Region Northwest Port Operations  
Office: 360-476-1138  
Cell: 360-340-2683

-----Original Message-----

**From:** Matthew Wilson [mailto:Matthew.Wilson@noaa.gov]  
**Sent:** Tuesday, August 04, 2009 8:26  
**To:** Johnson, William H. CIV ComNavRegNW Port Operations  
**Cc:** Edenbeck, William E LCDR Port Operations Officer Naval Base Kitsap, N31BA; Porter, Raymond L CIV NISMO, N55639; Kelly, Michael P CIV CNRNW, N316BR; LCDR Rick Brennan, NOAA  
**Subject:** Re: Dive Report and Buoy Guidance

Bill,

The report from the dive meets our needs - this is sufficient to disprove the surveyed 19 and 23 foot soundings, and to disprove the currently charted 13 foot sounding. The only remaining question - based on the survey results and dive report, are you (and the Navy) comfortable with removing the 19 and 23 foot surveyed soundings and the 13 foot charted sounding? If we remove these soundings from consideration, there will be 41 and 42 foot soundings off the end of Pier Echo (see attached .jpg - the red font soundings will supersede the black font soundings). The location of the security fence has been updated as well. With concurrence we will move forward with the chart update as you see in the attached .jpg.

Copy on the buoy information, the chart will be updated accordingly.

Thanks for all your work on this, we appreciate it.

Matt

--

Respectfully,

Matthew J. Wilson  
Physical Scientist  
NOAA Atlantic Hydrographic Branch  
757-441-6862x112  
[matthew.wilson@noaa.gov](mailto:matthew.wilson@noaa.gov)

Johnson, William H. CIV ComNavRegNW Port Operations wrote:

>  
> Matt,  
> As we discussed on the phone, the divers swam the entire ex-CG49  
> and  
> found the sea bottom to be consistent without noticeable rises in  
> terrain. The divers reported seeing no marks or other signs on the  
> bottom of the ship which could indicate the hull had been making  
> contact  
> with the bottom or other objects. The ships draft is about 21 feet  
> amidships and 31 feet at the sonar dome. According to the divers,  
> visibility is no more than ten feet. The divers were able to swim the  
> length of the ship without seeing the bottom. The diver then went  
> down  
> to the sea floor and swam it, again w/o any noticeable change in  
> terrain.  
>  
> The divers did find a piece of steel measuring approximately two feet  
> wide by four feet long rising up from the mud line by approximately  
> three feet (see attached drawing).  
>  
> I do not know what caused the NAV Crew to pick up the 19' reading, but  
> perhaps they were getting readings from sea encrusted chain that  
> anchors  
> the buoys for the Port Security Barrier?? Each buoy has three lengths  
> of chain that are each attached to a block anchor in the mud.  
>  
> As far as known updates to the chart are concerned, please note that  
> buoys "L-1" and "L-3" have been removed; "L-2" remains in place.  
> "A-11" has also been removed. "A-12" & "A-13" may be removed in the  
> future. We will go through the normal process for chart updates when  
> those buoys are removed.  
>  
> Please let me know if you need any additional information.  
>  
> R/ Bill Johnson  
> Navy Region Northwest Port Operations  
> Office: 360-476-1138  
> Cell: 360-340-2683

>

>

> -----Original Message-----

> From: Matthew Wilson [mailto:Matthew.Wilson@noaa.gov]

> Sent: Monday, August 03, 2009 6:22

> To: Johnson, William H. CIV ComNavRegNW Port Operations

> Subject: Dive Report and Buoy Guidance

>

>

> Bill,

>

> We are standing by for any written information regarding the dive plus

> any guidance regarding buoys--which ones are still there and which

ones

> are now gone. The chart will be updated accordingly. When can we

> expect that information? (For planning purposes.)

>

> Thanks again for all your help,

>

> Matt

>

>

> Johnson, William H. CIV ComNavRegNW Port Operations wrote:

>

>>

>> Thanks Linda, we'll be standing by.

>>

>> R/ Bill Johnson

>> Navy Region Northwest Port Operations

>> Office: 360-476-1138

>> Cell: 360-340-2683

>>

>>

>> -----Original Message-----

>> From: Coburn, Linda L CIV PSNS/IMF, Code 1222.LC

>> Sent: Thursday, July 23, 2009 11:31

>> To: Johnson, William H. CIV ComNavRegNW Port Operations; 'Matthew

>> Wilson'

>> Cc: 'LCDR Rick Brennan, NOAA'; Edenbeck, William E LCDR Port

>> Operations Officer Naval Base Kitsap, N31BA; Kelly, Michael P CIV

>> CNRNW, N316BR; Porter, Raymond L CIV NISMO, N55639

>> Subject: RE: Pier Echo

>>

>> The divers will be able to check this out either this afternoon or

>> tomorrow. As soon as I get the report from them, I will forward it

on

>>

>

>

>> to you.

>>

>> Thanks!!

>>  
>>

>> Linda Coburn  
>> Puget Sound Naval Shipyard & IMF  
>> Business Agent, C/1213.LC  
>> 1400 Farragut Ave.  
>> Bremerton, WA 98314  
>> (360)476-7858  
>> (360)476-5176 (Fax)

>>

>> -----Original Message-----

>> From: Johnson, William H. CIV ComNavRegNW Port Operations  
>> Sent: Monday, July 20, 2009 11:27 AM  
>> To: 'Matthew Wilson'  
>> Cc: LCDR Rick Brennan, NOAA; Edenbeck, William E LCDR Port Operations

>> Officer Naval Base Kitsap, N31BA; Kelly, Michael P CIV CNRNW, N316BR;

>> Porter, Raymond L CIV NISMO, N55639; Coburn, Linda L CIV PSNS/IMF,  
>> Code 1222.LC  
>> Subject: RE: Pier Echo

>>  
>>

>> Matthew,

>> I have requested divers swim the forward section of the

>>

> ex-VINCENNES

>

>> and report back. I too feel the soundings are most likely incorrect  
>> but of course we need to be sure. I suggest you hold off on sending  
>> over the Navigation Response Team until I hear something more from  
the

>>

>

>

>> divers.

>>

>>

>>

>> R/ Bill Johnson  
>> Navy Region Northwest Port Operations  
>> Office: 360-476-1138  
>> Cell: 360-340-2683

>>

>>

>> -----Original Message-----

>> From: Matthew Wilson [mailto:Matthew.Wilson@noaa.gov]  
>> Sent: Monday, July 20, 2009 8:50  
>> To: Johnson, William H. CIV ComNavRegNW Port Operations  
>> Cc: LCDR Rick Brennan, NOAA

>> Subject: Re: Pier Echo

>>

>>

>> Bill,

>>

>> We are still waiting for alternate orthoimagery regarding Pier Echo to

>>

>

>

>> validate the position on the 19 foot sounding. We have reason to

>> believe the current orthophoto we have may not be accurately

>> georeferenced on Pier Echo, this is what promulgated the need for

>> verification.

>>

>> We would like to get this issue resolved in an expedient manner. You

>> had indicated about diving on this pier during the telecon. Also,

>> LCDR Brennan has mentioned that we could task our Navigation Response

>> Team (who is currently close by) to sweep the area with their sonar.

>> This way if there was an obstruction, we could get a fully developed

>> least depth.

>>

>> Your thoughts on the best available option? Attached to this email

is

>>

>

>

>> the most up to date orthophoto we have, with the 19 foot sounding

>> overlaid.

>>

>> Thanks,

>> Matt

>>

>>

>> Johnson, William H. CIV ComNavRegNW Port Operations wrote:

>>

>>

>>>

>>> Matthew,

>>> We'll be standing by.

>>>

>>> R/ Bill Johnson

>>> Navy Region Northwest Port Operations

>>> Office: 360-476-1138

>>> Cell: 360-340-2683

>>>

>>>

>>> -----Original Message-----

>>> From: Matthew Wilson [mailto:Matthew.Wilson@noaa.gov]  
>>> Sent: Thursday, July 16, 2009 5:38  
>>> To: Johnson, William H. CIV ComNavRegNW Port Operations  
>>> Cc: [Richard.T.Brennan@noaa.gov](mailto:Richard.T.Brennan@noaa.gov)  
>>> Subject: Pier Echo  
>>>  
>>>  
>>> Bill,  
>>>  
>>> Thanks a lot for your time yesterday, your insight is much  
>>> appreciated  
>>>  
>>>  
>>  
>>  
>>> and I feel this coordination will provide a smooth transition from  
>>> data to the updated chart.  
>>>  
>>> Regarding the 19 foot obstruction off of Pier Echo, please stand by.  
>>>  
>  
>  
>>> We are currently digging a little deeper on this one, and I want to  
>>> obtain alternate orthoimagery for verification of the position of  
the  
>>> 19 foot sounding. I'll get back to you when this verification is  
>>>  
>>>  
>> complete.  
>>  
>>  
>>> Thanks,  
>>> Matt  
>>>  
>>> --  
>>> Respectfully,  
>>>  
>>> Matthew J. Wilson  
>>> Physical Scientist  
>>> NOAA Atlantic Hydrographic Branch  
>>> 757-441-6862x112  
>>> [matthew.wilson@noaa.gov](mailto:matthew.wilson@noaa.gov)  
>>>  
>>>  
>>>  
>> --  
>> Respectfully,  
>>  
>> Matthew J. Wilson  
>> Physical Scientist

>> NOAA Atlantic Hydrographic Branch  
>> 757-441-6862x112  
>> [matthew.wilson@noaa.gov](mailto:matthew.wilson@noaa.gov)  
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> --  
> Respectfully,  
>  
> Matthew J. Wilson  
> Physical Scientist  
> NOAA Atlantic Hydrographic Branch  
> 757-441-6862x112  
> [matthew.wilson@noaa.gov](mailto:matthew.wilson@noaa.gov)  
>

---

**From:** "Chris van Westendorp" <Christiaan.VanWestendorp@noaa.gov>  
**To:** "Matthew Wilson" <Matthew.Wilson@noaa.gov>  
**Cc:** "LCDR Rick Brennan" <Richard.T.Brennan@noaa.gov>  
**Sent:** Monday, August 10, 2009 11:21 AM  
**Attach:** 00194X092904162921.GIF; 00581X093404163422.GIF; Christiaan\_VanWestendorp.vcf  
**Subject:** [Fwd: RE: Bremerton]

Matt,

Your buoy investigation request from NAVO...

- Chris

----- Original Message -----

**Subject:**RE: Bremerton

**Date:**Sat, 08 Aug 2009 15:10:15 -0500

**From:**Mensi, Bryan L CIV N62306 <[bryan.mensi@navy.mil](mailto:bryan.mensi@navy.mil)>

**To:**Chris van Westendorp <[Christiaan.VanWestendorp@noaa.gov](mailto:Christiaan.VanWestendorp@noaa.gov)>

**CC:**Saunders, Janice L CIV N62306 <[janice.saunders@navy.mil](mailto:janice.saunders@navy.mil)>, Robinson, Chris S CIV N62306  
<[chris.s.robinson1@navy.mil](mailto:chris.s.robinson1@navy.mil)>, Thompson, Bobbie J CIV N62306  
<[bobbie.j.thompson@navy.mil](mailto:bobbie.j.thompson@navy.mil)>

**References:**<[4A577E98.3070108@noaa.gov](mailto:4A577E98.3070108@noaa.gov)>

<[B7AE09E64B5AB046A49BF66C5C6E7E6E5972DF@naeanworez05v.nadsusea.nads.navy.mil](mailto:B7AE09E64B5AB046A49BF66C5C6E7E6E5972DF@naeanworez05v.nadsusea.nads.navy.mil)>  
<05C2DDFC-46A1-4047-9CD2-7A411B7C2893@mimectl> <[4A64D406.5080206@noaa.gov](mailto:4A64D406.5080206@noaa.gov)>

Chris,

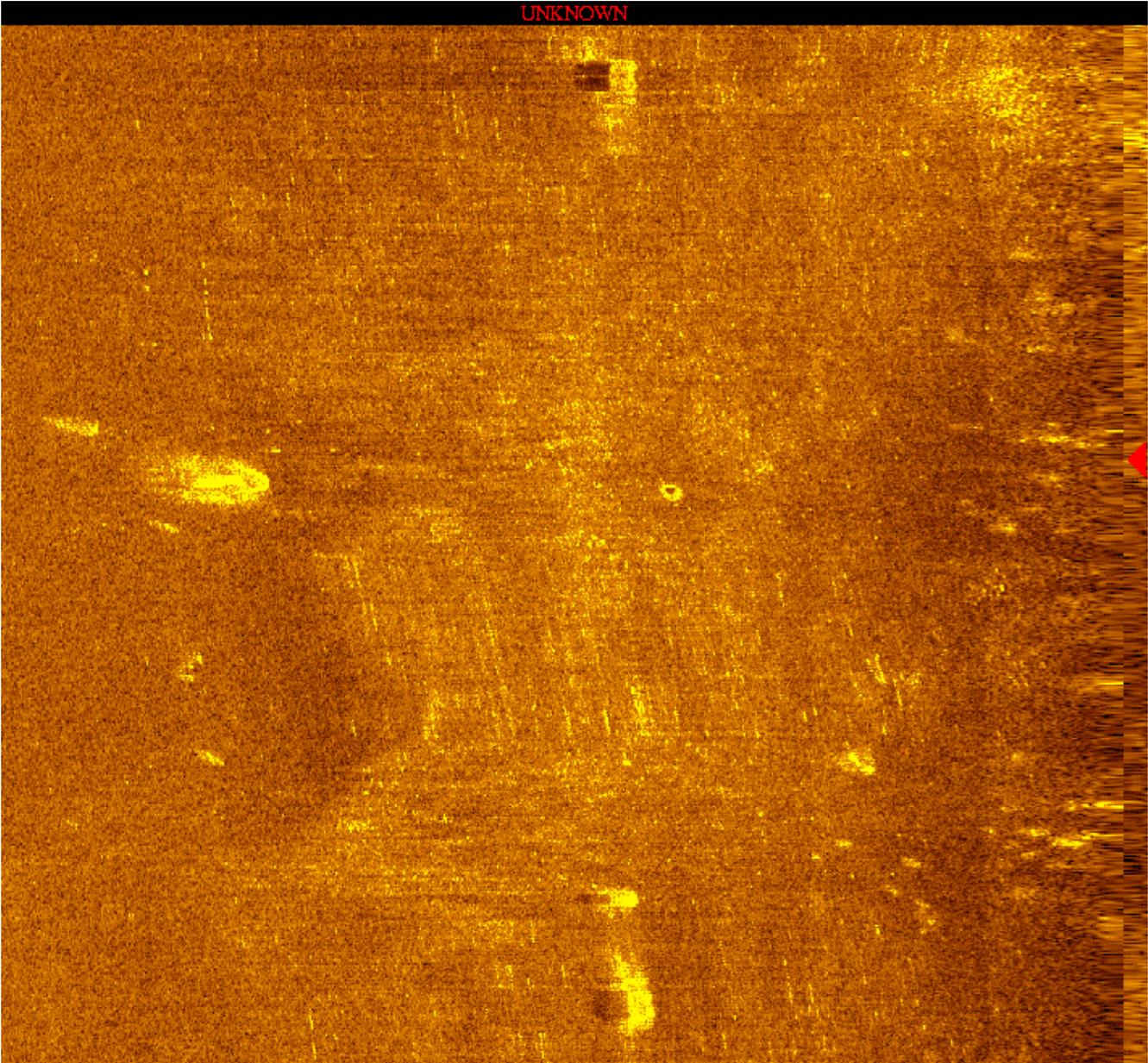
We were able to survey the area that included your feature. The mooring buoy you mentioned was positioned at exactly the same position you gave for the feature. Without even surveying the area it was perfectly evident that the bottom object was this buoy's anchor and chain. However, to be thorough we surveyed on either side of the buoy using sidescan sonar with 75m range scale set on high resolution (10cm). I have attached snippets of your feature. I'm sure you will agree that it is conclusively the anchor and chain from the mooring buoy. Our best position from the imagery data is:

47.54668, -122.65920

Cheers,  
Bryan

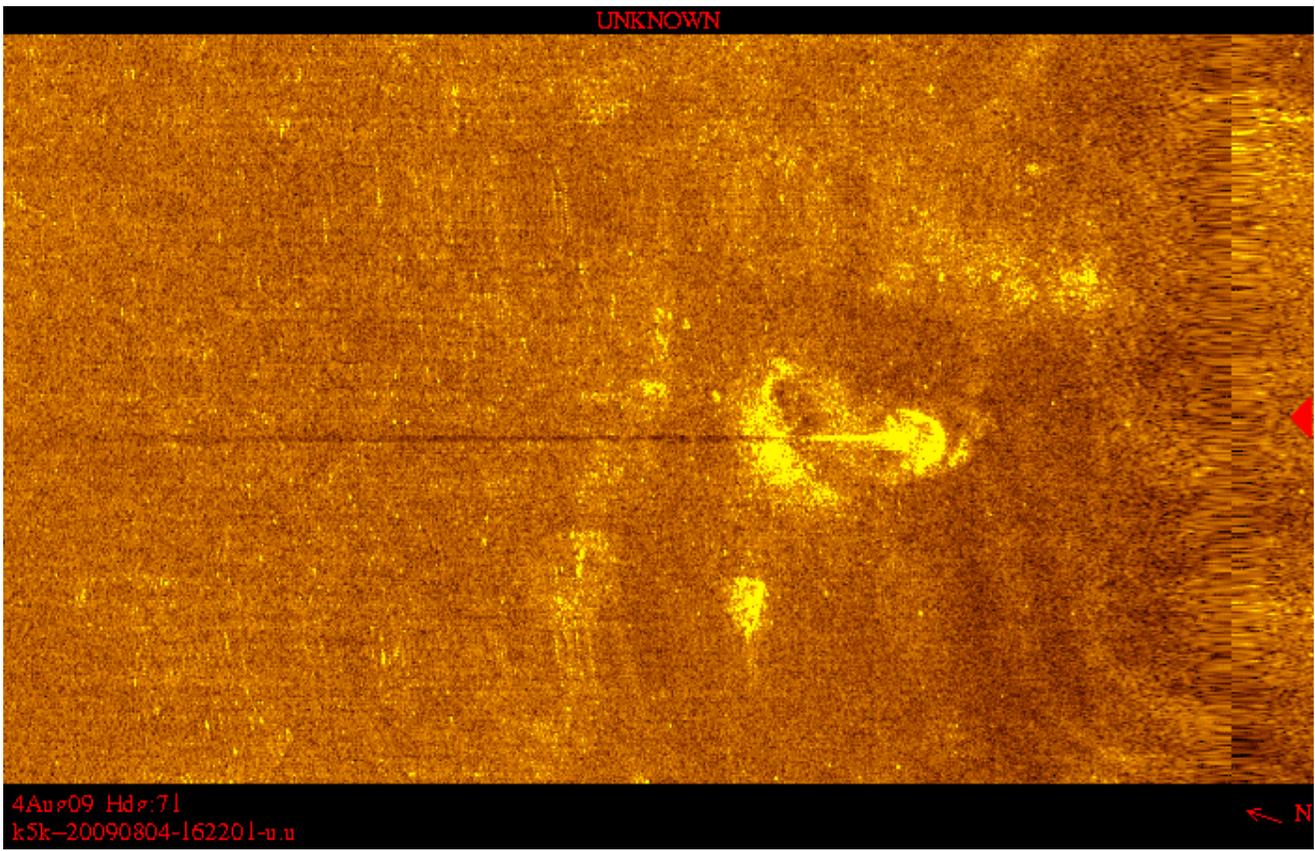
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UNKNOWN



4Au09 Hd 324  
k5k-20090804-162201-u.u





**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT to ACCOMPANY  
SURVEY F00541 (2007)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

**A. AREA SURVEYED**

No changes from DR.

**B. DATA ACQUISITION AND PROCESSING**

**B.1 DATA PROCESSING**

The following software was used to process data at the Atlantic Hydrographic Branch:

HSTP PYDRO version 2.5  
CARIS HIPS/SIPS version 6.1 SP2  
CARIS Bathy Manager version 2.1 SP1  
CARIS HOM version 3.3 SP3  
CARIS S57 Composer version 2.0

**B.2. QUALITY CONTROL**

**B.2.1. H-Cell**

The survey area encompasses the Navy piers at Bremerton. Drawing from past experience compiling around Navy facilities, it is considered propitious to coordinate with the appropriate Navy points of contact regarding the particular area in question. To involve the Navy in the compilation of the chart accomplishes some important goals. The first goal has a customer service focus, in that, during any step of the chart compilation certain cartographic options present themselves in how to represent particular data, we can confer with the Navy and choose the option to best serve their needs and usage of the piers in question. Secondly, involving the Navy during this stage of chart compilation alerts the appropriate Navy facilities to any particular hazards in the area, shoal soundings or obstructions, and to any specific challenges to chart compilation. This early coordination with the Navy works to alleviate any surprises or customer dissatisfaction with the final published chart, and the final product can be suitably tailored to fit the needs of the particular Navy facilities affected by the chart update.

For survey F00541, a teleconference was held on July 15, 2009, with the following Navy personnel in attendance: Bill Johnson (Navy Region Northwest Port

Operations), CAPT John Cousins (Navy Meteorology and Oceanography Command), CDR Raymond Delgado (Navy Fleet Survey Team), and CDR Lynn Oschmann (THIRD Fleet Oceanographer). The following NOAA personnel were in attendance: LCDR Rick Brennan, CAPT Dave Neander, and PS Matthew Wilson.

Of particular concern to Navy port facilities are the shoal depths alongside piers. In anticipation for this discussion, the multibeam data was edited around each of the Bremerton piers, such that all data falling under the piers was rejected. In addition, to account for fendering systems, all multibeam data that fell within 1m (a default value) of each pier face on the horizontal plane was rejected. This methodology is described in the screen captures to follow.

A preliminary dense sounding set was generated from the edited multibeam bathymetry. Particular emphasis was given to the shoal soundings around each pier, which are highlighted below with red circles. The following slides were distributed to each of the above Navy and NOAA personnel for their review prior to the meeting.

## NOAA Chart 18452 Sinclair Inlet

- Hydrographic Survey F00541 was conducted in and around the piers of the Bremerton Naval Base by NOAA Navigation Response Team 3 in 2007.
- Multibeam data was edited around the pier faces with the methodology described in the next slide (Slide 2).
- Multibeam data edited using orthophotos from 2008—not the raster chart (hence some soundings in the following slides may not align exactly with piers as delineated on raster chart).

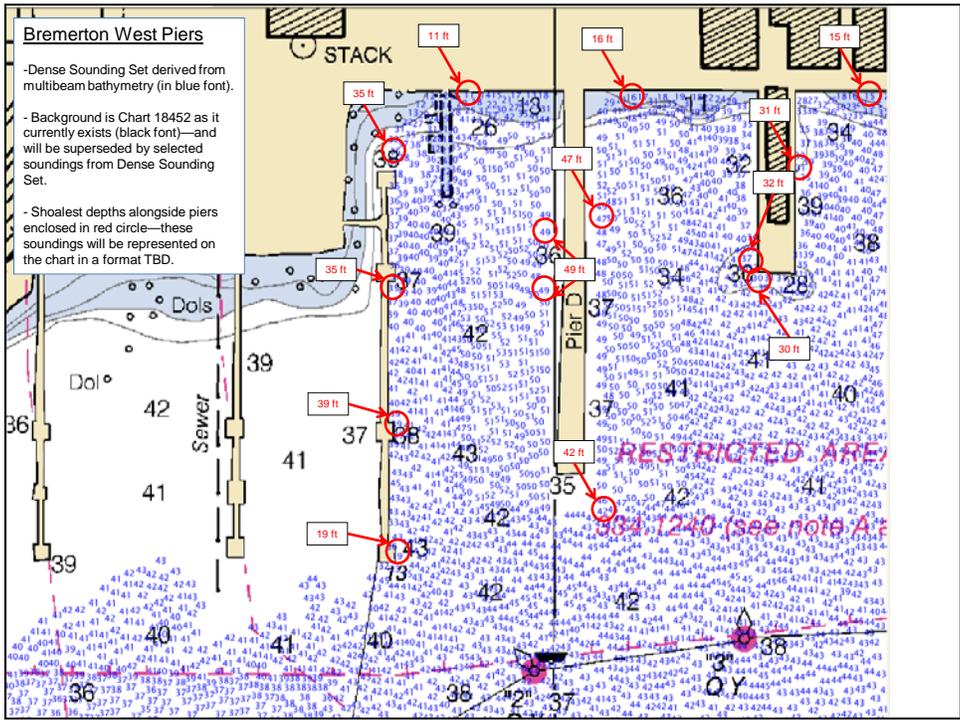
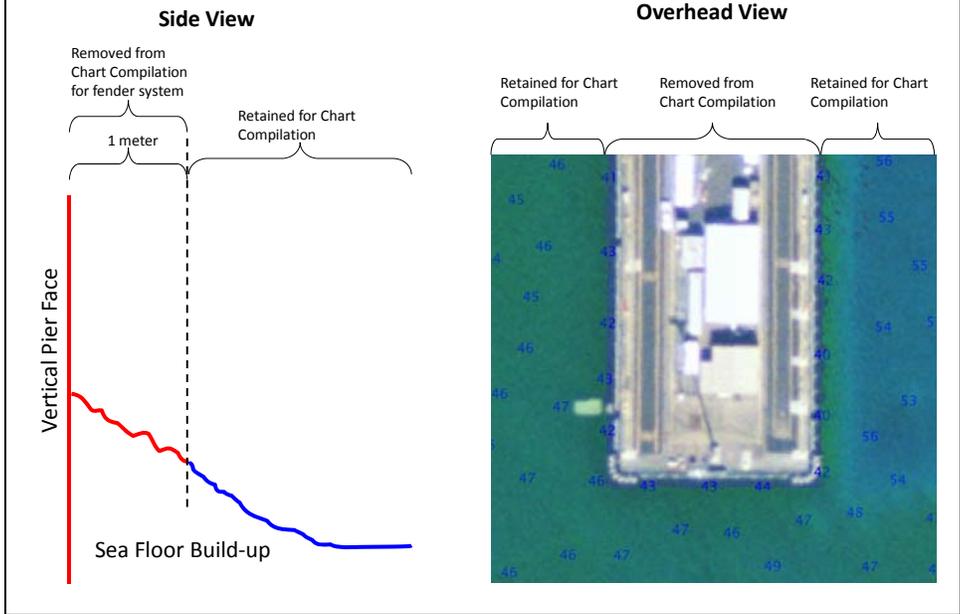


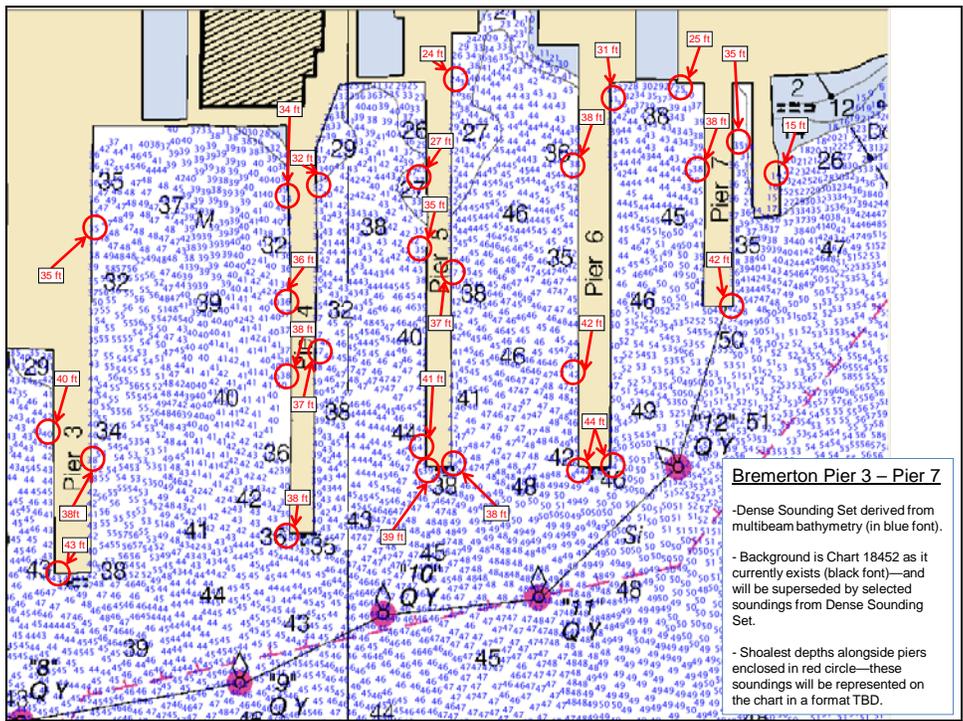
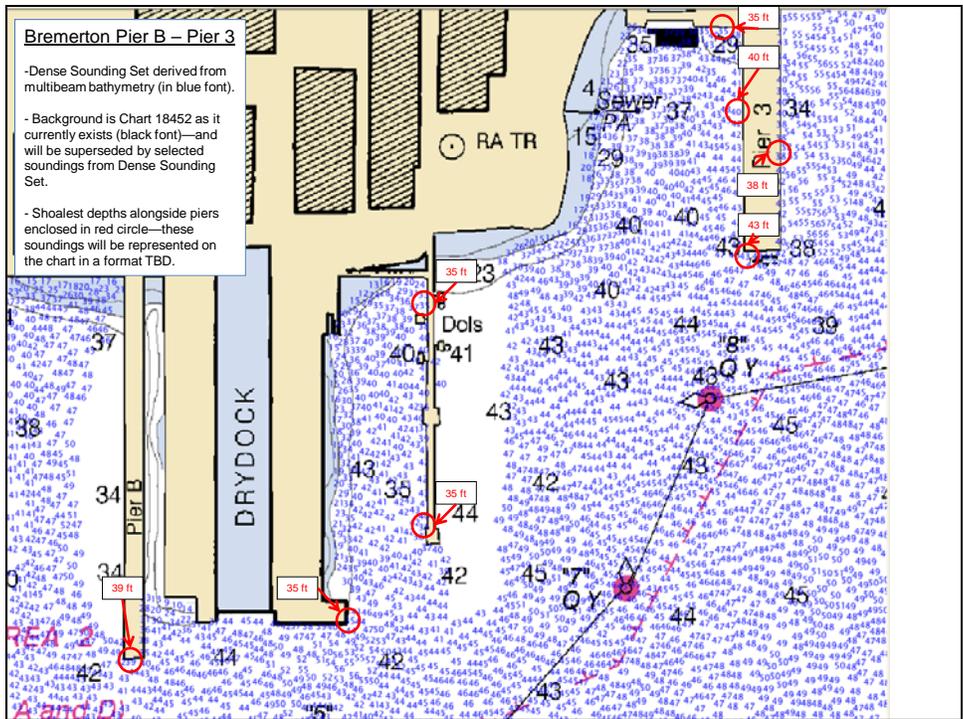
NOAA  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
U.S. DEPARTMENT OF COMMERCE



U.S. DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

### Pier Face Methodology For Chart Compilation





The challenge of chart compilation around piers is to address the most shoal depths pier-side. Normally, contours are utilized for this representation of shoal soundings along tight gradients, but this is not an option alongside pier faces. In the past, the shoal sounding, as visualized at chart scale, would merely be nudged over slightly, so the sounding itself could fit on the chart without disrupting the shoreline or pier as

charted. This is no longer considered a best practice within NOAA, as it has been decided the geographic integrity of the sounding should be preserved, and this should take priority over ease of chart compilation.

In order to address this challenge, the Navy was presented with three options:

- If the current observed shoal pier-side depths were not of concern to the Navy, chart soundings could be selected as normal, and the most shoal soundings would be chosen such that the shoreline was not disrupted. The most shoal depths alongside the piers would not be represented on the chart, however the Navy would have the detailed information of the location of the shoal soundings via the Powerpoint.
- The most shoal depths alongside each pier/berth could be represented in a tabular format somewhere on the chart.
- The most shoal depths alongside each pier/berth could be typed in font alongside each pier/berth.

Each pier was discussed with regards to observed shoal depth and the type of vessel which typically utilizes each berth. The significant shoal depths are displayed in the slides above, and this data was submitted to the Navy personnel listed above. After discussion it was concluded that the observed shoal depths were not of concern for the vessels in use at the Bremerton piers, and the first option listed above was the most desired cartographic representation for the Navy. Hence the chart sounding selection in and around the Bremerton piers does not include the shoalest depths alongside the piers. The shoalest depths were chosen that could fit at chart scale without disrupting the shoreline.

The one exception is the 19 and 23 foot soundings off the end of Pier Echo, which were of significant concern. These soundings were initially thought to represent a significant obstruction in this location. Further analysis revealed a problem with the orthophoto (obtained from the USGS Seamless Website)—a portion of the photo is shifted, like the mosaic was improperly assembled. The result could mean that the 19 foot obstruction is not necessarily off the end of Pier Echo, and could be part of the pier structure itself, in which case it could be rejected from the data.

It was obvious more investigation was needed. Bill Johnson requested Navy divers to swim the end of Pier Echo (including the forward section of the ship currently berthed in the vicinity). The results of the dive indicated that there was no change in terrain in the area of the 19 foot sounding. There was a 2x4 foot section of steel found in this location—however this is not nearly large enough to be correlated to the 19 foot sounding or considered a danger to navigation in this water depth. See DR Supplemental Correspondence for the complete dive report.

After the dive, it was noted by Bill Johnson that the end of the security fence terminates at the seaward end of Pier Echo, in close proximity to the observed 19 foot sounding. The end of this security fence is anchored with three large mooring blocks, each connected with a chain understandably covered with marine growth. These chains and mooring blocks may well be what the observed obstruction in the Caris HDCS data.

The results of the dive and additional input from Bill Johnson were considered sufficient to disprove the obstruction viewed in the sonar and the 19 and 23 foot

soundings produced as a result. The Navy was in agreement and confident that the depths in the vicinity are in the 41-42 foot range. Hence the obstruction was rejected from the data and the surface recomputed and re-finalized. The dense sounding set and chart soundings were updated accordingly.

The findings are also deemed sufficient to disprove the 13 foot sounding currently charted. A blue note is included within the H-Cell recommending the 13 foot sounding be deleted.

Guidance was also received from Bill Johnson regarding buoys in Sinclair Inlet. Some of these have been removed. The H-Cell has been updated accordingly, and see ER section D.2.1.

The Navy personnel involved in the chart compilation requested that a preliminary draft chart 18452 be sent to them for their review prior to its publication. Mr. Joe Robinson of MCD was contacted regarding this request. Mr. Robinson informed AHB that they could facilitate this request given mailing addresses of the recipients of the preliminary chart. The Navy personnel who personally requested to see a copy of the preliminary chart 18452, and their respective mailing addresses, are as follows:

William Johnson  
Port Operations N31  
467 "W" Street, 8<sup>th</sup> Floor  
Bremerton, WA 98314

METOC Officer (N312)  
Commander Third Fleet  
53690 Tomahawk Drive STE 338  
San Diego, CA 92147-5004

Commander U.S. Pacific Fleet  
Attn: Fleet Oceanographer  
250 Makalapa Drive, Bldg 352  
Pearl Harbor, HI 96860-3131

AHB respectfully requests that MCD send the above recipients a copy of the chart 18452 prior to its publication, as a means of soliciting their input and to ensure the final product meets their needs. As explained above, this prior coordination will alleviate surprises or customer dissatisfaction with the final published chart.

The final products from the review of this survey were two 50cm resolution surfaces derived from multibeam sonar. The two surfaces correlate with Sinclair Inlet and the area which encompasses Rich Passage and Point White. As described above, the multibeam data was edited around the pier faces of Sinclair Inlet to exclude sounding data under and around the piers out to 1 meter. After editing, the surfaces were re-finalized. The multibeam surface encompassing Rich Passage and Point White was generalized into a product surface with a 5 meter resolution. It is not considered a best practice to generalize a surface around piers, hence the multibeam surface of Sinclair Inlet was not generalized into a product surface.

A dense sounding set was created from the final surfaces using a shoal-biased radius of 1mm at the scale of the largest scale chart (1:10,000). In order to create depth

curves, a TIN was made from the dense sounding selection. A surface was interpolated from the TIN at a 50m resolution, and this interpolated surface was shifted by a factor of -0.229 to account for NOAA's rounding convention. Finally the depth curves were created from the interpolated, shifted surface, and are included in the H-Cell for reference only.

The meta layers were hand drawn to encompass the multibeam coverage in each survey area. In Sinclair Inlet, the meta layers were pulled back off the piers in accordance with how the multibeam was edited. Separate M\_CSCL meta layers were created for Rich Passage and Point White, both areas that fall outside the bounds of the largest scale chart 18452 (1:10,000), and are encompassed within chart 18449 (1:25,000).

The gate to the security fence and each corresponding buoy around the restricted area associated with the Navy facilities at Bremerton were positioned by the field unit and is included in the H-Cell, as BCNLAT and BCNSPP objects (for the gate) and BOYSPP (for the buoys of the fence). Charted dols and mooring buoys confirmed by the field unit were imported from the ENC as MORFAC objects.

According to Bill Johnson, Navy Region Northwest Port Operations, Pier Delta was demolished and rebuilt in recent years. The raster chart and ENC reflect the old pier. The updated bounds of the new pier were delineated from USGS orthoimagery and included in the H-Cell as a SLCONS line object. In addition, Pier 8 was found to be incorrectly charted. The correct bounds of Pier 8 were also defined with the orthoimagery and included in the H-Cell as a SLCONS line object.

Bottom samples were not acquired during this survey, hence the charted seabed areas were imported from the ENC and into the H-Cell as SBDARE objects.

The pre-compilation components of the H-Cell include the dense sounding selection and chart sounding selection (SOUNDG), features (BCNLAT, BCNSPP, BOYSPP, DEPCNT, DEPARE, MORFAC, OBSTRN, PILPNT, SBDARE, SLCONS), meta layers (M\_COVR, M\_CSCL, M\_QUAL), and cartographic blue notes (\$CSYMB). All of the components with the exception of the dense sounding selection and depth curves were exported into S-57 format in order to create the H-Cell deliverable. Similarly, the dense sounding selection and depth curves were exported into S-57 format separately, and then both S-57 files were processed in Caris HOM to convert the metric units to feet. The final products are two S-57 files, one that contains the chart soundings, features, meta objects, and blue notes (F00541\_CS), and one that contains the dense sounding selection and depth curves (F00541\_SS). Finally, quality assurance checks were performed utilizing Caris S-57 Composer version 2.0.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to the Marine Chart Division, Silver Spring, Maryland.

**F00541 CARIS H-Cell final deliverables include the following products:**

F00541_CS.000	1:10,000 Scale	F00541 H-Cell with Chart Scale Selected Soundings
F00541_SS.000	1:5,000 Scale	F00541 Selected Soundings (Survey Scale)

### **B.2.2. Junctions**

No contemporary surveys exist for junctioning.

## **C. VERTICAL AND HORIZONTAL CONTROL**

Final corrections were applied by the field unit and no other tidal corrections were required.

## **D. RESULTS AND RECOMMENDATIONS**

### **D.1 CHART COMPARISON**

#### **18452 (16<sup>th</sup> Edition, 10/02/1999)**

Corrected through NM 06/13/2009  
Corrected through LNM 06/02/2009  
Scale 1:10,000

#### **18449 (18<sup>th</sup> Edition, 10/01/2003)**

Corrected through NM 06/13/2009  
Corrected through LNM 06/02/2009  
Scale 1:25,000

### **ENC Comparison**

#### **US5WA21M**

Sinclair Inlet  
Edition 6  
Application Date 2009-04-14  
Issue Date 2009-04-14  
Chart 18452

#### **US5WA14M**

Puget Sound Seattle to Bremerton  
Edition 12  
Application Date 2009-05-19  
Issue Date 2009-05-19  
Chart 18449

### **D.1.1 Hydrography**

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section “D” and Appendix 1&2 of the Descriptive Report. The following exceptions are noted:

- a. The charted 24 foot shoal at approximately 47-32-48.58N, 122-39-32.73W has been disproved with multibeam sonar and should be superseded with the findings of this survey. The chain for the mooring buoy associated with buoy A-12 is visible in the bathymetry in the same location. Later this feature was confirmed with side scan sonar to indeed be buoy A-12, by Navy hydrographic survey teams

- working in this area during the time of H-Cell compilation (see DR Supplemental Correspondence). With bathymetric and side scan sonar confirmation, the buoy was rejected from the data. The location of the mooring buoy A-12 should be revised from its current charted position at 47-32-43.9285N, 122-39-34.7166W to its bathymetric survey position, 47-32-48.2078N, 122-39-33.0095W.
- b. Recommend to remove the charted 36, 35, 37, 37 foot soundings located around Pier Delta. This area is now within the bounds of the expanded, rebuilt Pier Delta, included in the H-Cell as a SLCONS object.
  - c. The obstruction located off the end of Pier 6 at 47-33-25.8102N, 122-37-48.5933W was not observed in the bathymetry. Recommend to delete the obstruction from the chart.
  - d. The obstruction located off the end of Pier 5 at 47-33-25.8696N, 122-37-55.6680W was not observed in the bathymetry. Recommend to delete the obstruction from the chart.
  - e. The obstruction located off the end of Pier 4 at 47-33-23.7841N, 122-38-01.7660 was seen on one pass with the multibeam sonar. Recommend to retain this obstruction as charted. The obstruction was imported from the ENC into the H-Cell.
  - f. The obstruction located off the end of Pier 3 at 47-33-22.4881N, 122-38-12.1931W was not observed in the bathymetry. Recommend to delete the obstruction from the chart.
  - g. The three dols located in the vicinity of 47-33-40.56N, 122-37-26.78W and the one dol located at 47-33-37.23N, 122-37-35.85W were observed in the bathymetry. Recommend to retain as charted. The dols were imported from the ENC as MORFAC objects.
  - h. The charted pile located at 47-33-38.9434N, 122-37-32.9819W was not addressed in this survey. Recommend to retain as charted. The pile was imported from the ENC as a PILPNT object.
  - i. The remnants of a pier located between Pier Delta and Pier Echo were observed in the bathymetry and found to extend out further than charted. The charted piles were not observed by the field unit. Recommend to delete the two charted piles from the chart, and extend the charted submerged pier out to the charted piers. The SLCONS object representing the submerged pier was imported into the H-Cell and extended accordingly. These pier remnants correspond to AWOIS item 53556.

See the DtoN Report and AWOIS Report for charting recommendations regarding all submitted DtoN's and AWOIS items.

Note: the original project instructions for this survey specified 200% side scan sonar for this survey. Side scan sonar was not acquired due to time, prioritization, and equipment issues, and the project instructions were later amended such that side scan sonar was no longer required.

## **D.2. ADDITIONAL RESULTS**

### **D.2.1. Aids to Navigation**

- a. Recommend to retain the private buoys located at 47-33-42.1211N, 122-37-20.2019W and 47-33-40.6199N, 122-37-20.5702W. The buoys were imported from the ENC as BCNLAT and BCNSPP objects, respectively.

- b. The charted mooring buoy “L-1” located at 47-32-59.8016N, 122-37-23.7353W has been removed, according to Navy Region Northwest Port Operations. Recommend to remove buoy “L-1” from the chart.
- c. The charted mooring buoy “L-3” located at 47-33-02.5186N, 122-37-44.1282W has been removed, according to Navy Region Northwest Port Operations. Recommend to remove buoy “L-3” from the chart.
- d. The charted mooring buoy “L-4” located at 47-32-30.3904N, 122-39-09.3481W was not found by the field unit, nor is it evident in the bathymetry or orthophoto. Recommend to remove the mooring buoy “L-4” from the chart.
- e. The charted mooring buoy located at 47-33-07.6338N, 122-38-43.0181W was not observed in the bathymetry or orthophoto. Recommend to delete the mooring buoy from the chart.
- f. The charted mooring buoy located at 47-33-04.4233N, 122-39-00.1454W was not observed in the bathymetry or orthophoto. Recommend to delete the mooring buoy from the chart.
- g. The charted mooring buoy located at 47-32-53.3274N, 122-38-58.0416W was not observed in the bathymetry or orthophoto. Recommend to delete the mooring buoy from the chart.
- h. The charted mooring buoy “A-11” located at 47-32-43.1621N, 122-39-11.2774W has been removed, according to Navy Region Northwest Port Operations. Recommend to remove buoy “A-11” from the chart.
- i. The charted security fence outlining the restricted area has changed position. Recommend to revise the position of the security fence and its associated buoys 1-12 to the updated positions in the H-Cell. In addition, with the exception of buoy 1, the color of each buoy has changed from yellow to red. The updated position of buoys 1-11 and the two buoys marking either end of the gate to the fence is included in the H-Cell as a BOYSPP objects. The fence itself is included in the H-Cell as an OBSTRN line object.

### **D.3. MISCELLANEOUS**

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey:

### **D.4. ADEQUACY OF SURVEY**

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

**APPROVAL SHEET**  
**F00541**

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

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**Matthew J. Wilson**  
Physical Scientist  
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: \_\_\_\_\_  
**Richard Brennan**  
LCDR, NOAA  
Chief, Atlantic Hydrographic Branch