NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey *MULTIBEAM*

Field No. *B*

Registry No. *H11019*

LOCALITY

State *New Jersey*

General Locality *Atlantic Ocean*

Sublocality *Townsends Inlet to Two Mile Beach*

2002

CHIEF OF PARTY

PAUL DONALDSON

Science Applications International Corporation

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DATE

H11019

NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTRY NO. **H11019**

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO. **B**

State New Jersey

General locality Atlantic Ocean

Locality Townsends Inlet to Two Mile Beach

Scale 1:20,000 Date of survey July 27, 2002 –October 3, 2002

Instructions Dated 27 October 2000 Project No. OPR-C303-KR-02

Vessel *R/V OceanExplorer* US905425

Chief of Party *PAUL DONALDSON*

Surveyed by Steven Lemke, Paul Donaldson, Gary Davis, Allan Quintal, Pam Clark, Deborah Smith, Jason Infantino.

Soundings taken by **echo sounder**, hand lead, pole MULTIBEAM RESON SEABAT 8101

Graphic record scaled by survey personnel

Graphic record checked by survey personnel

Protracted by Automated plot by HP1055CM

Verification by ***Atlantic Hydrographic Branch Personnel***

Soundings in fathoms, **feet,** meters at MLW, **MLLW**

REMARKS: **Contract #** 50-DGNC-0-90015
Contractor: Science Applications International Corp., 221 Third Street; Newport, RI 02840
Times: All times are recorded in UTC
Purpose: To provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of the assigned area.

Notes in red in the D.R. were made during office processing.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537. ☆ U.S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6

Science Applications International Corporation (SAIC) warrants only that the survey data acquired by SAIC and delivered to NOAA under Contract 50-DGNC-0-90015 reflects the state of the sea floor in existence on the day and at the time the survey was conducted.

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Descriptive Report to Accompany
Hydrographic Survey H11019
Scale 1:20,000, Surveyed 2002
R/V OceanExplorer
Science Applications International Corporation (SAIC)
Paul Donaldson, Hydrographer

PROJECT
Project Number: OPR-C303-KR-02
Dates of Instructions: 27 October 2000 **Original:** 50-DGNC-0-90015
25 June 2002 **Task Order #:** 56-DGNC-2-33010
Dates of Supplemental Instructions: 29 January 2001, 27 June 2002
Sheet Letter: B
Registry Number: H11019
Purpose: To provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of the assigned area.

A. AREA SURVEYED

Description:

The area surveyed was a section of the Atlantic Ocean extending from Townsends Inlet to Two Mile Beach. The area was surveyed with a multibeam sonar and a towed side scan sonar. The depth range encountered in this area was from 6 to 66 feet.

The survey area is defined by the following (NAD83) vertices:

Latitude	Longitude
38° 57' 27.44"N	74° 49' 29.49"W
38° 58' 32.84"N	74° 40' 50.59"W
39° 03' 29.25"N	74° 35' 45.36"W
39° 06' 48.53"N	74° 41' 13.31"W
Thence, following the 8-meter curve to:	
38° 57' 27.44"N	74° 49' 29.49"W

The specified area was expanded to accommodate full investigation of four of the thirteen full investigation AWOIS items assigned. AWOIS item 11418 was surveyed during H11104, Contract No.: 50-DGNC-0-90015, Task Order #: 56-DGNC-2-33009 and reported in Descriptive Report, H11104, SAIC Doc 02-TR-205, Project No. OPR-C303-KR-02, submitted October 10, 2002.

Table A-1. Dates of multibeam data acquisition in calendar and Julian days

Calendar Date	Julian Days
July 27, 2002	208
July 28, 2002	209
July 29, 2002	210
July 30, 2002	211
July 31, 2002	212
Aug. 01, 2002	213
Aug. 03, 2002	215
Aug. 04, 2002	216
Aug. 05, 2002	217
Aug 06, 2002	218
Aug 08, 2002	220
Aug. 09, 2002	221
Aug. 10, 2002	222
Aug. 11, 2002	223
Aug. 12, 2002	224
Aug. 14, 2002	226
Aug. 18, 2002	230
Aug. 19, 2002	231
Aug. 20, 2002	232
Aug. 22, 2002	234
Aug. 23, 2002	235
Aug 25, 2002	237
Aug. 26, 2002	238
Aug. 27, 2002	239
Sept. 04, 2002	247
Sept. 05, 2002	248
Sept. 06, 2002	249
Sept. 07, 2002	250
Sept. 08, 2002	251
Sept. 09, 2002	252
Sept. 10, 2002	253
Sept. 11, 2002	254
Sept. 12, 2002	255
Oct. 02, 2002	275
Oct. 03, 2002	276

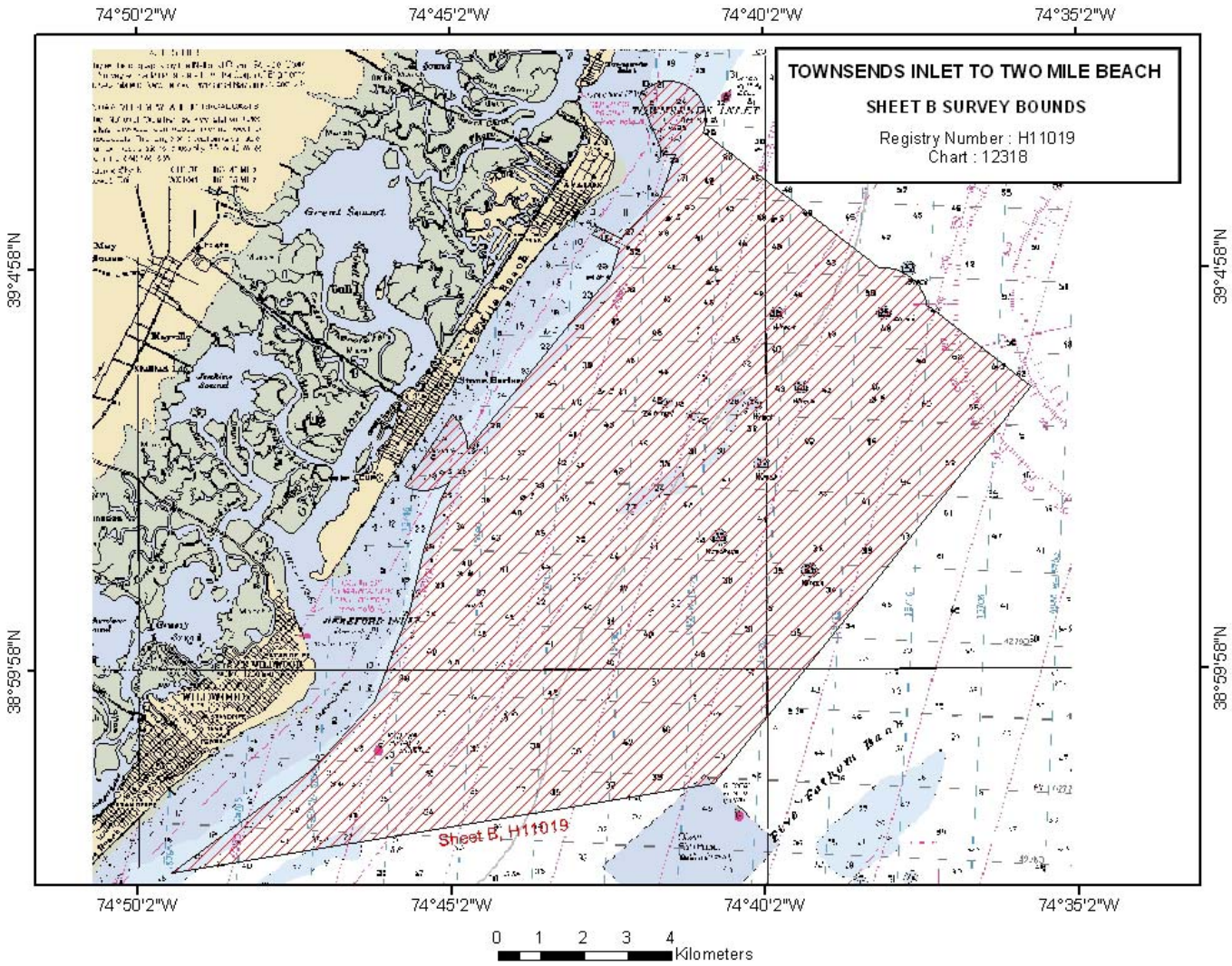


Figure A-1. H11019 Survey Bounds

B. DATA ACQUISITION AND PROCESSING *See also the Evaluation Report*

B.1 EQUIPMENT

A detailed description of the systems used to acquire and process these data has been included in the separate Data Acquisition and Processing Report* for OPR-C303-KR-02 delivered October 09, 2002. There were no variations from the configuration described therein. The information below summarizes the larger report.

Table B-1. Major Systems by Manufacturer and Model Number

	Manufacturer / Model Number	Subsystem
Multibeam Sonar	RESON SeaBat 8101	Transducer 8101 Processor
Side Scan Sonar	Klein 2000 Towfish	K-Wing Depressor, Transceiver/Processing Unit (TPU)
Vessel Attitude System	TSS POS/MV Inertial Navigation System	
Positioning System	TSS POS/MV	
	Trimble 7400 GPS Receiver	
	Trimble Probeacon Differential Beacon Receiver	
	Leica MX41R Differential Beacon Receiver	
Sound Velocity System	Brooke Ocean Technology Ltd., Moving Vessel Profiler-30	Applied Microsystems Ltd. Smart SV and Pressure Sensor

Survey Vessel

The *R/V OceanExplorer* was the platform for multibeam sonar, side scan sonar and sound velocity data collection. The main cabin of the vessel was used as the data collection center. All data were shipped to the Data Processing Center in the SAIC Newport, RI office for data processing. The POS/MV IMU was mounted on the vessel, centerline just forward and above the RESON 8101 transducer, below the main deck. The multibeam sounder transducer was mounted on the keel. Table B-2 is a list of vessel characteristics for the *R/V OceanExplorer*.

Table B-2. Survey Vessel Characteristics

Vessel Name	LOA	Beam	Draft	Max Speed	Gross Tonnage	Power (Hp)	Registration Number
R/V OceanExplorer	60’	16’4”	6’	17 kn	56	1100	US905425

* ***See original field records.***

Major Systems

SAIC used their Integrated Survey System (**iss2000**) to acquire and process these survey data. Mission planning was conducted on Linux platforms, while data acquisition and survey control were accomplished in a WindowsNT environment. Multibeam processing was performed on Linux systems. Side scan data were reviewed on a WindowsNT platform using Triton-Elics' Isis software, while they were mosaiced in **SABER** on a Linux platform.

B.2 QUALITY CONTROL

There were 100 linear nautical miles of cross lines surveyed and 2011 linear nautical miles of main scheme lines surveyed resulting in 5 percent coverage by cross lines. The cross lines were oriented at 128°/308° and were spaced approximately 800 meters apart, while the main scheme lines line were oriented at 38°/218° and were spaced 40 meters apart. The range scale was set to 50 meters for the side scan acquisition, while the swath width for the multibeam varied with depth. The following histograms represent the distribution of selected soundings by beam number. Figure B-1 illustrates the number of selected soundings versus beam number while Figure B-2 illustrates the percentage of selected soundings versus beam number.

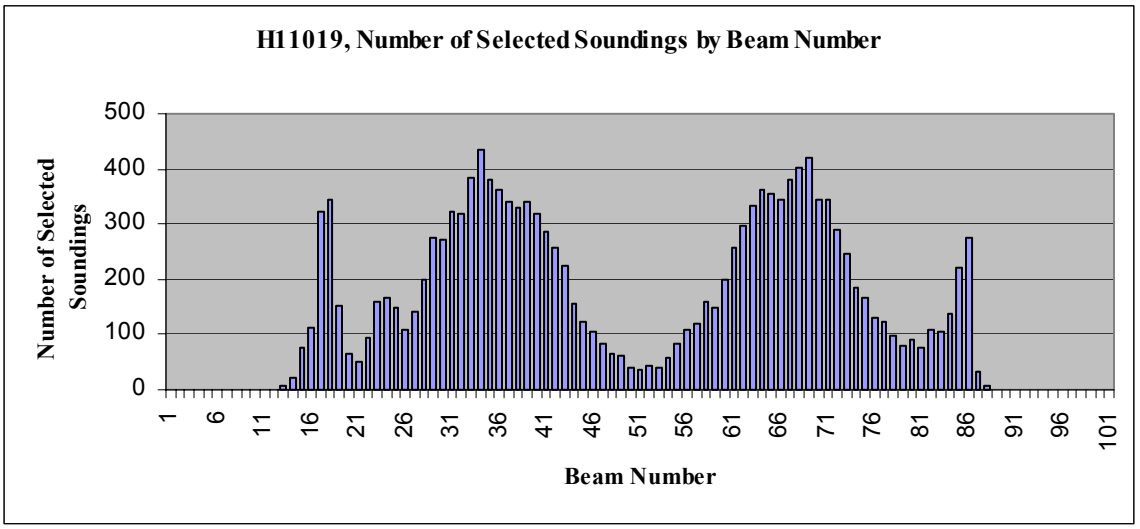


Figure B-1. Histogram of Selected Soundings by Beam Number – H11019

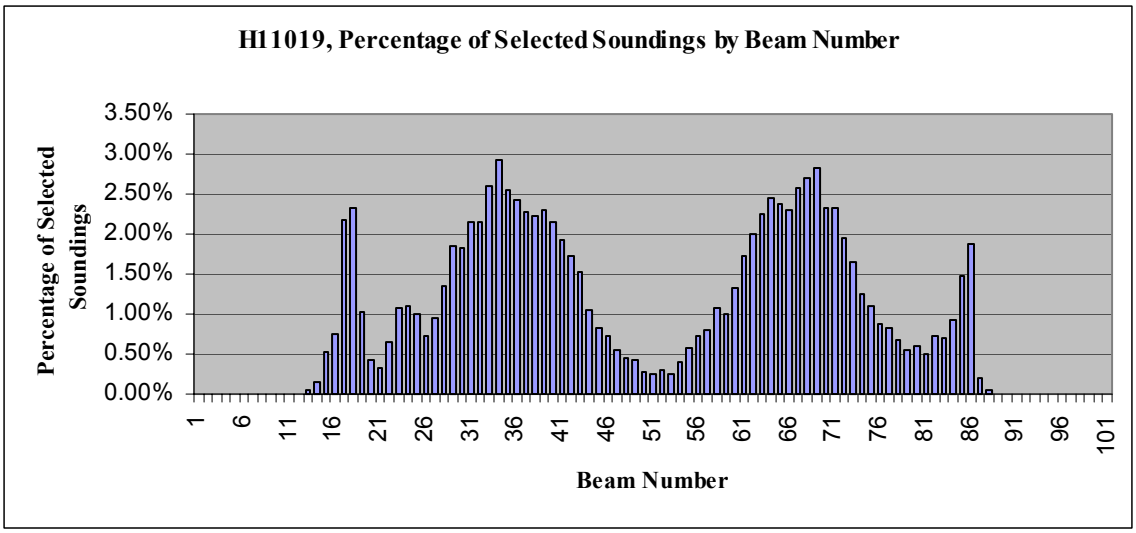


Figure B-2. Histogram of Percentage of Selected Soundings by Beam Number - H11019

Comparisons of all crossing data in H11019 show that 99.4% of comparisons are within 25 centimeters, 99.9% of comparisons are within 30 centimeters. The comparisons larger than 30 centimeters are accounted for by the normal small DGPS position scatter in areas of slopes and sand waves. Table B-3 shows the comparisons using all crossings in H11019.

Table B-3. Junction Analysis All Main Scheme vs. Cross Lines Near Nadir, H11019

Depth Difference Range		All		Positive		Negative		Zero
		Count	Percent	Count	Percent	Count	Percent	Count
0cm to	5cm	94437	47.84	42089	39.11	35019	48.31	17329
5cm to	10cm	62942	79.72	38368	74.77	24574	82.22	
10cm to	15cm	22304	91.02	14716	88.45	7588	92.68	
15cm to	20cm	13520	97.87	9429	97.21	4091	98.33	
20cm to	25cm	3110	99.44	2215	99.27	895	99.56	
25cm to	30cm	927	99.91	651	99.87	276	99.94	
30cm to	35cm	139	99.98	98	99.96	41	100.00	
35cm to	40cm	32	100.00	32	99.99	0	100.00	
40cm to	45cm	4	100.00	4	100.00	0	100.00	
45cm to	50cm	1	100.00	1	100.00	0	100.00	
	Totals	197416	100.00%	107603	54.51%	72484	36.72%	17329 8.78%

Details of 92 selected nadir or near-nadir crossings in different areas of H11019 are listed in the Separates to this report. The comparisons, comprising more than 1% of the crossings in the survey, were randomly selected for spatial and temporal distribution over the entire survey area.

Table B-4 depicts the junction analysis using all comparisons in the common area between H11104 and H11019. These comparisons show 99.2% were within 25 centimeters and 99.9% were within 30 centimeters. The table illustrates that 100% of the comparisons are within 45 centimeters.

Table B-4. Junction Analysis, H11104 vs. H11019 (all comparisons)

Difference Range		All		Positive		Negative		Zero
		Count	Percent	Count	Percent	Count	Percent	Count
0cm to	5cm	22722	42.90	9470	38.80	9030	37.11	4222
5cm to	10cm	16781	74.59	8747	74.64	8034	70.12	
10cm to	15cm	6788	87.40	3295	88.14	3493	84.48	
15cm to	20cm	4946	96.74	2274	97.46	2672	95.46	
20cm to	25cm	1274	99.15	494	99.48	780	98.66	
25cm to	30cm	395	99.89	112	99.94	283	99.83	
30cm to	35cm	47	99.98	12	99.99	35	99.97	
35cm to	40cm	6	99.99	1	100.00	5	99.99	
40cm to	45cm	3	100.00	1	100.00	2	100.00	
	Totals	52962	100.00%	24406	46.08%	24334	45.95%	4222
								9.97%

B.3 CORRECTIONS TO ECHO SOUNDINGS

Please refer to the Data Acquisition and Processing Report* for a description of all corrections applied to echo soundings. There were no deviations from the corrections described therein. **** See original field records.***

C. VERTICAL AND HORIZONTAL CONTROL ***See also the Evaluation Report***

NOAA tide station 8534720 Atlantic City, NJ was the source of verified water level heights for determining correctors to soundings. ***The verified water level data was downloaded, applied, and submitted before the April 21, 2003 Tidal Epoch update was implemented by NOAA, NOS, CO-OPS.*** Cross line and sheet-to-sheet comparisons indicated that the NOAA zoning was adequate. The NOAA parameters were used to develop the water level correctors for soundings on this survey.

These survey data were collected in horizontal datum NAD-83, using the UTM-18 projection. The following equipment was used for positioning on the *R/V OceanExplorer*:

- TSS POS/MV, Serial Number 314
- Trimble 7400 DSi GPS Receiver, Serial Number 3815A22469

Differential correctors were from the U.S. Coast Guard Stations at Annapolis, MD and

Reedy Point, Delaware. Daily position confidence checks were established using a Trimble DGPS. A real-time monitor raised an alarm when the two DGPS positions differed by more than 10 meters horizontally. Positioning confidence checks were well within an inverse distance of 5 meters.

Please refer to the Vertical and Horizontal Control Report* OPR-C303-KR-02 for detailed descriptions of the procedures and systems used to attain hydrographic positioning. There were no variations from the procedures described therein.

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report*

D.1 CHART COMPARISON

H11019 was compared to:

- Chart 12300, 42nd Edition, 17 February 2001, at scale 1:400,000 corrected through 26 October 2002 from Notice to Mariners and the NOAA Critical Corrections.
- Chart 12214, 43rd Edition, 16 December 2000, at scale 1:80,000 corrected through 21 May 2002 and updated with Notice to Mariners through 10/26/2002
- Chart 12318, 40th Edition, 17 February 2001, at scale 1:80,000 corrected through 5 July 2002 and updated with Notice to Mariners through 10/26/20002
- Chart 12316, 28th Edition, 25 August 2001, at scale 1:40,000 corrected through 25 August 2002 and updated with Notice to Mariners through 10/12/2002

Recommend reconstruction of the common areas of all charts using data from this survey. The following discrepancies were noted during chart comparisons:
Concur with all charting comparison observations and recommendations except as noted below. Note that page numbers within the Descriptive Report may have changed.

Charts 12214 and 12318
The charted depth of 10 feet MLLW at approximately 39° 01’ 07”N 074° 45’ 47”W, NAD83 is in depths of 22 to 26 feet MLLW. Chartlets 1 and 16 in Separates.*

The charted depth of 6 feet MLLW at approximately 39° 00’57”N 074° 45’ 52”W, NAD83 is in depths of 22 to 24 feet MLLW. Chartlets 1 and 16 in Separates.*

The charted depth of 21 feet MLLW at approximately 39° 00’ 42”N 074° 45’ 44”W, NAD83 is in depths of 26 to 30 feet MLLW. Chartlets 1 and 21 in Separates.*

The charted depth of 15 feet MLLW at approximately 39° 00’ 28”N 074° 46’ 03”W, NAD83 is in depths of 21 to 23 feet MLLW. Chartlets 1 and 21 in Separates.*

See AWOIS 1241 (p.11). Chartlets 3 and 17 in Separates.*

* ***See original field records.***

The charted depth of 36 feet MLLW at approximately 38° 59' 40"N 074° 44' 42"W, NAD83 is in depths of 43 feet MLLW. Chartlets 6 and 21 in Separates.*

See AWOIS 11416 (p.13). Chartlet 10 in Separates.*

The charted depth of 27 feet MLLW at approximately 39° 05' 27"N 074° 42' 09"W, NAD83 is in depths of 18 to 21 feet MLLW. Chartlet 10 in Separates.*

The charted depth of 20 feet MLLW at approximately 39° 04' 40"N 074° 42' 50"W, NAD83 is in depths of 25 to 27 feet MLLW. Chartlet 10 in Separates.*

See AWOIS 11417 (p.13). Chartlet 10 in Separates. *

See AWOIS 1262 described under AWOIS 1259 (p.14). Chartlets 11 and 12 in Separates.*

See AWOIS 1257 (p.12). Chartlets 11 and 12 in Separates. *

See AWOIS 1256 (p.12). Chartlet 11 in Separates. *

See AWOIS 1251 (p.12). Chartlet 14 in Separates. *

See AWOIS 1240 (p15). Chartlet 14 in Separates. *

See AWOIS 11249 (p.12). Chartlet 14 in Separates. *

See AWOIS 11250 (p.13). Chartlet 14 in Separates. *

See AWOIS 1248 (p.12). Chartlet 14 Separates. *

See AWOIS 1243 (p11). Chartlet 17 in Separates.*

A wreck in 47 feet MLLW at 38° 59' 32.01"N 074° 42' 34.65"W, NAD83 (Feature 15) is not charted. Recommend charting a sounding of 47 feet MLLW and Wk ***and danger curve*** at 38° 59' 32.01"N 074° 42' 34.65"W, NAD83. Chartlets 4 and 20 in Separates. * ***(See also Table D-2, Feature 15 in this report)***

The charted enclosed 30 foot depth curve and blue tint centered at approximately 39° 03' 14"N 074° 40' 32"W, NAD83 should join the enclosed 30 foot curve centered at approximately 39° 02' 40"N 074° 40' 49"W, NAD83. The depth curve should then be extended southeast. Chartlet 14 in Separates. *

* ***See original field records.***

The charted 30 foot enclosed depth curve and blue tint centered at approximately 39° 02' 13"N 074° 41' 48"W, NAD83 should be moved to the south and extended to the southeast. Chartlet 17 in Separates. *

The 6, 12 and 18 foot depth curves from approximately 39° 01' 21"N 074° 45' 40"W, NAD83 to approximately 39° 00' 16"N 074° 46' 09"W, NAD83 should be moved to the west. Chartlets 1, 16, and 21 in Separates. *

The northwest edge of the enclosed 30 foot depth curve at approximately 38° 58' 05"N 074° 46' 25"W, NAD83 should be moved to the south. Chartlets 7 and 22 in Separates. *

Chart 12316

The charted depth of 23 feet MLLW at approximately 39° 05' 18"N 074° 42' 24"W, NAD83 is in depths of 16 to 18 feet MLLW. Chartlets 25 and 26 in Separates. *

The charted depth of 16 feet MLLW at approximately 38° 59' 45"N 074° 46' 16"W, NAD83 is in depths of 21 to 24 feet MLLW. Chartlet 29 in Separates. *

The charted depth of 19 feet MLLW at approximately 38° 59' 24"N 074° 46' 26"W, NAD83 is in depths of 25 to 26 feet MLLW. Chartlet 29 in Separates. *

The charted depth of 6 feet MLLW at approximately 39° 00' 57"N 074° 45' 51"W, NAD83 is in depths of 22 to 24 feet MLLW. Chartlet 29 in Separates. *

The charted depth of 15 feet MLLW at approximately 39° 00' 29"N 074° 46' 02"W, NAD83 is in depths of 20 to 21 feet MLLW. Chartlet 29 in Separates. *

See AWOIS 11416 (p.13). Chartlet 25 in Separates. *

Recommend removal of a charted black line at 39° 07' 17"N 074° 41' 44"W, NAD83. Chartlet 25 in Separates. * ***Do not concur. No black line charted at this location.***

See AWOIS 11417 (p13). Chartlets 25 and 26 in Separates. *

Chart 12300

See AWOIS 11416 (p.13). Recommend charting 1 ½ fathom sounding and Wk at 39° 06' 54.54"N 074° 41' 39.94"W, NAD83. Chartlet 31 in Separates. *

See AWOIS 1256 (p.12). Recommend charting 7 ½ fathom sounding and Wk. Chartlet 32 in Separates. *

See AWOIS 1241 (p.11). Recommend charting 5 ½ fathom sounding and Wk. Chartlet 36 in Separates. *

* ***See original field records.***

See AWOIS 1248 (p.12). Recommend charting 5 ½ fathom sounding and Wk. Chartlets 34 and 35 in Separates. *

See AWOIS 1262 described under AWOIS 1259 (p.14). Recommend charting 5 ½ fathom sounding and Wk. Chartlet 33 in Separates. *

See AWOIS1257 (p.12). Recommend charting 6 ¼ fathom sounding and Wk. Chartlets 32 and 33 in Separates. *

See AWOIS 11249 (p.12). Recommend charting a 3 ¾ fathom sounding and Wk. Chartlets 32 and 35 in Separates. *

See AWOIS 1249 (p.12). Recommend removing the cleared to 5 ½ fathom sounding and danger curve. Chartlets 32 and 35 in Separates. *

See AWOIS 1251 (p.12). Recommend removal of the wire drag symbol and moving the 3 ½ fathom sounding to 39° 03' 29.92"N 074° 39' 24.10"W, NAD83. Chartlets 32 and 34 in Separates. *

See AWOIS 1243 (p.11). Recommend removing the cleared to 6 ¼ sounding and danger curve and charting a 6 ½ fathom sounding and Wk. Chartlets 35 and 36 in Separates. *

Navigational Aids

The following table lists the aids to navigation in H11019. The USCG Light List-Vol.II-Atlantic Coast (Toms River, New Jersey to Little River, South Carolina) was compared to the buoys identified in H11019. Buoy R"2" is not on the light list and is not charted. This is consistent with charted "NOTE D Entrance to Inlets" which states, "The entrance channel at the inlets not protected by jetties are subject to frequent changes. The buoys are not charted because they are frequently shifted in position. Buoys are removed if shoaling makes inlets unnavigable". These aids adequately serve their intended purpose. ***Concur.***

Table D-1. Aids to Navigation

BUOY NAME	APPROXIMATE POSITION		MB/SS FILE NAME	CONFIRMED POSITION FROM MB/SS	
	LAT (N)	LON (W)		LAT (N)	LON (W)
RW "H"	38° 58' 57.60"	074° 46' 06.60"	hbmba02231.D02	38° 58' 59.36"	074° 46' 11.40"
R "2"	39° 05' 50.40"	074° 41' 48.00"	hbmba02250.D13		
			2501347.xtf	39° 05' 50.77"	074° 41'48.23"

* ***See original field records.***

AWOIS Items, Wrecks and Obstructions

AWOIS Items:

1241: A circle with a search radius of 1000 meters was covered with 200% side scan and resulting multibeam. Wreckage (feature #42) was located in 33 feet MLLW position 39° 01' 12.64"N 074° 39' 15.65"W, NAD83. One other feature was identified within the search radius (feature #47) ***and is addressed under AWOIS 1242***. Recommend removal of charted wreck cleared to 24 feet MLLW with danger curve and blue tint, and recommend charting a 33 feet MLLW sounding with label Wk ***and danger curve*** in the surveyed position. ***Concur with clarification. On chart 12300, combine with adjacent AWOIS 1243 (feature #5) and chart together as plural 33 Wks. Relevant only to charts 12300, 12318, and 12214.***

1243: A 1000 meter radius circle was surveyed with 200% side scan and resulting multibeam. One feature was found within the search radius. Recommend removal of charted ~~wreck~~ ***wreckage*** cleared to 37 feet MLLW with danger curve and blue tint ***in 39° 01' 38.4"N 074° 40' 44.57"W***, and recommend charting a 40 feet MLLW sounding with label Wk ***with danger curve*** in 39° 01' 37.84"N 074° 40' 43.21"W, NAD83 (feature #5). ***Concur with clarification. Chart as 40 Wreckage rather than 40 Wk. On chart 12300, combine with adjacent AWOIS 1241 (feature #42) and chart together as plural 33 Wks. Relevant only to charts 12300 and 12318.***

1248: A 1000 meter radius circle was surveyed with 200% side scan and resulting multibeam. Four features were found within the search radius (features #4, #21, #11, and #38). Feature #4 and #21 were wreckage within the charted danger curve and blue tint in 34 feet MLLW. Feature #21 was in 34 feet MLLW, 39° 02' 34.12"N 074° 39' 58.16"W, NAD83 and feature #4 was in 34 feet MLLW, 39° 02' 32.93"N 074° 40' 00.04"W, NAD83. Recommend removal of charted ***dangerous*** wreck cleared to 30 feet MLLW ***in 39°02'34.0"N 74°40'03.9"W***, and charting a 34 feet MLLW sounding with label Wk with a danger curve and blue tint in the surveyed position 39° 02' 34.12"N 074° 39' 58.16"W, NAD83. ***Concur with clarification. Chart features #4 and #21 together as 34 Wreckage in the surveyed position of feature #21, rather than as a Wk as recommended. Feature #11 is addressed in Table D-2, page 16, while feature #38 is insignificant- see Evaluation Report D.1.1.. Relevant only to charts 12300 and 12318.***

1249: In the vicinity of the charted 34 feet MLLW with danger curve and blue tint ***in 39°03'18.41"N, 74°40'09.57"W*** no significant feature was found within a 1000 meter radius circle surveyed with 200% side scan and resulting multibeam. Recommend removal of charted wreck cleared to 34 feet MLLW with danger curve and blue tint, and charting the soundings from this survey. ***Concur. Relevant only to charts 12300 and 12318.***

1251: A 1000 meter radius circle was surveyed with 200% side scan and resulting multibeam. The wreck, feature #3, was found to be covered 22 feet MLLW in 39° 03'

29.92”N 074° 39’ 24.10”W, NAD83. Feature #13 is an obstruction with a least depth of 37 feet MLLW at 39° 03’ 25.66”N 074° 39’ 20.04”W, NAD83 ***and is addressed in Table D-2, page 16 (and is also referenced under AWOIS 1253)***. Recommend removal of charted wreck cleared to 21 feet MLLW, charting 22 feet MLLW sounding with label Wk, and moving the danger curve and blue tint to the surveyed position 39° 03’ 29.92”N 074° 39’ 24.10”W, NAD83. ***Concur. Relevant only to charts 12300 and 12318.***

1256: A circle with a search radius of 1000 meters was covered with 200% side scan and resulting multibeam. A wreck found to be covered 45 feet MLLW in 39°04’ 11.64”N 074° 40’ 14.41”W, NAD83 (feature #8) was outside of the charted danger curve. Recommend removal of the ***charted wreck cleared to*** 38 feet MLLW ~~sounding~~ ***in 39°04’25.41”N, 74°39’50.57”W***, associated danger curve, and blue tint and charting a 45 feet MLLW sounding with the label Wk ***and a danger curve*** in the surveyed position. ***Concur. Note that the surveyed 45 Wk lies 720 meters to SW of the charted wreck. Relevant only to charts 12300 and 12318.***

1257: A 1000 meter radius circle was surveyed with 200% side scan and resulting multibeam. The wreck was found to be covered 38 feet MLLW in 39°04’ 25.64”N 074° 38’ 03.62”W, NAD83 (feature #2). Recommend removal of charted wreck cleared to 36 feet MLLW with danger curve and blue tint, and recommend charting the 38 feet MLLW sounding with label Wk ***and danger curve*** in the surveyed position. ***Concur. Relevant only to charts 12300 and 12318.***

11192: A 1000 meter radius circle was surveyed with 200% side scan and resulting multibeam to an inshore limit of 13 feet MLLW, 90 meters offshore from the charted position ***in 39°02’45.13”N, 74°45’27.32”W***. There was no feature found within the search area. Recommend charting the soundings from this survey. ***Do not concur. The obstruction’s existence is doubtful but cannot be conclusively disproved by current survey data. Retain charted Obstn symbol but modify label to ‘Obstn (Rep 1957) ED’. Relevant only to charts 12316 and 12318.***

11249: A 2000 meter radius circle was surveyed with 200% side scan and resulting multibeam. Least depth of 23 feet MLLW was found on the wreck, feature #7. Recommend removal of the charted dangerous ~~submerged~~ ***sunken*** wreck symbol and PD ***in 39° 03’ 09.00”N 074° 41’ 12.07”W***, charting a 23 feet MLLW sounding with danger circle blue tint and symbol Wk in 39° 03’ 15.00”N 074° 41’ 12.07”W, NAD83. Features #46, #25, #38, #12 and #4 were also found within the search radius. Recommend plotting features #46 and #25’s soundings in their surveyed positions with label Obstn. Features #38 and #12 are not significant. Feature #4 is reported as AWOIS 1248. ***Concur with clarification. Chart feature #7 (23 Wk) as recommended, but features #46 and #25 are dealt with elsewhere: feature #46 is addressed under AWOIS 1250 and feature #25 is addressed in Table D-2, page 16. Relevant only to charts 12300 and 12318. In addition, feature #25 is also applicable to chart 12316.***

11250: The area was surveyed with 200% side scan and resulting multibeam. Feature #7 was the only item identified within the search area. Feature #7 in 39° 03' 15.00"N 074° 41' 12.07"W, NAD83 is reported as AWOIS 11249. Recommend removal of the charted dangerous ~~submerged~~ ***sunken*** wreck symbol, circle, blue tint, PA, and 24 ft rpt ***in 39°03' 18.38"N 074° 41' 33.92"W*** and charting feature #7 as reported in AWOIS 11249. ***Concur. Relevant only to charts 12300 and 12318.***

11416: An 850 meter radius circle was surveyed with 200% side scan and resulting multibeam. Least depth of 10 feet MLLW was found on the wreck, Feature #29. Feature #29 was reported in Report of Danger to Navigation #1 H11019 with a least depth of 8 feet MLLW. After further investigation the least depth was confirmed as 10 feet MLLW. Recommend removal of the charted 8 feet ***Wk*** with danger circle and blue tint, removal of the charted ***danger curve and note*** Obstn PA (4 ft rep) ***in 39°06'51.48"N, 74°41'32.59"W***, and charting a 10 feet MLLW sounding with danger circle blue tint and symbol Wk in ~~38~~ ***39***° 06' 54.54"N 074° 41' ~~37.94~~***39.84*** "W, NAD83. An additional obstruction was found within the survey area (Feature #30). Recommend plotting a 27 feet sounding and label Obstn in 39° 06' 37.79"N 074° 41' 08.68"W, NAD83. ***Concur with clarification. Chart feature #29 (10 Wk) as recommended, but feature #30 (27 Obstn) is insignificant and is addressed in Table D-2, page 16. Relevant only to charts 12300, 12318, and 12316.***

11417: An area from approximately 300 meters northeast to approximately 275 meters southwest of the charted submarine pipeline was surveyed with 200% side scan and resulting multibeam. This area investigated showed no indication of the pipeline as charted, but had sewer outfall risers approximately 200 meters southeast of the charted pipeline (features #33, #34, #35, and #36). The risers extend from 39° 05' 04.91"N 074° 42' 03.58"W, NAD83 (feature #36) to 39° 05' 06.98"N 074° 42' 07.70"W, NAD83 (feature #33). Shoalest depth in the area was a 32 feet MLLW sounding on the riser in 39° 05' 04.91"N 074° 42' 03.58"W, NAD83 (feature #36). Recommend removal of the charted pipeline and label Sewer. Recommend charting 32 feet MLLW soundings in 39° 05' 07.06"N 074° 42' 07.76"W, NAD83 (feature #33) and 39° 05' 04.91"N 074° 42' 03.58"W, NAD83 (feature #36) with label subm sewer outfall. ***Do not concur. See Evaluation Report D.1.2. Relevant only to charts 12318 and 12316.***

11418: This AWOIS was reported in Descriptive Report, H11104, SAIC Doc 02-TR-205, Project No. OPR-C303-KR-02, submitted October 10, 2002. ***Concur, see survey H11104.***

2762: ***An 800 meter radius circle centered in 39°06'18.41"N, 74°40'34.57" W*** ~~The area~~ was partially surveyed with 200% side scan and resulting multibeam. The wreck was not found in the covered area. There were no significant features found in the surveyed area. Recommend charting the soundings from this survey. ***Concur. Note that this item was assigned for information only and is not charted. Relevant only to charts 12300, 12318, and 12316.***

1260: The area ***was*** surveyed with 200% side scan and resulting multibeam. Two features were identified in the covered area. Feature #23 is an obstruction with a least depth of 42 feet MLLW in 39° 04' 41.45"N 074° 41' 31.64"W, NAD83. Feature #24 is an obstruction with a least depth of 47 feet MLLW in 39° 04' 49.22"N 074° 41' 27.10"W, NAD83. Recommend charting a 42 feet MLLW sounding in 39° 04' 41.45"N 074° 41' 31.64"W, NAD83 (feature #23). ***Concur with clarification. Chart feature #23 as a dangerous 42 ft Obstn. The hydrographer also included feature #24, a 47 ft Obstn, on the smooth sheet, implying that it should be charted as well. Feature #24 is insignificant and should not be charted - see Evaluation Report D.1.1.. Relevant only to charts 12300, 12318, and 12316.***

1264: ***A 500 meter radius circle centered on 39°06'30.41"N, 74°41'58.58"W*** ~~The area~~ was partially surveyed with 200% side scan and resulting multibeam. The wreck was not found in the covered area. Recommend charting the soundings from this survey. ***Concur. Note that this item was assigned for information only and is not charted. Relevant only to charts 12300, 12318, and 12316.***

1259: The area was surveyed with 200% side scan and resulting multibeam. Two wrecks were found within the search area (features #1 and #2). Feature #2 is reported as AWOIS 1257 in 39°04' 25.64"N 074° 38' 03.62"W, NAD83. Feature #1 ***is*** located ***at*** 39°05' 01.13"N 074° 37' 45.85W, NAD83 and is believed to be AWOIS 1262 which was not assigned. Recommend removal of charted wreck cleared to 33 feet MLLW with danger curve and blue tint, and charting the 42 feet MLLW sounding with label Wk ***and danger curve*** in the surveyed position. ***Concur. Relevant only to charts 12300 and 12318.***

1255: ***A 2000 meter radius circle centered on 39°04'00.40"N, 74°43'58.58"W*** ~~The area~~ was partially surveyed with 200% side scan and resulting multibeam. No significant features were found within the surveyed area. Recommend charting the soundings from this survey. ***Concur. Note that this item was assigned for information only and is not charted. Relevant only to charts 12316 and 12318.***

1253: The area was surveyed with 200% side scan and resulting multibeam. The obstruction was not found in the covered area. Two features were identified in the covered area. Feature #3 is a wreck with a least depth of 22 feet MLLW at 39° 03' 29.92"N 074° 39' 24.10"W, NAD83 and is reported as AWOIS 1251. Feature #13 is an obstruction with a least depth of 37 feet MLLW at 39° 03' 25.66"N 074° 39' 20.04"W, NAD83 ***and is addressed in Table D-2, page 16***. Recommend charting a 37 feet MLLW sounding with label Obstn in the surveyed position. ***Concur with clarification. Due to chart scale both features cannot be charted. Chart feature #3 as recommended in AWOIS 1251 and extend its danger curve to include feature #13. Do not chart feature #13 as a separate 37 Obstn. Relevant only to charts 12300 and 12318.***

1252: The area was surveyed with 200% side scan and resulting multibeam. The obstruction was not found in the covered area. Two features were identified in the covered area. Feature #3 is a wreck with a least depth of 22 feet MLLW at 39° 03'

29.92”N 074° 39’ 24.10”W, NAD83 and is reported as AWOIS 1251. Feature #13 is an obstruction with a least depth of 37 feet MLLW at 39° 03’ 25.66”N 074° 39’ 20.04”W, NAD83. Recommend charting a 37 feet sounding MLLW and label Obstn in 39° 03’ 25.66”N 074° 39’ 20.04”W, NAD83. ***Do not concur. Both features are addressed elsewhere. See AWOIS 1251 for feature #3 and AWOIS 1253 for feature #13.***

1250: The area was surveyed with 200% side scan and resulting multibeam. Two features were identified in the covered area. Feature #46 is an obstruction with a least depth of 47 feet MLLW at 39° 03’ 45.95”N 074° 41’ 10.83”W, NAD83. Feature #7 is a wreck with a least depth of 23 feet MLLW at 39° 03’ 15.00”N 074° 41’ 12.07”W, NAD83. Feature #7 is reported as AWOIS 11249. Recommend charting a 47 feet MLLW sounding with label Obstn in the surveyed position. ***Concur. Relevant only to charts 12318 and 12300.***

1244: ***A 1000 meter radius area centered on 39°02’13.29”N, 74°41’30.81”W*** ~~The area~~ was surveyed with 200% side scan and resulting multibeam. No significant features were found within the surveyed area. Recommend charting the soundings from this survey. ***Concur. Note that this item was assigned for information only and is not charted. Relevant only to charts 12318 and 12300.***

1242: The area ***was*** surveyed with 200% side scan and resulting multibeam. Two features were noted in the covered area. Feature #42 was located in 33 feet MLLW position 39° 01’ 12.64”N 074° 39’ 15.65”W, NAD83 and is reported as AWOIS 1241. One other feature was identified within the search radius in 36 feet MLLW, 39° 00’ 51.47”N 074° 39’ 07.19”W (feature #47). Recommend charting a 36 feet MLLW sounding with label Obstn in the surveyed position. ***Do not concur. Insignificant- see Evaluation Report D.1.1.. Relevant only to charts 12318, 12214, and 12300.***

1240: ***A 2000 meter radius circle centered on 39°00’48.40”N, 74°41’58.58”W was*** ~~The area~~ surveyed with 200% side scan and resulting multibeam. No significant features were found within the surveyed area. Recommend charting the soundings from this survey. ***Concur. Relevant only to charts 12318 , 12214, and 12300.***

Uncharted Wrecks and Obstructions

Table D-2 lists uncharted wrecks and obstructions found in H11019 that are recommended for charting.

Table D-2. Uncharted Wrecks and Obstructions

Feature Number	Feature Position (NAD83)		Least Depth (Feet)	Charting Recommendations
	Latitude (N)	Longitude (W)		
11[1]	39° 02’ 52.49”	074° 39’ 45.16”	38.88	OBSTRS, chart sounding and label “Obstn” *
13[1]	39° 03’ 25.66”	074° 39’ 20.04”	37.57	OBSTR, chart sounding and label “Obstn” *

Feature Number	Feature Position (NAD83)		Least Depth (Feet)	Charting Recommendations
	Latitude (N)	Longitude (W)		
15	38° 59' 32.01"	074° 42' 34.65"	47.41	WRECK, chart sounding and label "Wk" ***Concur***
17	39° 01' 42.67"	074° 43' 58.94"	40.39	OBSTR, chart sounding and label "Obstn" *
18	38° 59' 54.76"	074° 45' 53.71"	35.83	WRECK, chart sounding and label "Wk" ***Concur.***
19	38° 59' 53.08"	074° 45' 30.13"	42.26	OBSTR, chart sounding and label "Obstn" ***Concur.***
22	39° 03' 54.14"	074° 40' 03.56"	35.30	OBSTR, chart sounding and label "Obstn" *
28	39° 07' 19.36"	074° 41' 40.00"	16.14	OBSTR, chart sounding and label "Obstn" ***Concur. Already charted on RNC through DtoN process.***
25[1]	39° 04' 09.20"	074° 41' 24.02"	47.38	OBSTR, chart sounding and label "Obstn" *
30[1]	39° 06' 37.79"	074° 41' 08.68"	27.39	OBSTR, chart sounding and label "Obstn" *
43	39° 00' 11.79"	074° 44' 32.79"	45.64	OBSTR, chart sounding and label "Obstn" *
44	38° 59' 29.65"	074° 40' 39.56"	43.04	OBSTR, chart sounding and label "Obstn" *
45	39° 02' 28.06"	074° 37' 31.73"	55.31	OBSTR, chart sounding and label "Obstn" *
48	39° 05' 08.62"	074° 42' 01.02"	36.75	OBSTR, chart sounding and label "Obstn" *
50	39° 02' 52.75"	074° 39' 17.72"	36.52	OBSTR, chart sounding and label "Obstn" *
51	39° 04' 25.46"	074° 42' 34.49"	34.25	OBSTR, chart sounding and label "Obstn" *

**** Do not concur. Insignificant See Evaluation Report D.1.1..***

[1] Note that features 11, 13, 25, and 30 are also referenced in the AWOIS Item discussions. Feature 11= AWOIS 1248, feature 13= AWOIS 1251 and 1253, feature 25= AWOIS 11249, and feature 30= AWOIS 11416.

Bottom Composition

There were 17 bottom samples taken to verify the bottom types charted for H11019. d to the charted bottom type.
Table D-3 compares information for each sample collected to the charted bottom type.

Table D-3. H11019 Bottom Sample Characteristics

Bottom Sample Position (NAD83)		Depth of Bottom Sample (ft)	Observed Bottom Type	Charted Bottom Type	Chart 12214	Chart 12316	Chart 12318
Latitude (N)	Longitude (W)						
38° 58' 34.80"	074° 46' 51.60"	46	fne S	S, M	X	X	X
38° 59' 28.20"	074° 44' 54.00"	44	S, Sh	S, Sh	X	~~X~~	X
38° 58' 22.80"	074° 42' 07.20"	39	S, Sh	S, Sh	X	~~X~~	X
38° 59' 37.20"	074° 41' 08.40"	46	S, Sh	S	X	~~X~~	X
39° 00' 44.40"	074° 39' 57.00"	37	S, Sh	S	X	~~X~~	X
39° 00' 42.00"	074° 41' 49.80"	40	S, Sh, Silt	S	X	~~X~~	X
39° 00' 46.80"	074° 44' 39.60"	44	fne S	h S	X	X	X
39° 01' 10.80"	074° 44' 49.80"	43	Silt	~~bk M~~ ***M***	~~X~~	X	X
39° 02' 27.00"	074° 45' 08.40"	25	fne S	~~gy S~~ ***S***		X	X

Bottom Sample Position (NAD83)		Depth of Bottom Sample (ft)	Observed Bottom Type	Charted Bottom Type	Chart 12214	Chart 12316	Chart 12318
Latitude (N)	Longitude (W)						
39° 02' 08.40"	074° 43' 48.60"	45	fne S, Sh	~~gy S~~ ***S***		X	X
39° 03' 20.40"	074° 38' 14.40"	46	crs S, sml P	~~gy S~~ ***S***		~~X~~	X
39° 03' 43.20"	074° 36' 19.80"	59	S, Sh	~~br S~~ ***S***		~~X~~	X
39° 05' 34.20"	074° 39' 49.20"	50	fne G	~~br S~~ ***S***		X	X
39° 05' 36.60"	074° 41' 28.80"	42	fne S, Sh	~~gy S~~ ***h S***		X	X
39° 04' 48.00"	074° 40' 51.00"	47	fne G	~~br S~~ ***S***		X	X
39° 03' 10.80"	074° 40' 21.60"	33	S, Sh	S		~~X~~	X
39° 03' 26.40"	074 °42 '34.20"	43	fne S, P	~~br S~~ ***S***		X	X

It is recommended that the bottom type charted be updated where necessary based on the information collected during the latest survey. ***Concur.***

D.2 ADDITIONAL RESULTS

Shoreline verification was not required for this survey. Comparison with prior surveys was not required under this contract. See Section D.1 Chart Comparison for comparison to the nautical charts.

Aids to Navigation

U.S. Coast Guard aids to navigation were found on station as charted and serve their intended purpose. Buoy R"2" is not charted and is consistent with charted NOTE D Entrance to Inlets which states, "The entrance channel at the inlets not protected by jetties are subject to frequent changes. The buoys are not charted because they are frequently shifted in position. Buoys are removed if shoaling makes inlets unnavigable".

E. APPROVAL SHEET

January 10, 2003

LETTER OF APPROVAL

REGISTRY NUMBER H11019

This report and the accompanying smooth sheet and digital data are respectfully submitted.

Field operations contributing to the accomplishment of survey H11019 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and smooth sheet have been closely reviewed and are considered complete and adequate as per the Statement of Work.

Reports previously submitted to NOAA for this project include:

Report	Submission Date
Data Acquisition and Processing Report	10/09/02
Vertical and Horizontal Control Report	01/10/03

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Paul L. Donaldson
Hydrographer
Science Applications International Corp.
Friday, January 10, 2003

APPENDIX I. DANGER TO NAVIGATION REPORTS

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H11019

Survey Title: State: New Jersey
Locality: Atlantic Ocean
Sublocality: Townsend Inlet to Two Mile Beach

Project Number: OPR_C303-KR-02

Survey Date: Aug 26, 2002 and on going

Features are reduced to Mean Lower Low Water using verified observed tides and are positioned on NAD 83.

Charts affected:	12318	40th Edition	Feb 17, 2001	1:80,000 scale
	12316	28th Edition	Aug 25, 2001	1:10,000 scale

DANGERS TO NAVIGATION

FEATURE	DEPTH (FT)	LATITUDE	LONGITUDE
Wreck	8	39/06/54.83	074/41/39.26
Obstruction	16	39/07/19.36	074/41/40.00

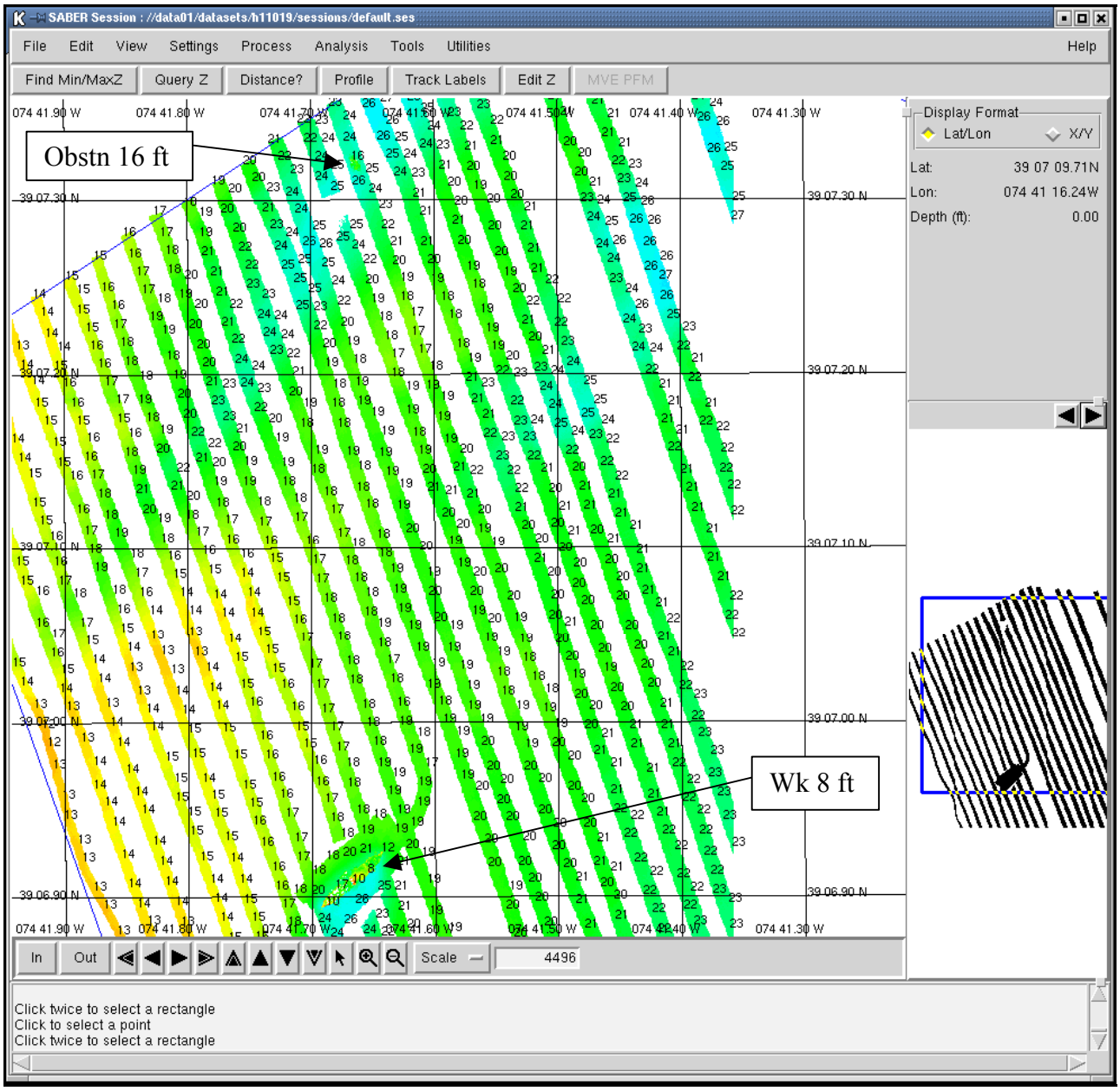


Figure App I-1. Gridded Depths and Selected Soundings, Wreck 8 Feet and Obstruction 16 Feet

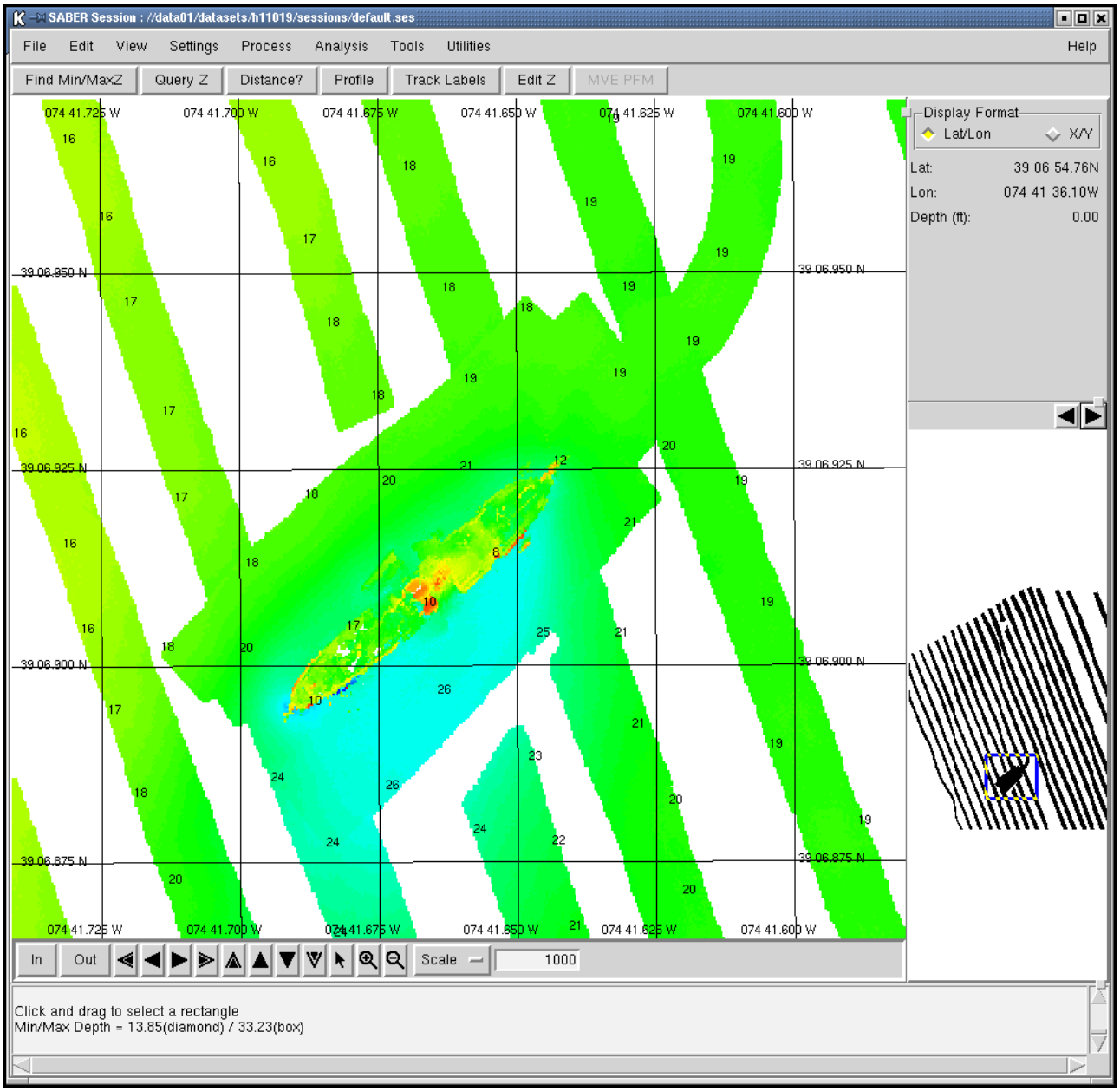


Figure App I-2. Gridded Depths and Selected Soundings, Wreck 8 Feet

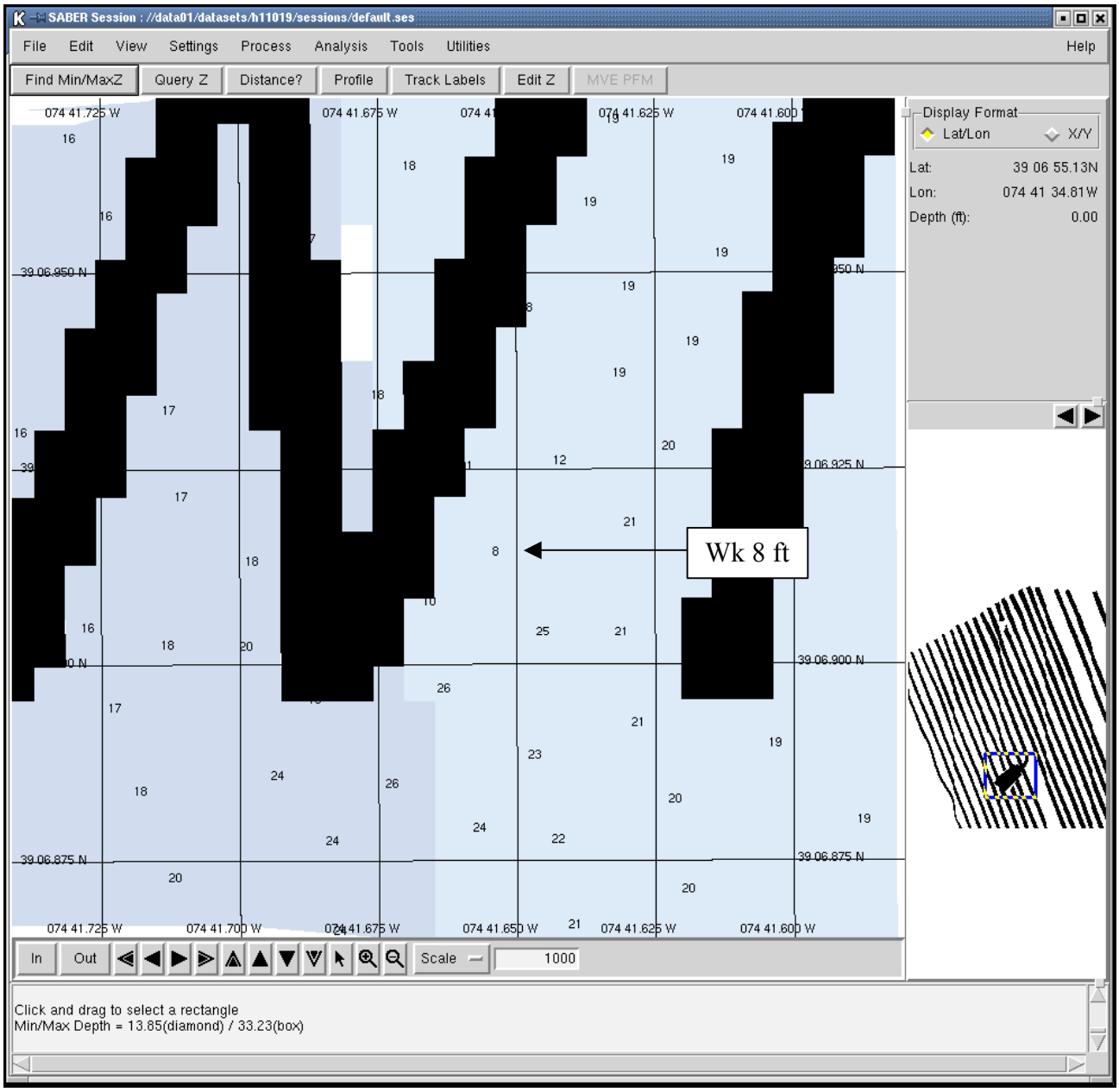


Figure App I-3. Chart 12318 and Selected Soundings, Wreck 8 Feet

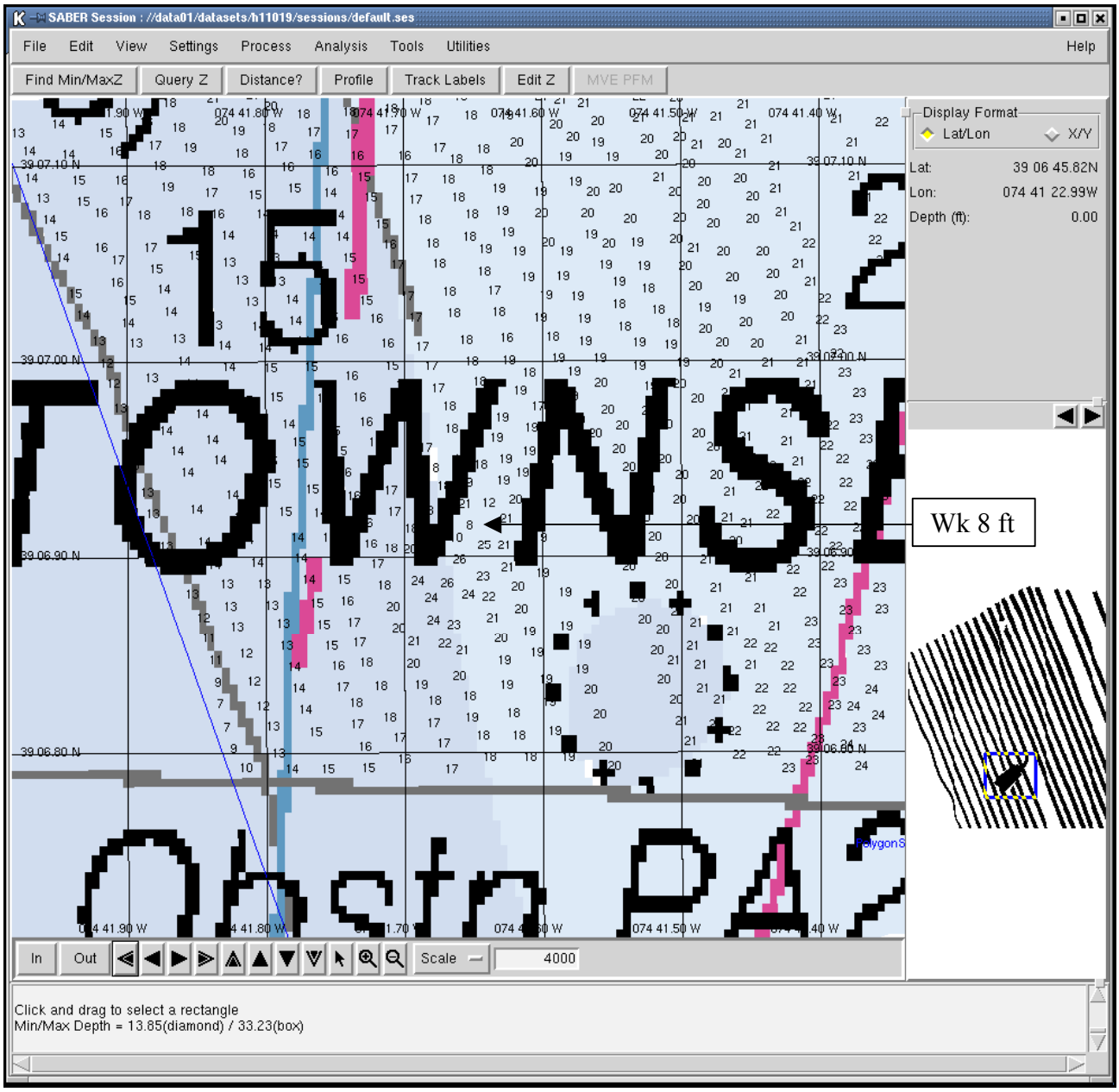


Figure App I-4. Chart 12318 and Selected Soundings, Wreck 8 Feet

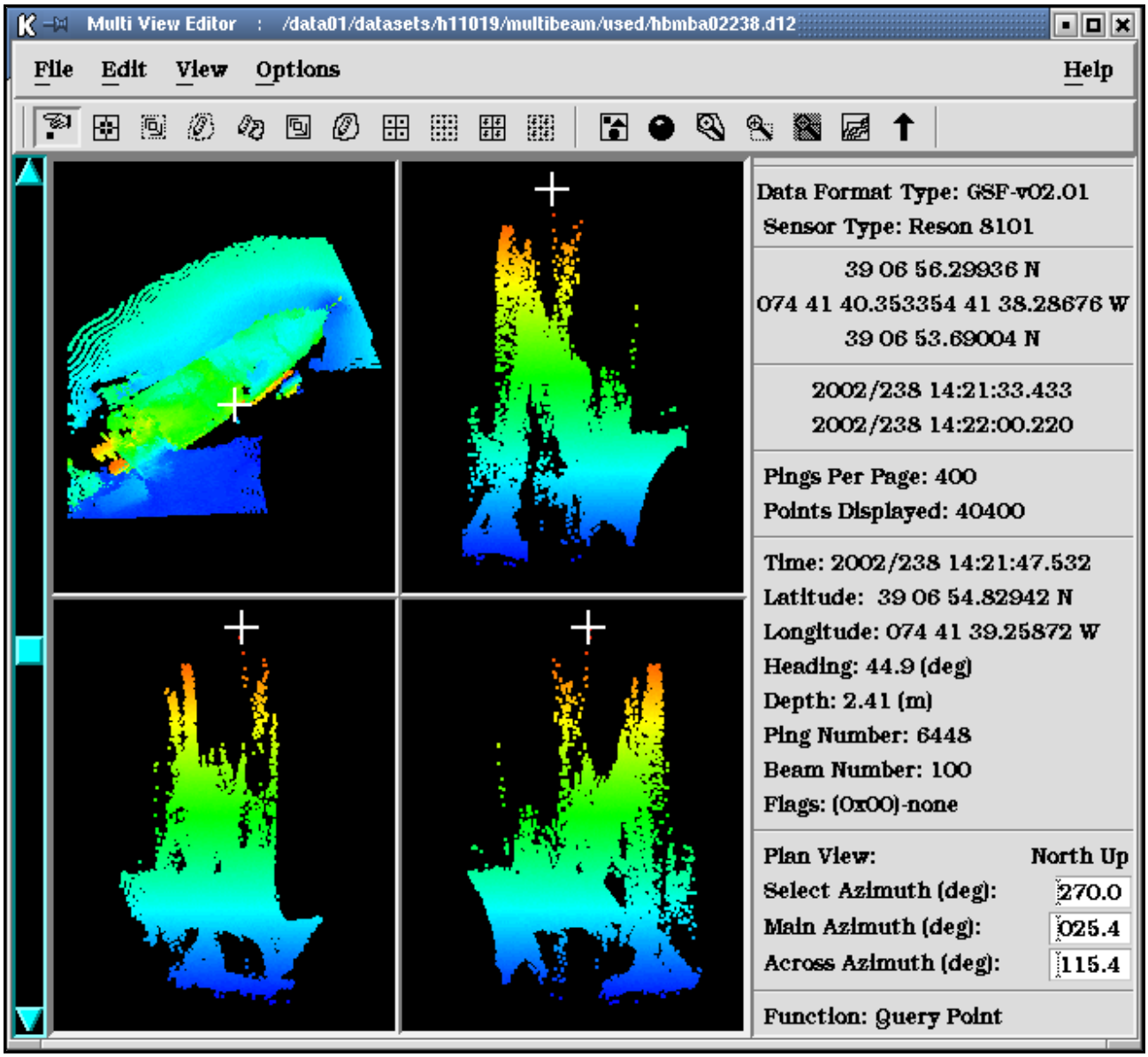


Figure App I-5. Multibeam File, Wreck 8 Feet

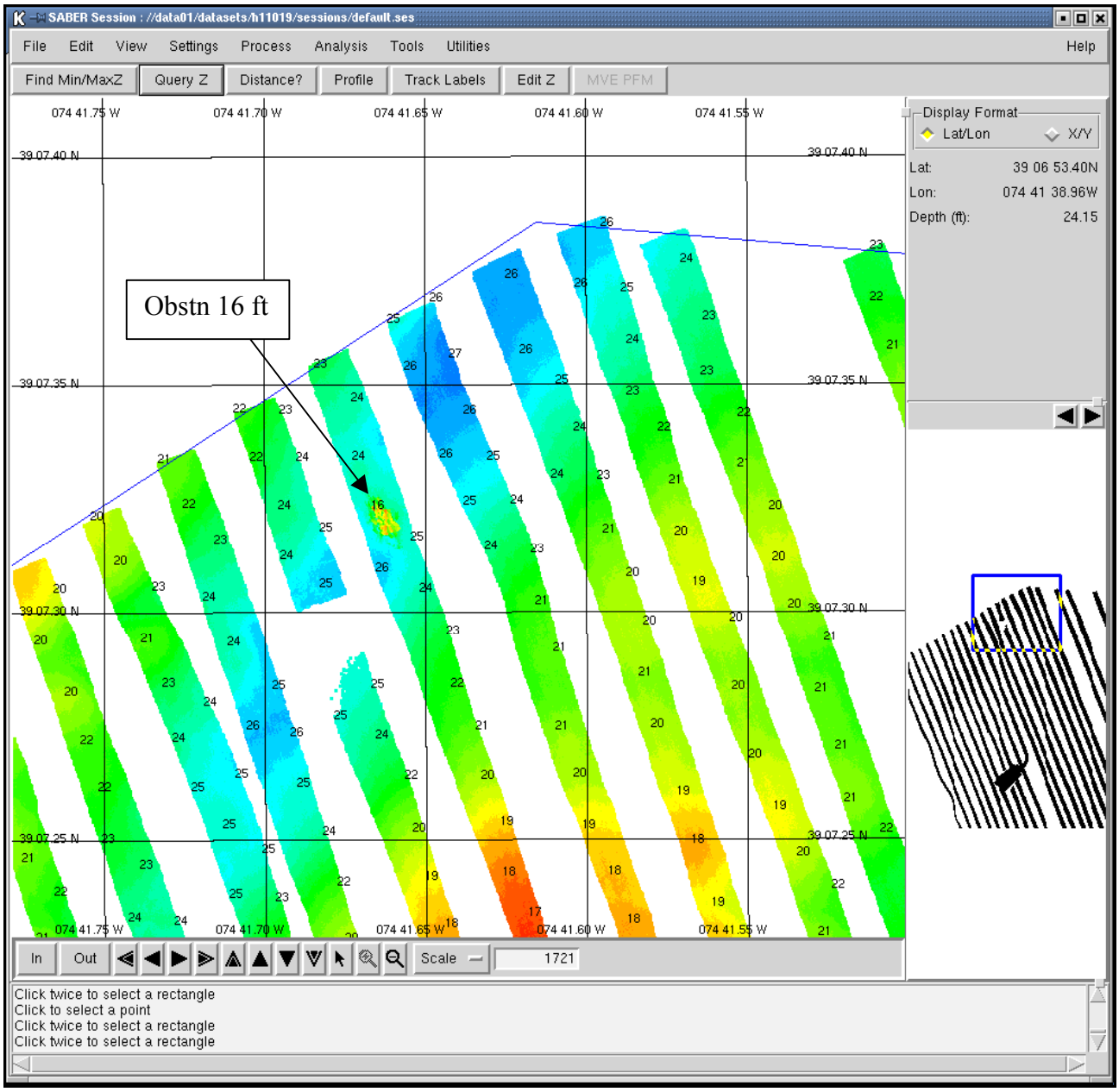


Figure App I-6. Gridded Depths and Selected Soundings, Obstruction 16 Feet

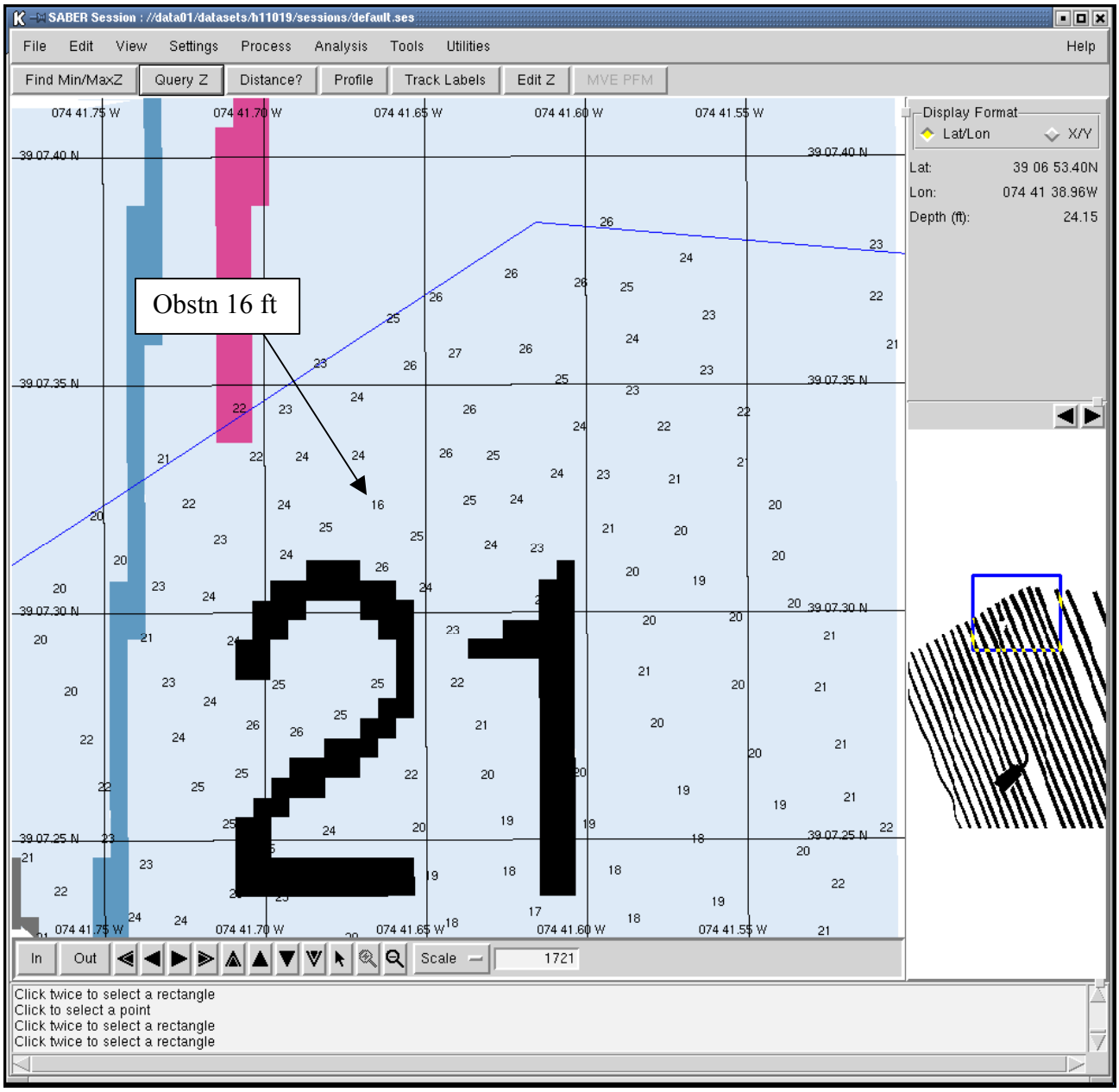


Figure App I-7. Chart 12318 and Selected Soundings, Obstruction 16 Feet

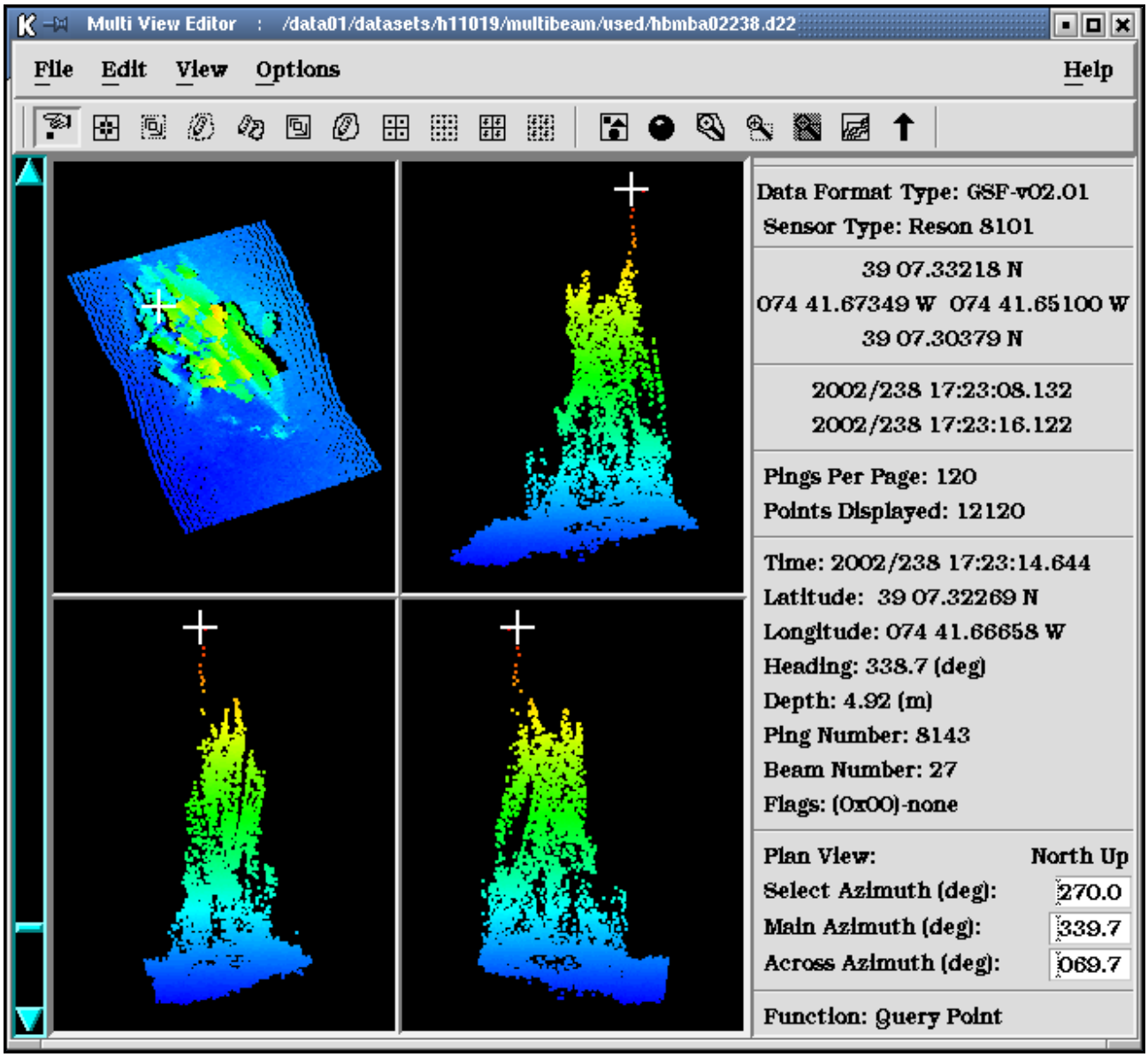
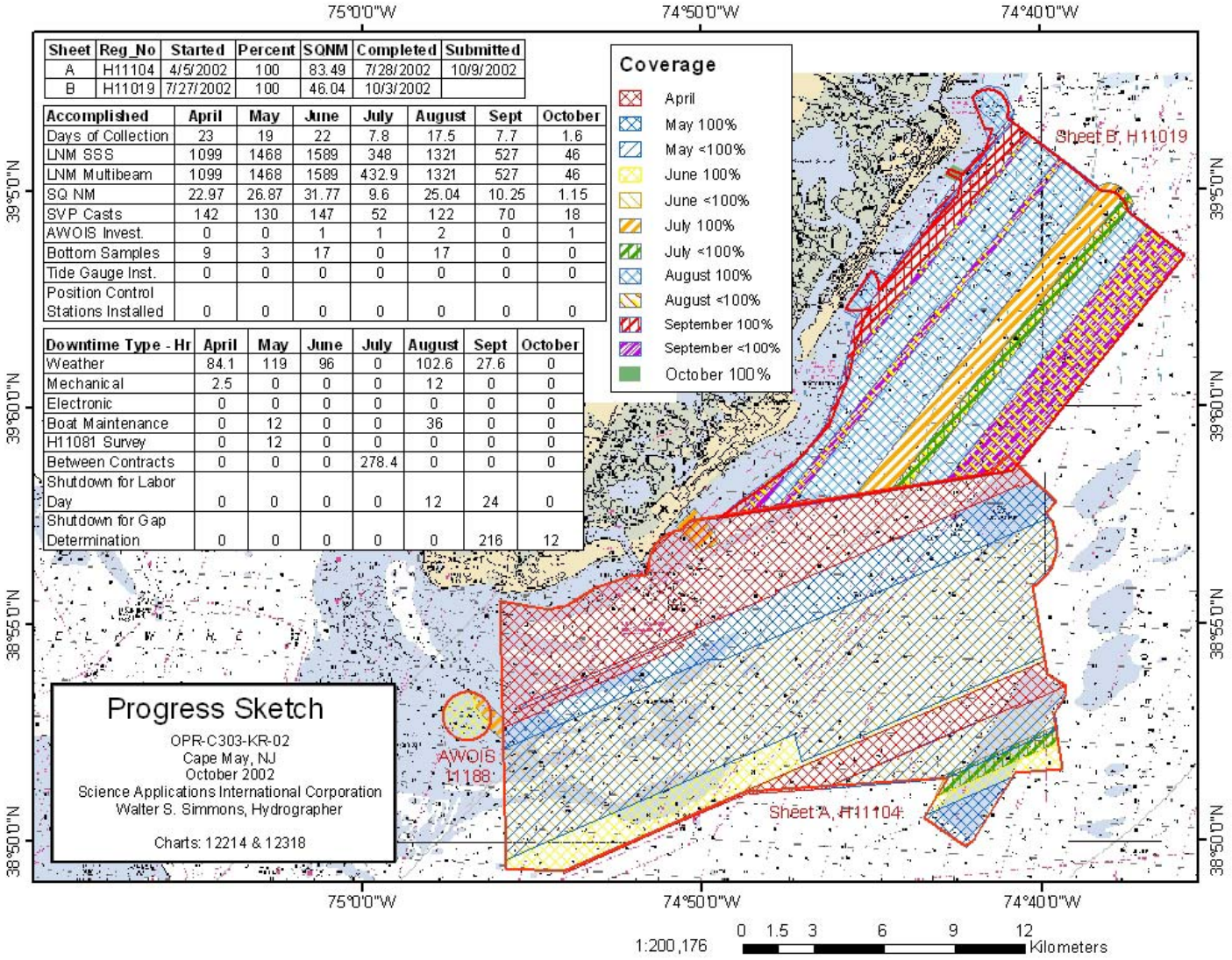


Figure App I-8. Multibeam File, Obstruction 16 Feet

APPENDIX II. LIST OF GEOGRAPHIC NAMES

The hydrographer has determined there are no corrections or new geographic names that occur within the limits of the survey area.

APPENDIX III. PROGRESS SKETCH



Sheet	Reg_No	Started	Percent	SQNM	Completed	Submitted
A	H11104	4/5/2002	100	83.49	7/28/2002	10/9/2002
B	H11019	7/27/2002	100	46.04	10/3/2002	

Accomplished	April	May	June	July	August	Sept	October
Days of Collection	23	19	22	7.8	17.5	7.7	1.6
LNM SSS	1099	1468	1589	348	1321	527	46
LNM Multibeam	1099	1468	1589	432.9	1321	527	46
SQ NM	22.97	26.87	31.77	9.6	25.04	10.25	1.15
SVP Casts	142	130	147	52	122	70	18
AWOIS Invest.	0	0	1	1	2	0	1
Bottom Samples	9	3	17	0	17	0	0
Tide Gauge Inst.	0	0	0	0	0	0	0
Position Control Stations Installed	0	0	0	0	0	0	0

Downtime Type - Hr	April	May	June	July	August	Sept	October
Weather	84.1	119	96	0	102.6	27.6	0
Mechanical	2.5	0	0	0	12	0	0
Electronic	0	0	0	0	0	0	0
Boat Maintenance	0	12	0	0	36	0	0
H11081 Survey	0	12	0	0	0	0	0
Between Contracts	0	0	0	278.4	0	0	0
Shutdown for Labor Day	0	0	0	0	12	24	0
Shutdown for Gap Determination	0	0	0	0	0	216	12

Figure App. III-1. Final Progress Sketch: Townsends Inlet to Two Mile Beach

APPENDIX IV. TIDES AND WATER LEVELS

The on-line times for acquisition of valid hydrographic data are presented in Table App. IV-1. Abstract of Times of Hydrography, H11019.

Project: OPR-C303-KR-02,
Registry No.: H11019
Contractor Name: Science Applications International Corp,
Date: 3 October 2002
Sheet Letter: B
Inclusive Dates: 27 July 2002 – 3 October 2002

Field work is complete.

Table App. IV-1. Abstract Times of Hydrography, H11019

Year	Julian Day	Begin Time	End Time
02	208	15:14:46	19:59:03
02	209	10:3901	20:04:24
02	210	09:55:53	20:04:36
02	211	10:05:27	19:20:39
02	212	09:54:33	19:57:20
02	213	11:42:20	21:57:58
02	215	09:55:05	20:02:22
02	216	09:59:08	20:18:26
02	217	09:43:01	19:29:02
02	218	09:51:35	11:55:05
02	220	11:40:10	22:15:16
02	221	09:42:23	20:23:38
02	222	09:47:36	20:30:12
02	223	09:42:17	19:10:10
02	224	09:40:37	20:33:10
02	226	09:39:13	18:01:26
02	230	09:59:52	19:59:26
02	231	12:37:42	23:15:10
02	232	09:50:25	18:38:27
02	234	11:55:26	20:27:11
02	235	11:57:53	19:46:19
02	237	09:42:45	19:46:15
02	238	09:42:39	20:16:51
02	239	10:04:04	20:02:26
02	247	09:44:11	20:18:45
02	248	09:56:14	21:33:24
02	249	09:42:49	17:43:21
02	250	09:55:39	20:57:37
02	251	09:35:31	20:55:37
02	252	10:03:32	20:25:17
02	253	10:34:51	21:03:16
02	254	10:21:55	15:29:43
02	255	18:35:19	23:18:55
02	275	11:21:44	22:41:38
02	276	12:26:19	18:56:49

APPENDIX V. SUPPLEMENTAL SURVEY RECORDS & CORRESPONDENCE

This appendix contains two email memos from Dr. Evans, SAIC, and Eric Sipos, NOAA COTR, and three email memos from Walter Simmons, SAIC, and Jeffrey Ferguson, NOAA COTR included below. ***Also included is a diagram documenting the correct position of AWOIS #11417, that was submitted by Bill Cathcart, Chief of Operations and Maintenance for the Cape May Municipal Utilities Authority, at the request of the Atlantic Hydrographic Branch during office processing.***

Simmons to Ferguson memo, 6-27-2002

From: Walter Simmons [wsimmons@mtg.saic.com]
Sent: Thursday, June 27, 2002 12:05 PM
To: 'Jeffrey Ferguson'; 'Walter Simmons'
Cc: 'Rod Evans (E-mail)'; 'Paul Donaldson (E-mail)'; 'Gary Davis (E-mail)'; 'Rebecca. T. Dekeyzer (E-mail)'
Subject: RE: Task Order No. 10

Jeff, AWOIS 11418 has been partially covered by Sheet A. However, the pipe does not appear to be where it is charted. We found two rows of pilings, and several mounds to the south of the charted pipe off shore end. We need additional work there to determine the least depths.

Your graphics show the AWOIS 11418 area, and the AWOIS listing calls for survey of these areas to the 4 meter depth inshore limit.

I will propose the additional work to obtain least depths, and to extend the investigation shoreward as part of this Task Order. Because this Order also includes item investigations on sheet A, and requires that the results be incorporated into the deliverables under Task Order 9 as a single package. Therefore, I suggest that the AWOIS 11418 investigation be included in sheet A for a more complete picture.

As always, thanks for your support.

Science Applications International Corporation
Walter Simmons. walter.s.simmons@saic.com
972-867-8277 cell 401-952-5671
4544 Fargo Drive, Plano, TX 75093-5422

-----Original Message-----
From: Jeffrey Ferguson [mailto:Jeffrey.Ferguson@noaa.gov]
Sent: Thursday, June 27, 2002 10:16 AM

To: Walter Simmons
Cc: Rod Evans (E-mail); Paul Donaldson (E-mail); Gary Davis (E-mail); Rebecca. T. Dekeyzer (E-mail)
Subject: Re: Task Order No. 10

That is correct. In an earlier draft, the project area covered AWOIS 11418. However, that area should be covered pretty well with data from Sheet A. Therefore, I had the area over that AWOIS removed, but we didn't update the lat/long vertices. Sorry about the confusion.

Be aware that Sheet B includes the requirement to investigate AWOIS 11418. If you feel it was adequately covered in Sheet A, go ahead and discuss in the Sheet A DR, then in Sheet B, mention that it was resolved on A. If additional work is required, go ahead and include it in your Sheet B proposal and discuss it fully in the Sheet B DR. And of course, make sure you have a proper junction and overlap between the sheets.

Make sense?

If not, let me know.
Jeff

Walter Simmons wrote:

In preparing estimates for the effort to complete Task Order No. 10, I see an apparent error in the listing of the survey area on page 2 of 13.

Points 2, 3, and 4 create an infinity sign to the south of the area shown in the graphics. It appears that they should be deleted, and the area should go from point 1 to point 5, then as listed.

I am proceeding with this assumption. If I am not correct, please let me know.

Science Applications International Corporation
Walter Simmons. walter.s.simmons@saic.com
401-847-4210 x4766 cell 401-952-5671

Sipos to Evans e-mail, 1-29-2001

From: Eric Sipos [mailto:Eric.Sipos@noaa.gov]
Sent: Monday, January 29, 2001 10:22 AM
To: Rod Evans
Cc: Jeffrey Ferguson; Brian Greenawalt
Subject: Re: Delaware task order

I recall the same thing being said about a leadline being sufficient. I have no objections about using a daily leadline check in lieu of a singlebeam echosounder. We will add a requirement for side scan mosaics when we issue the task order ...the requirement should have been included in the October 27, 2000 SOW. We will require a separate mosaic for each 100% coverage.

Thank you for your questions. Please do not hesitate to contact us if other questions arise.

Eric

Rod Evans wrote:

Eric,

I am in the process of refining and finalizing the Delaware task order proposal for delivery to you on 8 February 2001. I have only two questions so far that I would like guidance on.

1. In the June 2000 specification section 5.4.1 it states that for multibeam echo sounders a daily nadir comparison should be made with a single beam system. I recall in a meeting at NOAA late last year, that there was a comment made that a lead line would suffice. Is my memory correct?. Removal of the single beam echo sounder from the R/V OceanExplorer will reduce cost.

2. In the same specification section 8.4.1.1. (Side Scan Sonar Mosaic), states that a mosaic is required if specified in the SoW. I cannot see this requirement called out in the October 27, 2000. Am I correct to assume that only proof of sidescan sonar coverage is required as defined in 8.4.1?

Please advise me on these questions.

Thanks, RE.

Rod Evans Ph.D.,
Assistant Vice President,
Marine Survey Manager,
SAIC Marine Survey and Systems,
221 Third Street,
Newport RI 02840
USA.
Tel (401)848.4783.
http://www.saic.com

Evans to Sipos memo, 7-27-2001

SAIC Side Scan Coverage: Sheet B and D: Delaware Bay

To determine whether side scan coverage is adequate in shallow water areas where the fish altitude (above the bottom) is below the NOAA standard of 8% of the range scale in use, SAIC has performed some tests and evaluations in Delaware Bay.

During the RTK data experiment, a closely spaced grid of multibeam lines was run over a fish haven site that included numerous bottom features. Near the end of the day, four side scan lines were run to obtain imagery of the site with the side scan at 2 meter and 4 meter flying heights. One line at each altitude was run to look into the features from the east side, and one line at each altitude looked into the area from the west side (lines nominally north/south).

The features were clearly visible to the outer edge of the side scan image in all four passes. These side scan images were correlated to features in the high-resolution multibeam grid. Distances from the navigation track were measured to the most distant correlated features in ISS2000. Side scan range scale used for this test was 75 meters, the same as used on the main scheme survey lines In H11022 and H11023. The distances reached with the side scan at 2 meter and 4 meter altitude were measured to be 72 meters.

Based on this test, SAIC determined that it is possible to detect contacts, and cover the bottom to at least 72 meters cross track, even at fish altitude of 2 meters. Mosaics are being built using a 70-meter range cut-off for evaluation of coverage.

Areas with no coverage will be filled by running additional lines. Areas that have coverage will be evaluated to determine the quality of the imagery at the outer swath limits. In areas where the imagery at the outer swath limits is considered of too poor quality, additional lines will be run.

In areas of less than 6 feet water depth, we are evaluating the quality of the side scan sonar data that already exists, and judging if we believe it is possible to safely obtain better data where quality may be marginal.

In areas between 15 and 6 feet water depth, we are looking closely at the experience from the first 100% pass, and determining: (1) sonar data quality and (2) the feasibility of the survey vessel safely acquiring a second pass.

In areas of water depth greater than 15 feet, it is a more straightforward practice of planning to fill any data gaps or re-shoot any marginal quality data. Our methodology will be fully discussed in the Descriptive Report.

Fish in the water column do not in themselves create data gaps, because it is not likely that the same bottom area will be obscured in the data from adjacent survey lines. One of the purposes of 200% side scan bottom coverage is provide coverage in areas that may be obscured by fish schools in the water column.

The following examples are from the H11022 north 100% side scan mosaic made with a 70 meter range cut-off applied to the 75 meter range scale data.

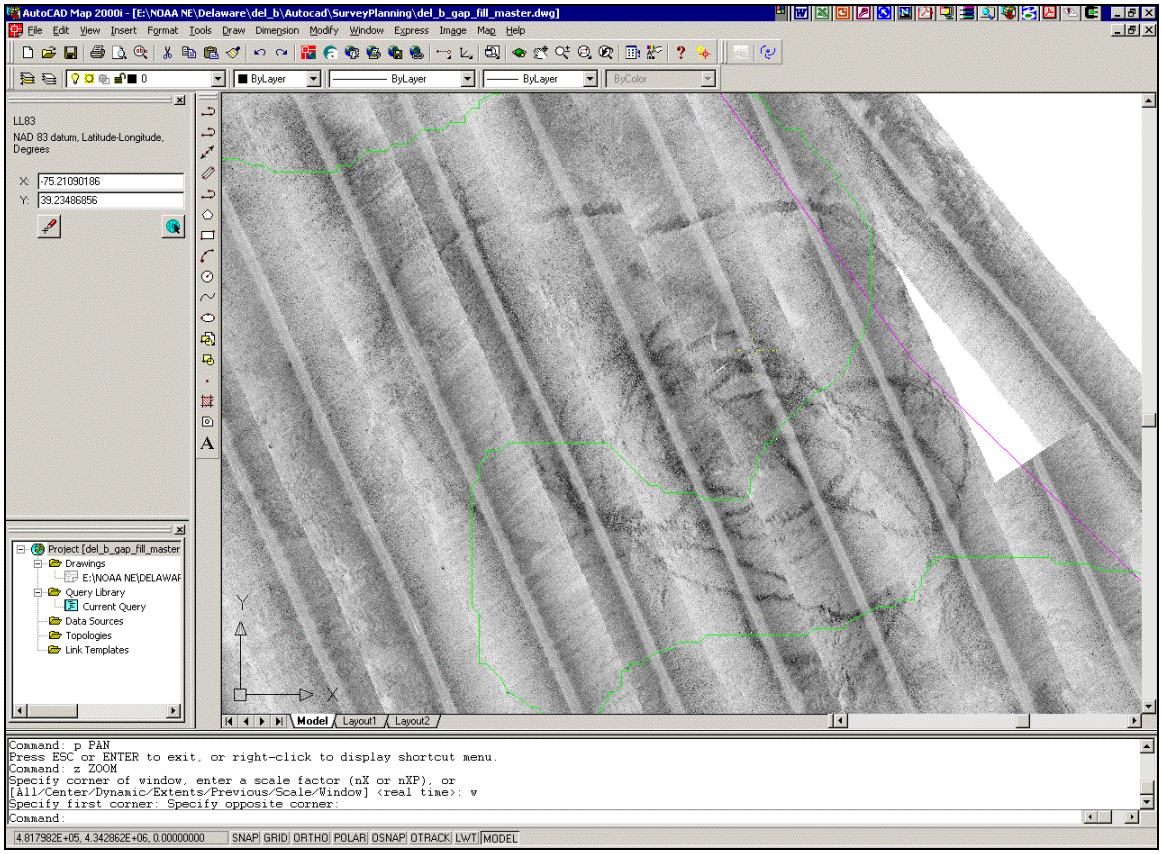


Figure App. V-1. Example 1, North 100% coverage @ 70m range, showing green 15ft contour

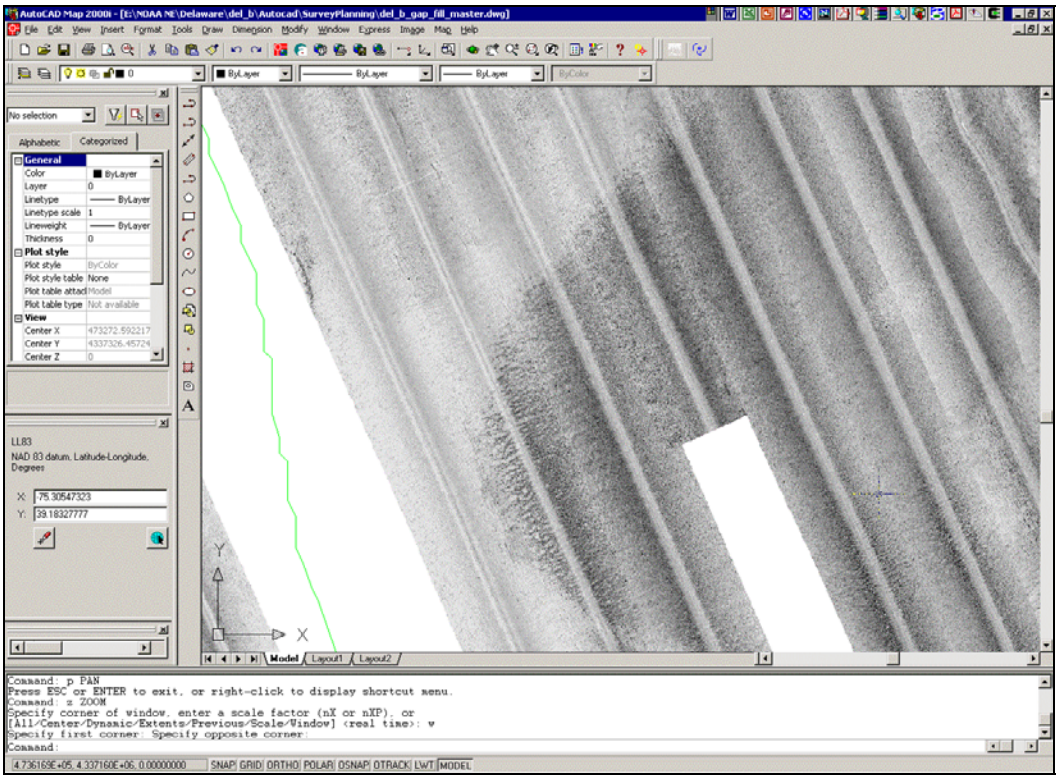


Figure App. V-2. Example 2, North 100% coverage @ 70m range, showing green 15ft contour

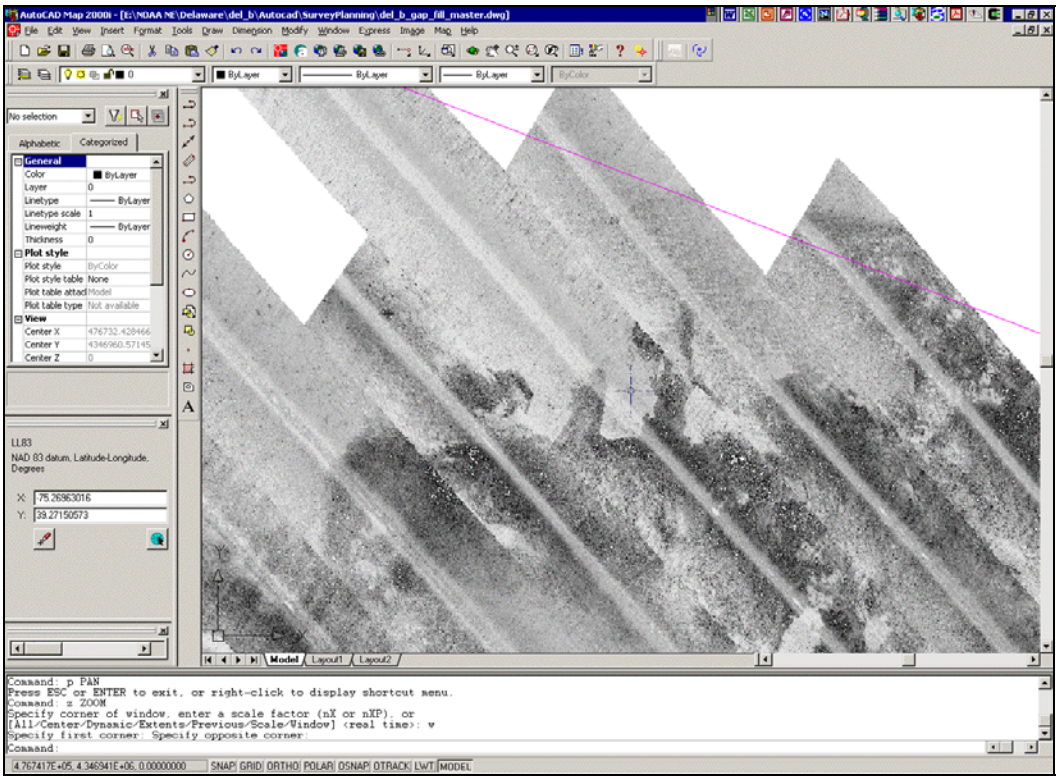
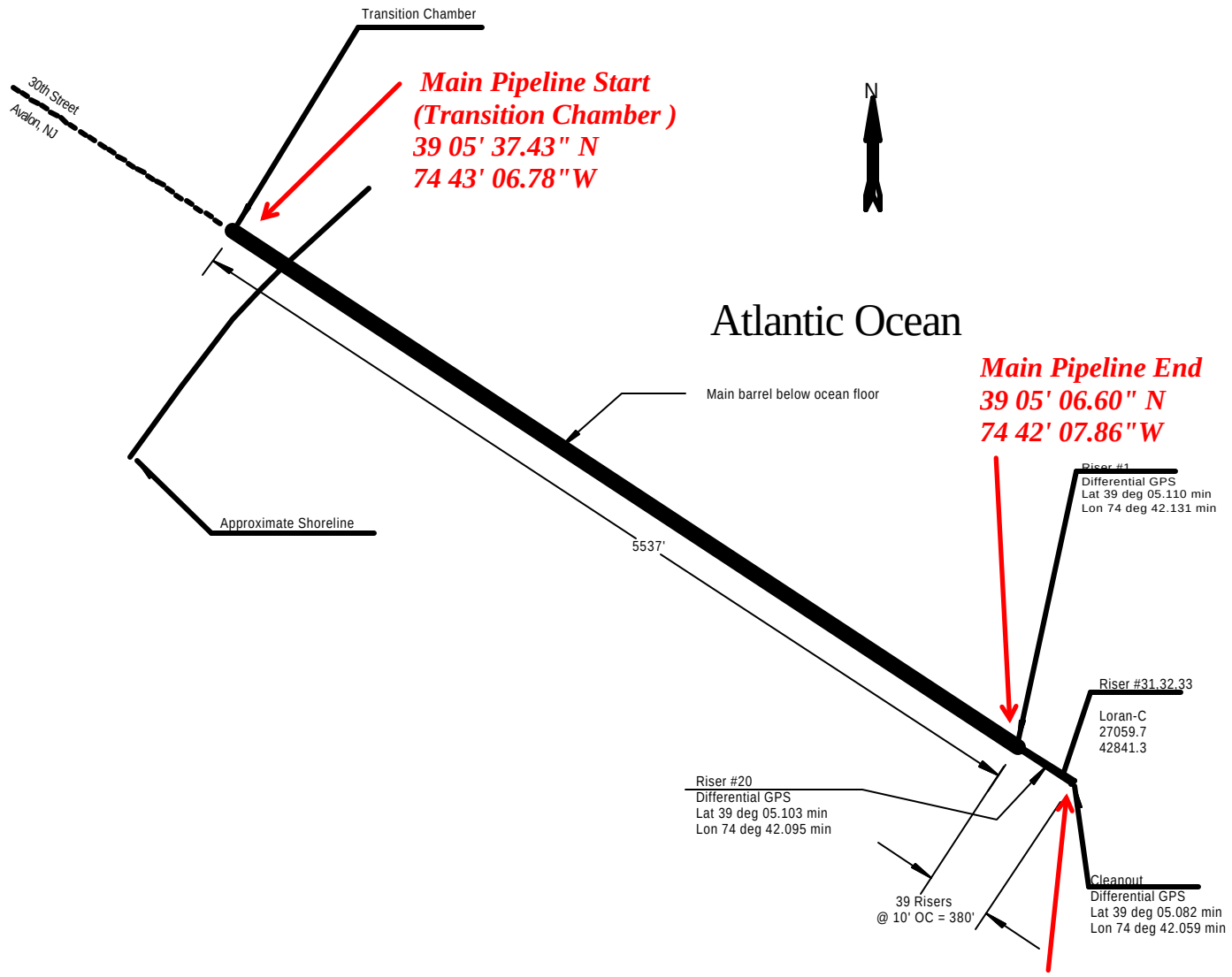


Figure App. V-3. Example 3, North 100% coverage @ 70m range, showing green 15ft contour

AWOIS #11417: Submerged Pipeline



Notes

1. Refer to contract record drawings for additional Information.

2. Differential GPS - best information available.

REVISION	DATE	DESCRIPTION	APP'D

REQUEST FOR PROPOSALS
PROFESSIONAL DIVING SERVICES
2002 OUTFALL INSPECTIONS

CAPE MAY COUNTY
MUNICIPAL UTILITIES AUTHORITY
ENGINEERING DEPARTMENT
P.O. BOX 610 CAPE MAY COURT HOUSE NEW JERSEY 08210

DESIGN: LTD	DRAWN: LTD	CONTRACT NO. : RFP
CHECKED: LTD	APPROVED: MCS	SCALE: 1"= 1000'
		DATE: AUG. 1, 2002

SEVEN MILE BEACH
OUTFALL LOCATION

DRAWING NO.
3 OF 5

G:\90_misc\outfall_insp_02\7mile_02.cs

NOAA FORM 61-29
(12-71)

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

LETTER TRANSMITTING DATA

REFERENCE NO.
N/CS33- -01

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY (Check)

☐ ORDINARY MAIL ☐ AIR MAIL
☐ REGISTERED MAIL ☒ EXPRESS
☐ GBL (Give number)_____

DATE FORWARDED
07/23/2004

NUMBER OF PACKAGES
1

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
NOAA / NATIONAL OCEAN SERVICE
STATION 6815, SSMC3
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910-3282

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

H11019

NEW JERSEY, ATLANTIC OCEAN, TOWNSENDS INLET TO TWO MILE BEACH

ONE TUBE CONTAINING THE FOLLOWING:

1 CONTRACT SMOOTH SHEET FOR SURVEY H11019
1 DESCRIPTIVE REPORT
1 EVALUATION REPORT
1 RECORD OF APPLICATION TO CHART FORM (NOAA FORM #75-96) FOR SURVEY H11019
1 H-DRAWING ON MYLAR FOR NOS CHART 12316
1 H-DRAWING ON MYLAR FOR NOS CHART 12318

FROM: (Signature)

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

NOAA \ NATIONAL OCEAN SERVICE
ATLANTIC HYDROGRAPHIC BRANCH N/CS33
439 WEST YORK STREET
NORFOLK, VA. 23510-1114

NOAA FORM 61-29 SUPERCEDES FORM C AND GS 413 WHICH MAY BE USED.

U.S. GOVERNMENT PRINTING OFFICE: 1988 - 554-006-61309

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H11019 (2002)

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

B. DATA ACQUISITION AND PROCESSING

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

MicroStation/J, version 7.01
MicroStation I/RAS B, version 7.01
MapInfo, version 6.5
Caris HIPS/SIPS, version 5.3

The Preliminary Smooth Sheet was plotted by the contractor (SAIC). Atlantic Hydrographic Branch (AHB) was required to modify the contractors submitted PSS to make it compatible with inhouse software. The smooth sheet reflects the data as portrayed by the contractor and should be used ONLY in conjunction with this report.

C. VERTICAL AND HORIZONTAL CONTROL

SAIC's verified water level data was downloaded, applied, and submitted before the April 21, 2003 Tidal Epoch update was implemented by NOAA, NOS, CO-OPS. The resulting difference between SAIC and NOAA tide levels is well within the allowable error budget.

D. RESULTS AND RECOMMENDATIONS

D1. CHART COMPARISON

12300	**42nd Edition**	**February, 2001**	**1:400,000 scale**
12214	**44th Edition**	**February, 2003**	**1:80,000 scale**
12318	**41st Edition**	**December, 2002**	**1:80,000 scale**
12316	**30th Edition**	**November, 2003**	**1:40,000 scale**

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D.1. of the Descriptive Report. Attention is directed to the following items:

AWOIS Items, Wrecks and Obstructions

1. Numerous insignificant, low-profile obstructions were found by the hydrographer throughout the survey area and are shown on the contractors smooth sheet. They do not present a danger to surface navigation and should not be charted. These items could potentially affect bottom-dragging operations. It is recommended that present survey soundings be charted. The features are 11, 13, 17, 22, 24, 25, 30, 38, 43, 44, 45, 47, 48, 50, and 51.

2. AWOIS #11417 is a charted buried sewer pipeline originating at Seven-Mile Beach, Avalon, New Jersey and operated by the Cape May Municipal Utilities Authority. According to the chart, its onshore end originates in the vicinity of Latitude 39°05'35.36"N, Longitude 74°43'05.4"W, and its offshore end at Latitude 39°05'14.53"N, Longitude 74°42'11.22"W. The present survey found that the charted pipeline falls 250m southwest of the surveyed risers associated with the end of the sewer. The hydrographer recommends removing the buried pipeline from the chart and adding two 32 ft obstructions (Features 33 and 36) to represent the risers surveyed at the pipeline's end.

Cape May County Municipal Utilities Authority, the responsible authority listed in the AWOIS database as having installed the pipeline in 1987, was called at (609) 465-9026 to elaborate on the discrepancy between the sewer end and its associated risers. On January 9, 2004 at 9:45am, Bill Cathcart, Chief of Operations and Maintenance, verbally confirmed that the buried sewer pipeline has not been moved since its installation in 1987 and that it still exists with on-land origin at Latitude 39°05'37.43"N, Longitude 74°43'06.78"W and seaward terminus at Latitude 39°05'06.60"N, Longitude 74°42'07.86"W (5537' long). A single sewer outfall riser is connected to the end of the main pipeline and extends from the end of the pipeline to Latitude 39°05'04.92"N, Longitude 74°42'03.54"W. A diagram detailing the position of the pipeline and its risers as of August, 2002 (using Differential GPS) was also submitted and is appended to the Descriptive Report in Appendix V, Supplemental Survey Records & Correspondence, page 39.

The current survey verified these statements and found the least depth on the sewer riser to be 32 ft(Feature 36) at Latitude 39°05'04.91"N, Longitude 74°42'03.58"W.

It is recommended that Features 33 and 36 be charted together as 32 Obstns with danger curve at Latitude 39°05'04.91"N, Longitude 74°42'03.58"W. It is further recommended that the

charted pipeline be moved to its correct location with inland origin at Latitude 39°05'37.43"N, Longitude 74°43'06.78"W and seaward terminus at Latitude 39°05'06.60"N, Longitude 74°42'07.86"W.

Uncharted Wrecks and Obstructions

3. Features 9,10, and 16, a cluster of uncharted 44 ft obstructions, in the vicinity of Latitude 38 59'37"N, Longitude 74 43'45"W, are on the contractors smooth sheet but were not discussed by the hydrographer in the Descriptive Report. Of the group, Feature #9 is the shoalest, with a least depth of 13.42m in Latitude 38 59'35.88"N, Longitude 74 43'44"W. The entire group is insignificant and does not pose a danger to navigation. It is therefore recommended that they do not be charted. It is further recommended that the area be updated with present survey soundings. Relevant only to charts 12318 and 12214.

4. An uncharted 36 ft sounding on an obstruction in Latitude 39°00'51.15"N, 74°39'07.1"W was found during present survey operations. During office processing this obstruction was deemed insignificant. It is recommended that the area be updated with present survey soundings.

5. An uncharted 54 ft sounding on an obstruction in Latitude 39°02'52.81"N, 74°36'40.38"W was found during present survey operations. During office processing this obstruction was deemed insignificant. It is recommended that the area be updated with present survey soundings.

D2. ADDITIONAL RESULTS

COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not performed during office processing due to full bottom coverage with this survey.

DANGER TO NAVIGATION

One Danger to Navigation Report (DtoN) was submitted by the hydrographer and then processed by the Atlantic Hydrographic Branch for survey H11019 on September 11, 2002. A copy of the DtoN Report is appended to the DR.

JUNCTIONS

A standard junction exists between the southern edge of present survey H11019 and survey H11104 (2002). Junction comparison indicates excellent agreement with zero to one foot variance within the common junction area. There are no junction surveys to the north, west, or east.

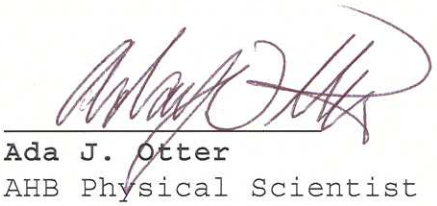
ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted hydrography in the common area. This is an adequate hydrographic side scan sonar and multibeam survey. No additional work is recommended.

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. The following NOS Charts were used for compilation of the present survey:

12318 (41st Edition, December 2002)
12316 (30th Edition, November 2003)



Ada J. Otter
AHB Physical Scientist
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H11019

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Date: 23 July 2004

Ada J. Otter
Physical Scientist
Atlantic Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Date: 23-Jul-2004

P. Tod Schattgen
LCDR, NOAA
Chief, Atlantic Hydrographic Branch

AWOIS ✓ & SURF ✓ by MBH on 7/28/04.

NOAA FORM 75-96
(10-83)

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

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H11019

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
12316	2/24/04	Ada Otter	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12318	3/8/04	Ada Otter	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12316	10/21/04	CHRIS CROGNALE	CC Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12318	10/21/04	CHRIS CROGNALE	CC Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12300	10/21/04	CHRIS CROGNALE	CC Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
12214	10/21/04	CHRIS CROGNALE	CC Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED