UNITED STATES - EAST COAST

NEW JERSEY AND DELAWARE

DELAWARE RIVER

SMYRNA RIVER TO WILMINGTON

Mercator Projection
Scale 1:40,000 at Lat. 39°33'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

Additional information can be obtained at nauticalcharts.noaa.gov.

CHRISTINA RIVER CHANNEL DEPTHS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO OCT 2015

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW): LEFT OUTSIDE QUARTER	MIDDLE HALF OF CHANNEL	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS: WIDTH (FEET)	LENGTH (NAUT MILES)	DEPTH MLLW (FEET)
DELAWARE RIVER TO THE UPPER END OF THE TURNING BASIN	34.8	34.7	36.8	10-15	500-340	0.70	38
THENCE TO LOBDELL CANAL	34.4	34.3	34.2	10-15	400	0.33	35
TURNING BASIN		A35.9		10-15	320	0.34	38
LOBDELL CANAL TO BRANDYWINE CR.		5.2		8-15	250	0.68	21
BRANDYWINE CR. TO MARKET ST.		3.8		8-15	200	1.24	21
MARKET ST. TO 39°43'38"N, 75°33'40"W		1.3		8-15	200	0.78	21
THENCE TO END OF CHANNEL		7.2		8-15	200	0.12	10

A. REPORTED DEPTH IS FOR FULL WIDTH OF BASIN.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

NOTE B
Depths outside of the USACE authorized channels refer to Christina River Datum.

SOURCE DIAGRAM
The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

SOURCE			
A	1990-2009	NOS Surveys	full bottom coverage
B2	1970-1989	NOS Surveys	partial bottom coverage
B5	Pre - 1900	NOS Surveys	partial bottom coverage

PRIVATE CHANNELS
Bulkhead Shoal Channel and the turning basin are projects of the Star Enterprise Co. Aids to navigation are private.

TIDAL INFORMATION

PLACE: NAME	(LAT/LONG)	Height referred to datum of soundings (MLLW): Mean Higher High Water	Mean High Water	Mean Low Water
		feet	feet	feet
Reedy Point	(39°34'N/75°34'W)	5.8	5.5	0.2
New Castle	(39°39'N/75°34'W)	5.8	5.4	0.2
Wilmington	(39°43'N/75°31'W)	5.9	5.5	0.2

Dashes (- - -) located in datum columns indicate unavailable datum values for a tide station. Real-time water levels, tide predictions, and tidal current predictions are available on the Internet from http://tidesandcurrents.noaa.gov.
(Apr 2012)

ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)
Aids to Navigation (lights are white unless otherwise indicated):
AERO aeronautical; Al alternating; B black; Bn beacon; C can; DIA diaphone; F fixed; Fl flashing; G green; IQ interrupted quick; Iso isophase; LT HO lighthouse; M nautical mile; m minutes; MICRO TR microwave tower; Mkr marker; Mo morse code; N nun; OBSC obscured; Oc occulting; Or orange; Q quick; R red; Ra Ref radar reflector; R Bn radiobeacon; R TR radio tower; Rot rotating; s seconds; SEC sector; St M statute miles; VQ very quick; W white; WHIS whistle; Y yellow
Bottom characteristics: Blds boulders; bk broken; Cy clay; Co coral; G gravel; Grs grass; gy gray; h hard; M mud; Oys oysters; Rk rock; S sand; so soft; Sh shells; sy sticky
Miscellaneous: AUTH authorized; ED existence doubtful; Obstn obstruction; PA position approximate; PD position doubtful; Rep reported; Subm submerged
(21) Wreck, rock, obstruction, or shoal swept clear to the depth indicated.
(2) Rocks that cover and uncover, with heights in feet above datum of soundings.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

HEIGHTS
Heights in feet above Mean High Water.

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 3 for important supplemental information.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.
During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION
SUBMARINE PIPELINES AND CABLES
Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:
Pipeline Area / Cable Area
Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.
Covered wells may be marked by lighted or unlighted buoys.

CAUTION
Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

RADAR REFLECTORS
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION
Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.
Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
(Accurate location) (Approximate location)

LOCAL MAGNETIC DISTURBANCE
Differences of as much as 2° to 5° from the normal variation have been observed along the channel from Artificial Island, New Jersey to Marcus Hook, Pennsylvania.

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 3. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 5th Coast Guard District in Portsmouth, Virginia or at the Office of the District Engineer, Corps of Engineers in Philadelphia, Pennsylvania.
Refer to charted regulation section numbers.

SALEM RIVER CHANNEL

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - SURVEYS TO AUG 2014

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW): LEFT OUTSIDE QUARTER	MIDDLE HALF OF CHANNEL	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS: WIDTH (FEET)	LENGTH (NAUTICAL MILES)	DEPTH MLLW (FEET)
ELSINBORO POINT TO OAKWOOD BEACH	13.4	12.4	11.9	8-14	150	1.48	16
OAKWOOD BEACH TO SINNICKSON LANDING	13.6	15.3	15.8	8-14	150	1.56	16
SINNICKSON LANDING TO END OF PROJECT	18.2	17.0	17.7	8-14	150	0.71	16
	TURNING BASIN PROJECT WIDTH 80%	100%					
TURNING BASIN	12.0	9.7		5-14	320	0.2	16

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

CAUTION
BASCULE BRIDGE CLEARANCES
For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.403" northward and 1.269" eastward to agree with this chart.

NOAA WEATHER RADIO BROADCASTS
The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Philadelphia, PA	KIH-28	162.475 MHz
Lewes, DE	WXJ-94	162.550 MHz
Sudlersville, MD	WXK-97	162.500 MHz

DELAWARE RIVER CHANNEL DEPTHS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - REPORT OF AUG 2014

NAME OF CHANNEL	CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW): LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	PROJECT DIMENSIONS: WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLLW (FEET)
LISTON RANGE (ABOVE SHIP JOHN LIGHT)	41.5	42.6	42.9	41.6	4-14	1000-800	12.42	40
BAKER RANGE	38.1	44.5	43.9	39.5	3-14	800	1.65	40
REEDY ISLAND RANGE	38.0	40.9	41.8	41.2	2-14	800	4.28	40
NEW CASTLE RANGE	A40.0	40.7	40.7	39.0	6-14	800	4.34	40
BULKHEAD BAR RANGE	20.4	45.2	45.2	38.8	5-14	1600	0.56	40
DEEPWATER POINT RANGE	39.7	40.5	40.1	36.9	6-14	800	3.76	40
CHERRY ISLAND RANGE	42.6	44.0	43.8	43.1	6-14	800	4.33	40
BELLEVUE RANGE	40.3	42.2	43.1	41.9	9-13	800	3.05	40

A. 38 FOOT OBSTRUCTION LOCATED AT 39°33'15.5"N, 75°32'39.0"W.
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

APPOQUINIMINK RIVER
The controlling depth at mean lower low water from the entrance to Odessa was 4 feet June 1945-Oct. 1987. Local knowledge is recommended for navigation of this river.

SMYRNA RIVER
The controlling centerline depth at mean lower low water from the entrance bar to Flemings Landing was reported to be 8 feet in May 1971; thence 3 feet to Smyrna Landing in June 1964.

OYSTER GROUNDS
Caution: Numerous stakes and obstructions exist within these areas.

WARNING
The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

SCALE 1:40,000

CAUTION
This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner. Chart updates corrected from Notice to Mariners published after the dates shown in the lower left hand corner are available at nauticalcharts.noaa.gov.

NOAA encourages users to submit inquiries, discrepancies or comments about this chart at http://www.nauticalcharts.noaa.gov/staff/contact.htm.

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

46th Ed., May 2012. Last Correction: 11/4/2016. Cleared through:
LNM: 4816 (11/29/2016), NM: 5016 (12/10/2016)

SOUNDINGS IN FEET

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

This chart was distributed as a PDF (Portable Document Format). Printing PDFs may alter the chart scale, color, or legibility that may impact suitability for navigation. Printed charts provided by NOAA certified Print on Demand (POD) providers fulfill a vessel's requirement to carry a navigational chart "published by the National Ocean Service" in accordance with federal regulations, including but not limited to 33 C.F.R. 164.33(a), 33 C.F.R. 164.72(b), and 46 C.F.R. 28.225(a). POD charts meet stringent print standards and can be recognized by an official certification of authenticity printed on the chart. A list of POD providers can be found at: nauticalcharts.noaa.gov/pod