

Date: 1900 EDT August 1, 2007
To: NOAA SSC Ed Levine



FROM: NOAA/NOS Office of Response and Restoration
Emergency Response Division
Seattle, WA 98115

SUBJECT: Sunken F/V Rough Seas, Little Egg Inlet, NJ

FOR ADDITIONAL INFORMATION, PLEASE CONTACT CJ Beegle-Krause
MODELING AND SIMULATION STUDIES, NOAA, SEATTLE, WA 98115.
PHONE (206) 526-4911.

We have looked at the issue of a potential spill from a sunken vessel. These notes are based on the following information:

The 59 foot F/V Rough Seas was reported sunken and breaking up approx 1600 EDT yesterday at 39 deg 29.1'N, 074 deg 17.5'W. The vessel was carrying est. 1500 gallons diesel, and sheen was visible on an overflight in the area this morning, but no position information was available.

If any of this initial information is incorrect, please let us know ASAP as it would affect any trajectory implications.

1) 48-hour Wind Forecast

Today through Thursday: winds 5-10 knots from the South

Friday: winds 10 knots from the South

2) Tides

There is no tidal current station available for the area. However, stations are available to the north at Barnegat Inlet and to the south at Absecon Inlet. The tidal currents are offset approximately 2 hours between these two stations, so we expect the tidal currents to be phased in between these two stations. Tidal heights for Mill Creek, one nm above the entrance to Little Egg Harbor are also included.

3) Trajectory

Two cases are discussed: if the vessel has already released all the fuel, or if the vessel leaks in the upcoming days

Case 1: If the vessel has already released all the fuel

At the time of the accident, winds were reported to be very light, from 2-3 knots. Under such light conditions, diesel is much more persistent than at 10 knots (see ADIOS oil budget tables below for 7 knot and 10 knots winds). The winds overnight shifted from 2-3 knots from the NE, to 6-10 knots from the NW, to 5-10 knots from the south.

Depending on the exact timing of the release, diesel could contact shorelines as far as 3 nm from the grounding site.

Case 2: If the vessel leaks during the upcoming days

The wind forecast is for increasing wind from 5-10 knots from the South today to 10 knots from the South on Friday. Winds from the south would move oil northward, but the exact area of shoreline contact depends on the phase of the tide. As the winds increase, the evaporation and dispersal of the fuel will increase significantly (see ADIOS oil budget tables below for 7 knot and 10 knots winds).

4) Weathering and Fate

Diesel

Light refined products, such as diesel (or Fuel Oil No 2), typically have very high evaporation rates and do not tend to create persistent slicks. However, the terminology for refined products is not standardized, and, sometimes, heavier intermediate fuel oils are referred to as 'marine diesel'. These heavier products are much less volatile than normal Fuel Oil #2 and can form a more persistent slick.

When spilled, the diesel spreads quickly into thin films, often forming patches of rainbow and silver sheens. If the sheens reach the shoreline in a few hours, a slight staining, or greasy film-like bathtub ring is common. These oils usually do not form a stable emulsion and, as a result, do not form a heavy or sticky residual to clean up.

Note that lighter refined products do have a relatively high concentration of light aromatic compounds and tend to be more soluble and more toxic than heavier oils. These oils do not generally present an involved cleanup problem. However, they can result in an initial toxic shock to biota and can persist as a biological threat in low energy marine environments.

Oil Name = DIESEL FUEL OIL (SOUTHERN USA 1997)

API = 37.6

Pour Point = 7 deg F

Wind Speed = constant at 7 knots

Wave Height = computed from winds

Water Temperature = 75 deg F

Time of Initial Release = July 31, 1600 hours

Total Amount of Oil Released = 1,500 bbl

Hours Into Spill	Released bbl		Evaporated percent		Dispersed percent		Remaining percent
1	1,500	-	2	-	0	-	98
2	1,500		4		0		96
4	1,500	-	8	-	0	-	91
6	1,500		13		1		85
8	1,500	-	19	-	2	-	79
10	1,500		24		4		72
12	1,500	-	29	-	6	-	65
14	1,500		32		9		59
16	1,500	-	35	-	11	-	54
18	1,500		37		13		50
20	1,500	-	39	-	15	-	46
22	1,500		40		17		42
24	1,500	-	42	-	19	-	39
26	1,500		43		21		36
28	1,500	-	44	-	23	-	34
30	1,500		45		24		31
32	1,500	-	45	-	26	-	29
34	1,500		46		27		27
36	1,500	-	47	-	29	-	25
38	1,500		47		30		23
40	1,500	-	48	-	31	-	21
42	1,500		48		32		20
44	1,500	-	49	-	33	-	18
46	1,500		49		34		17
48	1,500	-	49	-	35	-	16

50	1,500		50		36		14
52	1,500	-	50	-	37	-	13
54	1,500		50		37		12
56	1,500	-	50	-	38	-	12
58	1,500		50		39		11
60	1,500	-	51	-	39	-	10

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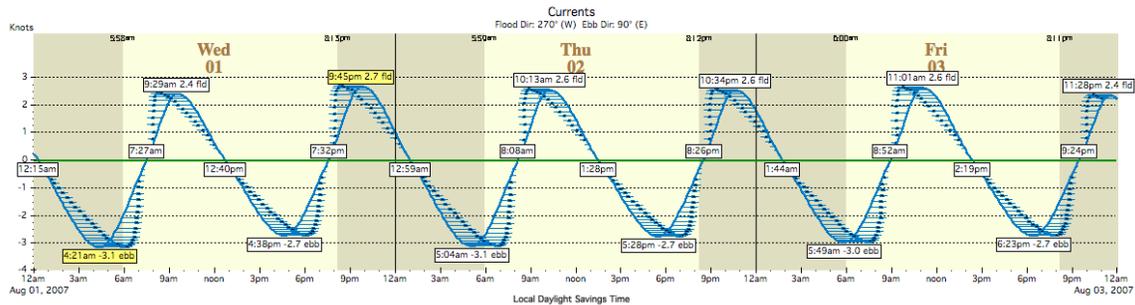
Water Temperature = 75 deg F

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1	1,500	-	0	98
2	1,500	5	1	95
4	1,500	10	2	88
6	1,500	16	7	77
8	1,500	22	13	65
10	1,500	27	22	52
12	1,500	30	30	40
14	1,500	32	38	30
16	1,500	34	44	22
18	1,500	35	49	17
20	1,500	36	52	12
22	1,500	36	55	9

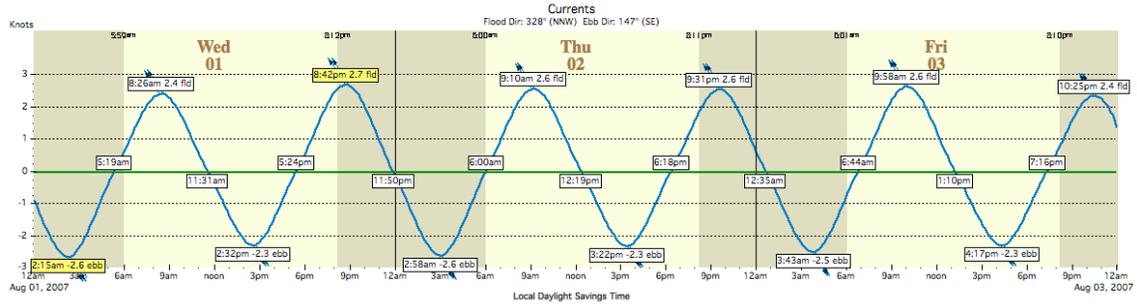
Barnegat Inlet Shio 2.0.3
 Tidal currents at Barnegat Inlet, NEW JERSEY COAST
 Station No. 4046 Meter Depth: n/a Latitude: 39° 46.00' N Longitude: 74° 7.00' W
 Based on DELAWARE BAY ENTRANCE
 From Wed Aug 01, 2007 to Fri Aug 03, 2007 (3 days) Local Daylight Savings Time



Absecon Inlet

Shio 2.0.3

Tidal currents at Absecon Inlet, NEW JERSEY COAST
 Station No. 4056 Meter Depth: 9 feet Latitude: 39° 22.59' N Longitude: 74° 24.87' W
 Based on DELAWARE BAY ENTRANCE
 From Wed Aug 01, 2007 to Fri Aug 03, 2007 (3 days) Local Daylight Savings Time



Mill Creek, 1 n.mi. above entrance

Shio 2.0.3

Tidal heights at Mill Creek, 1 n.mi. above entrance, Little Egg Harbor, Outer Coast, NEW JERSEY
 Station No. 1489 Latitude: 39° 39.90' N Longitude: 74° 13.90' W
 Based on SANDY HOOK
 From Wed Aug 01, 2007 to Fri Aug 03, 2007 (3 days) Local Daylight Savings Time

