



Hurricane Harvey Recovery & Hurricane Irma

Event Report (Update #20)

REPORT TIME & DATE:	4:00PM EDT Tuesday, September 5, 2017
INCIDENT START DATE:	Friday, August 25, 2017
PRIMARY LOCATION(S):	Harvey: Gulf Coast (Texas and Louisiana) // Irma: Leeward Islands
REPORT DISTRIBUTION:	Public

EXECUTIVE SUMMARY

As of Tuesday, September 5 portions of Southeast Texas remain under a Flood Warning as a result of Hurricane Harvey. According to the National Weather Service, the Neches River and Buffalo Bayou will slowly receded Tuesday. River flooding also continues in Beaumont and Northwest Orange County.

Hurricane Irma is approximately 180 miles E of Antigua, moving west at 14 MPH, with maximum sustained winds of 185 MPH (category 5). Irma is expected to move over the Leeward Islands late Tuesday or early Wednesday.

Harvey Oil and Natural Gas Sector Summary (as of 2:30 PM EDT)

- Five refineries are in the process of restarting after being shut down and one refinery has begun operations. Six additional refineries in the Gulf Coast are operating at reduced rate.
- Colonial Pipeline restarted Line 2 (distillate) between Houston and Lake Charles on September 4. The same section of Line 1 (gasoline) is on track to restart on September 5 and will begin shipping gasoline from existing stocks in the Houston area.
- Several ExxonMobil Product Pipelines are restarting, including: Aldine to Houston Airport (IAH) are expected to restart soon

Harvey Electricity Sector Summary (as of 2:30 PM EDT)

- As of 2:30 PM EDT, September 5, the State of Texas has 55,996 customer outages (<1% of total state customers) according to EAGLE-I and additional utilities not captured in EAGLE-I.
 - AEP Texas has 34,238 customer outages, a 2.9% increase from last report.
 - Entergy Texas has 14,409 customer outages, a 15% decrease from last report.
 - CenterPoint Energy has 4,746 customer outages, a 14.28% increase from last report.
- The majority of AEP Texas restoration crews are now working in the Aransas Pass, Rockport, Victoria, and Port Lavaca/Refugio areas. Most communities have Estimated Times of Restoration (ETRs) of 11 PM EDT Friday, September 8.
- Entergy Texas will undergo a planned six hour outage for approximately 2,000 customers served by the Mayhaw Vidor Substation in the Viway area on Wednesday, Sept. 6. Beginning at 11:00 AM EDT, they will be adding a transformer and related infrastructure that will bring other customers online as much as five days earlier than anticipated.
- CenterPoint Energy is reporting 99.79% of customers have power.

Hurricane Irma Preparation

DOE is closely monitoring the storm and ESF #12 responders have been prepositioned with FEMA Incident Management Assistance Teams (IMAT) in Puerto Rico, St. Thomas, and St. Croix. ESF #12 responders are also deployed to both the FEMA Region II and IV Coordination Centers.

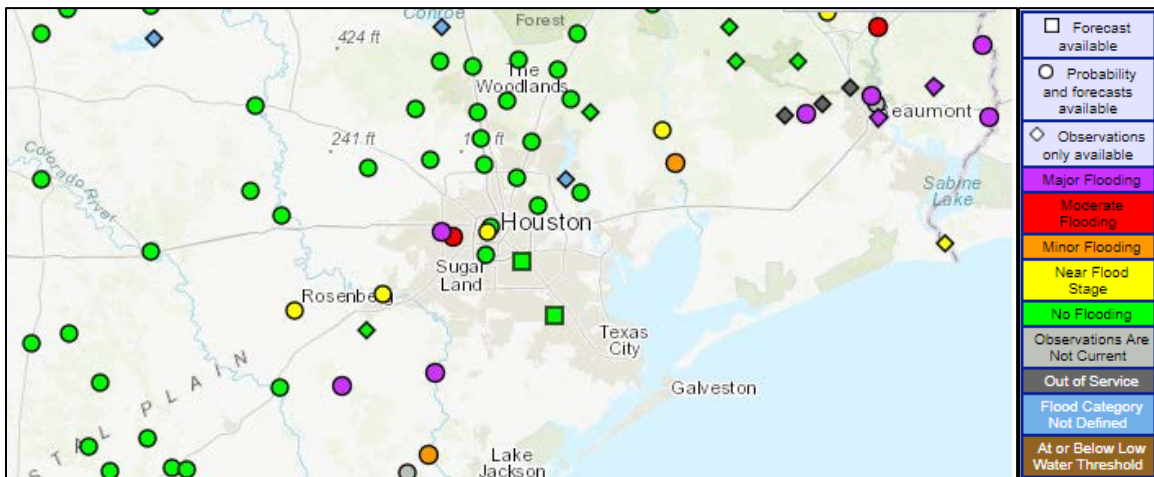
DOE is working with the Energy Information Administration to assess potential impacts to the oil and gas sector from Hurricane Irma. As of the August 25 Weekly Petroleum Status Report, stocks of gasoline in PADD 1 (East Coast) were near the top end of the 5-year range.

HURRICANE HARVEY INCIDENT OVERVIEW

Hurricane Harvey made landfall around 11:00 PM EDT on Friday, August 25 between Port Aransas and Port O'Connor, Texas as a category 4 hurricane. Harvey was the strongest hurricane to impact Texas since 1961 and the first category 4 storm to make landfall in the United States since Hurricane Charley impacted Florida in 2004.

The National Weather Service reports showers and thunderstorms Tuesday and into Wednesday, but widespread heavy rainfall is unlikely. Peak river crests are expected to occur this weekend with a slow recession thereafter for upper TX and southwest LA coasts, including Houston and Beaumont.

Advanced Hydrologic Predictive Services (as of 2:30 PM EDT Tuesday)

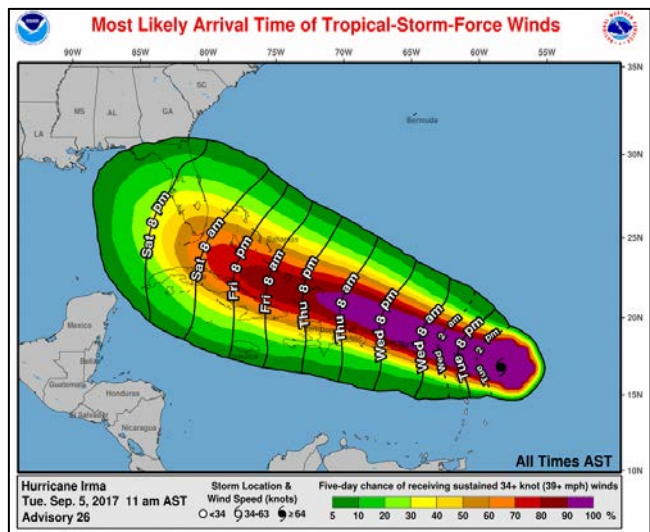
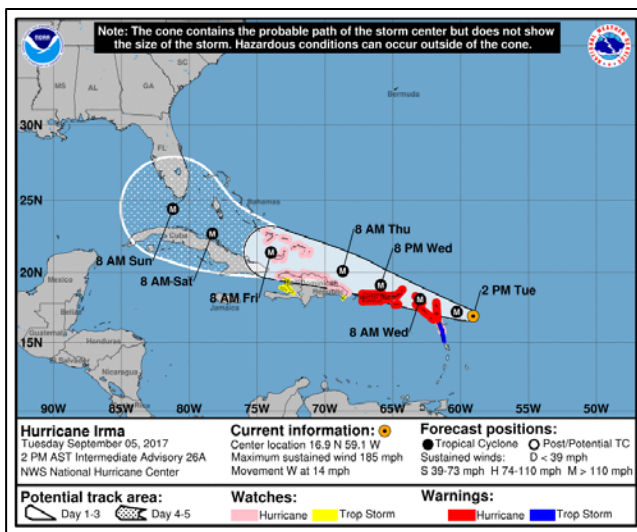


HURRICANE IRMA INCIDENT OVERVIEW

As of 2:00 PM EDT, Irma was 180 miles east of Antigua, moving west at 14 MPH, with maximum sustained winds of 185 MPH (category 5). Hurricane-force winds extend outward up to 60 miles and tropical storm-force winds extend up to 160 miles from the center. Irma is expected to continue moving west through today, followed by a turn towards the west-northwest tonight. The core of Irma will move near or over portions of the northern Leeward Islands tonight or early Wednesday.

Irma is expected to produce storm surge of 7 to 11 feet above normal tide levels along the coasts of the extreme northern Leeward Islands, including the U.S. Virgin Islands (except St. Croix) and will be accompanied by heavy surf. The northern coasts of Puerto Rico will experience storm surge of 3 to 5 feet with the southern coasts of Puerto Rico and St. Croix forecast to receive storm surge of 1 to 2 feet.

Hurricane warnings have been issued for the Leeward Islands, including: the U.S. Virgin Islands, Puerto Rico, Vieques and, Culebra and the British Virgin Islands. Hurricane watches and tropical storm warnings have been issued for outlying areas, including the southeastern Bahamas and Haiti.



Hurricane Harvey

ELECTRICITY SECTOR

ELECTRICITY OVERVIEW AND OUTAGE DATA

Flood waters in Southeast Texas and Southwest Louisiana continue to recede, allowing crews to assess damage and begin restoration. Before equipment in flooded areas can be reenergized, equipment at substations will need to dry out and be inspected for damage. There are no unmet needs reported to DOE by any electric utility at this time.

ELECTRICITY OUTAGES AS OF 2:30 PM EDT 09/05/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Texas	55,996	<1%	68,896
Total			*

**There is no sum of the Peak Customer Outage column because peaks for individual utilities occur at different times; a total would not reflect peak outages.*

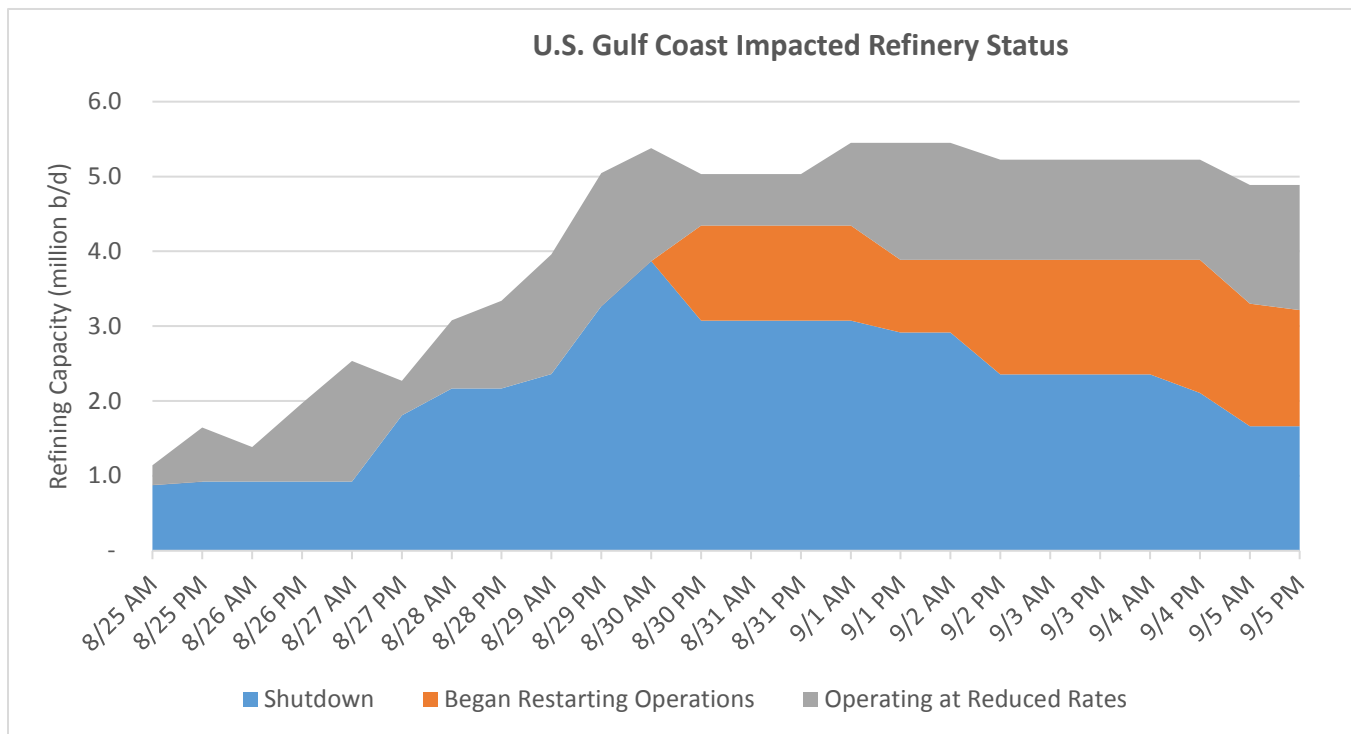
- Texas
 - As of 2:30 PM EDT, September 5, the State of Texas has 55,996 customer outages (<1% of total state customers).
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 - Entergy Texas has 14,409 customer outages, a 15% decrease from last report.
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 - CenterPoint Energy is reporting 99.79% of customers have power.



OIL & GAS SECTOR

PETROLEUM REFINERIES

- As of 02:30 PM EDT, September 5, six refineries in the Gulf Coast region were shut down, according to public reports. No shut refineries have changed their status since the last report. These refineries have a combined refining capacity of 1,663,000 b/d, equal to 17.2% of total Gulf Coast (PADD 3) refining capacity and 9.0% of total U.S. refining capacity.
- Five refineries are in the process of restarting after being shut down. This process may take several days or weeks to start producing product, depending whether any damage is found during restart. These refineries have a combined capacity of 1,551,199 b/d, equal to 16.0% of total Gulf Coast (PADD 3) refining capacity and 8.4% of total U.S. refining capacity. One refinery began operating at reduced rates since the last report.
- At least seven refineries in the Gulf Coast region were operating at reduced rates, according to public reports. These refineries have a combined total capacity of 1,671,276 b/d, equal to 17.2% of total Gulf Coast (PADD 3) refining capacity and 9.0% of total U.S. refining capacity. (NOTE: Actual crude throughput (production) reductions are lower than the total combined capacity). One refinery began operating at reduced rates since the last report.



The above chart summarizes impacts to Gulf Coast refining capacity as a result of Hurricane Harvey over time, as reported in DOE's Situation Reports. Impacted refining capacity is aggregated into three categories: 1) shutdown refineries (blue), 2) refineries that were shut down and have begun restarting (orange), and refineries that are operating at reduced rates (gray). Refinery statuses are updated based on various news outlets and company websites.



PORTS

- The U.S. Coast Guard has set the following conditions for ports and waterways in the U.S. Gulf Coast region as a result of Harvey. Eleven ports are closed or open with restrictions. Crude imports at these ports averaged 2,077,000 b/d from January through May 2017.

Status of Texas and Louisiana Gulf Coast Ports as of 02:00 PM EDT 09/05/2017			
Port	Crude Imports Jan-May 2017 (b/d)	Status	Date Stamp
Sector Corpus Christi			
Brownsville	--	Open.	08/31/17
Corpus Christi	245,000	Port Condition Recovery. Open with restrictions. Allowing vessels up to 43' draft to transit during daytime hours only. Larger vessels allowed one-way transits during daylight hours only. Ship channel also open with restrictions. Working to reopen completely 09/04.	08/31/17
Sector Houston and Galveston			
Freeport	133,000	Open with restrictions. Daylight hours only. Maximum draft 38'.	09/04/17
Galveston	114,000	Port Condition Recovery. Open with restrictions. Ship channel also open with restrictions. Galveston Bay Entrance Channel, Outer Bar Channel, Bolivar Roads Anchorages, Bolivar Roads Channel, and Galveston Harbor open, no restrictions. Other - 37' draft max, 24/7.	09/04/17
Houston	646,000	Port Condition Recovery. Open with restrictions. Houston Shipping Channel is open to just past ExxonMobil's Baytown refinery to vessels up to a 40' draft. Ships exiting and entering the channel on 9/4.	09/04/17
Texas City	134,000	Port Condition Recovery. Open with restrictions. 37' draft max. No vessel movements on Texas City harbor channel between Texas City Dock 38 and Dock 50 on 9/4 from 8 am to 4 pm. 24/7 for other.	09/04/17
Sector Port Arthur and Lake Charles			
Beaumont	33,000	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/03/17
Lake Charles	218,000	Port Condition Recovery. Open with restrictions. 37 feet draft restrictions of the Calcasieu Ship Channel.	09/03/17
Nederland	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/03/17
Orange	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/03/17



Port Arthur	687,000	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only. 9/4 USCG allowed some barge traffic; Ships still not allowed to enter port via Neches River; Potential to allow ships on 9/5.	09/04/17
Port Neches	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only for vessels > 500 gross tons.	09/03/17
Sabine Pass	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only for vessels > 500 gross tons.	09/03/17

Source: U.S. Coast Guard

TANKERS AND CRUDE IMPORTS

- As of 10:00 PM EDT, September 4, 55 oil vessels remain waiting in anchorage off the Texas ports of Corpus Christi, Houston, Galveston, Freeport, Texas City, Beaumont, Nederland, Port Arthur, Port Neches, Sabine, and the Louisiana port of Lake Charles. The vessels carry an estimated total of 38.0 million barrels of crude oil. This is up from 54 vessels waiting late September 3.

NATURAL GAS UTILITIES

- On the evening of September 1, CenterPoint Energy notified officials of a natural gas leak from an 18-inch underwater pipeline in the Neches River in Beaumont, Texas. The Beaumont Police Department and operator dive teams successfully isolated the line.
- As of September 2, the City of Rockport and Port Aransas are maintaining pressure and actively repairing leaks. Woodsboro Natural Gas had six leaks, which have all been repaired. TGS Port Arthur is evaluating gas service house by house to see if gas needs to be restored or turned off

WAIVERS

- The table below lists fuel-related waivers issued by the U.S. Environmental Protection Agency (U.S. EPA) and State agencies.
- On August 30, U.S. EPA issued a multi-state (13 states) waiver for requirements of low-RVP conventional gasoline and reformulated gasoline (RFG). Later in the day, the waiver was expanded to include 38 states and Washington, DC.



State Fuel Waivers as of 02:00 PM EDT 09/05/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
Multi-state waiver	RVP standard waived for gasoline sold in affected counties where low-RVP gasoline is required (9.0 RVP or lower). Allows sale of gasoline up to 11.5 psi RVP in all states located in PADD 1, PADD 2, and PADD 3. The waiver supersedes and expands the areas covered by the August 30 waiver. RFG standard is also waived in the designated regions. Also waived are provisions prohibiting the blending of RFG blendstock with conventional gasolines or blendstocks.	U.S. EPA	08/30/17 Expanded: 08/31/17	09/15/17	Active
TX	RFG requirement waived in Houston-Galveston-Brazoria areas. Waiver expanded to four-county Dallas-Fort Worth RFG area 8/26. Allows the sale or distribution of conventional gasoline.	U.S. EPA	08/25/17	09/15/17	Active
TX	7.8 psi RVP standard waived for gasoline sold in 20 counties where low-RVP gasoline is required and are also under the Governor's Disaster Declaration. Waiver expanded to 98 counties required to use low-RVP fuel 8/26. Allows sale of gasoline up to 9.0 psi RVP.	U.S. EPA	08/25/17	09/15/17	Active
LA	RVP requirements of 7.8 psi and 9.0 psi waived in applicable areas. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP.	State of Louisiana	08/29/17 Expanded: 08/30/17	09/15/17	Active
MI	RVP regulations waived. Permits the transportation and sale of motor fuels 9.0 psi RVP in Wayne, Oakland, Macomb, St. Clair, Livingston, Washtenaw, Monroe, and Lenawee counties, and up to 11.5 psi RVP elsewhere in Michigan.	State of Michigan	08/31/17	09/15/17	Active
MS	RVP standards of 9.0 psi waived. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP.	State of Mississippi	08/30/17	09/15/17	Active
VA	Waived the RVP limit for gasoline ethanol blends prescribed by regulations.	State of Virginia	09/01/17	09/15/17	Active



Sources: [U.S. Department of Transportation](#); Governor Office Websites

- Nine states have declared state emergencies due to Harvey. Note that Kansas has not declared a State of Emergency, however is using its resources to assist other states. These declarations automatically waive select Federal Motor Carrier Safety Regulations (FMCSRs), including hours-of-service (HOS) regulations, for motor carriers hauling resources to aid in restoration efforts. The declarations exempt FCMSR in every state along the motor carrier’s route as long as the final destination is with the declared disaster areas in Texas or Louisiana.
- In addition, the Federal Motor Carrier Safety Administration (FMCSA) declared that issued a Regional Emergency Declaration exempting FMCSRs in the States of Texas and Louisiana. On August 31, the FMCSA expanded the Regional Emergency Declaration to additional states and Washington, DC.
- The table below summarizes emergency declarations and HOS waivers issued by states in response to the impacts of Hurricane Harvey.

State Emergency Declarations and HOS Waivers <i>as of 02:00 PM EDT 09/05/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
Regional (Multi-State)	Regional Emergency Declaration and FMCSR waiver issued by FMCSA. Applies to Alabama, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, South Carolina, Virginia, Washington, D.C. and West Virginia	08/25/17 Expanded 08/31/17	10/26/17	Active
Texas	State of Disaster declared for 61 counties in Texas.	08/23/17 Expanded: 08/30/17 09/01/17	TBD	Active
Louisiana	State of Emergency.	08/23/17	TBD	Active
Kentucky	State of Emergency/HOS waiver issued for transporters of food, water, medicine, fuel and other commodities within the affected areas to aid in emergency response of affected areas. All economic requirements normally associated with interstate motor transportation for all vehicles providing relief supplies to affected areas.	08/28/17	09/27/17	Active
Alabama	State of Emergency/HOS waiver issued for petroleum products and petroleum-related supplies, goods, and services in and through the State.	08/30/17	09/29/17	Active



State Emergency Declarations and HOS Waivers <i>as of 02:00 PM EDT 09/05/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
Georgia	State of Emergency/HOS waiver issued for petroleum products through the State.	08/30/17	09/20/17	Active
Kansas	Governor acknowledged state of emergency in Texas and declared that licensing rules, registration and fuel tax permits, and oversize vehicle permit fees are waived for motor carriers and persons operating motor vehicles directly participating in the relief and restoration effort.	08/30/17	09/20/17	Active
North Carolina	State of Emergency/HOS waiver issued for petroleum products, and emergency relief supplies and services through the state.	08/31/17	09/30/17	Active
South Carolina	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/30/17	Active
Michigan	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/15/17	Active
Virginia	State of Emergency/HOS waiver issued for petroleum products through the state.	09/01/17	09/15/17	Active

- On September 1, PHMSA issued an Emergency Stay of Enforcements for operators affected by Hurricane Harvey. The declaration states that PHMSA does not intend to take any enforcement action relating to their noncompliance with certain operator qualification requirements, or pre-employment and random drug testing requirements, arising from the use of personnel for pipeline activities related to response and recovery.



Hurricane Irma

OIL & GAS SECTOR

PORTS AND EMERGENCY DECLARATIONS

- In preparation for Hurricane Irma in the Atlantic, the U.S. Coast Guard has set the following conditions for ports and waterways in the South Atlantic and Caribbean as a result of Harvey. Ports in three port sectors are either closed or open with restrictions.
- Ahead of Hurricane Irma, the State of Florida and Puerto Rico both declared a State of Emergency on September 4.

Status of Florida and Caribbean Ports <i>as of 02:00 PM EDT 09/05/2017</i>			
Port	Crude Imports Jan-May 2017 (b/d)	Status	Date Stamp
Sector Puerto Rico			
All Puerto Rico Ports	---	Port Condition Zulu. Closed. Due to the potential impact from Hurricane Irma, all ports in Puerto Rico are closed to vessel traffic unless specifically authorized by the COTP.	09/05/17
All U.S. Virgin Islands Ports	---	Port Condition Zulu. Closed. Due to the potential impact from Hurricane Irma, all ports in the U.S. Virgin Islands are closed to vessel traffic unless specifically authorized by the COTP.	09/05/17
Sector Miami			
Fort Pierce	---	Port Condition Whiskey. Open with restrictions	09/05/17
Miami/ Miami River	---	Port Condition Whiskey. Open with restrictions	09/05/17
Port Everglades	---	Port Condition Whiskey. Open with restrictions	09/05/17
Port of Palm Beach	---	Port Condition Whiskey. Open with restrictions	09/05/17
Sector Key West			
All Ports	---	Port Condition Whiskey set for 09/05 at 8:00 PM EDT. Open with restrictions. There are no safe havens in the COTP Key West area. All oceangoing vessels and barges over 500 gross tons will be required to put to sea if/when Port Condition Yankee is set.	09/05/17

PETROLEUM TERMINALS

- NuStar shut its St. Eustatius oil terminal.

