



Hurricane Irma & Hurricane Harvey

Event Report (Update #22)

REPORT TIME & DATE:	4:00 PM EDT Thursday, September 7, 2017
INCIDENT START DATE:	Friday, August 25, 2017
PRIMARY LOCATION(S):	Irma: Leeward Islands // Harvey: Gulf Coast (Texas and Louisiana)
REPORT DISTRIBUTION:	Public

EXECUTIVE SUMMARY

As of 2:00 PM EDT, Hurricane Irma was 65 miles north-northeast of Puerto Plata, Dominican Republic, moving west-northwest at 16 MPH, with maximum sustained winds of 175 MPH (category 5). Irma moved across the Virgin Islands and near the northern coast of Puerto Rico on Wednesday, causing damage throughout the region. Southern Florida is likely to begin experiencing tropical storm-force winds early Saturday with the center of the storm potentially approaching Florida Sunday morning.

Hurricane Irma

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.

Irma Electricity Sector Summary (as of 11:00 AM EDT)

- The Puerto Rico Electric Power Authority (PREPA) is reporting 1,044,289 customer outages (66% of total customers).
- DOE is working with Puerto Rico, the Electricity Sub-Sector, and FEMA to help facilitate the movement of mutual aid crews to the island, if needed, after the storm has passed.
- As of 11:00 AM EDT Thursday, U.S. Virgin Island Water and Power Authority (WAPA) reported that all customers on the islands of St. Thomas (19,581 customers) and St. John (2,893) are without power.
- As of 11:00 AM EDT Thursday, the island of St. Croix has 9,080 customer outages.
- Damage assessments and restorations efforts have begun across the impacted areas.
- Utilities in the storm path are monitoring the storm and activating their response plans in preparation for response and restoration efforts.

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

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, including PADD 1C (Lower Atlantic).

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

- Six refineries in the Gulf Coast area remain shut down and five refineries are in the process or restarting. At least six refineries are operating at a reduced rate.

HURRICANE IRMA INCIDENT OVERVIEW

As of 2:00 PM EDT, Irma was 65 miles north-northeast of Puerto Plata, Dominican Republic and 70 miles southeast of Grand Turk Island, moving west-northwest at 16 MPH, with maximum sustained winds of 175 MPH (category 5). Hurricane-force winds extend outward up to 60 miles and tropical storm-force winds extend up to 185 miles from the center. On the forecast track, the eye of Irma should continue to move just north of the coast of Hispaniola today, be near the Turks and Caicos and southeastern Bahamas by this evening, be near the Central Bahamas by Friday, and should be between Cuba and Andros, Bahamas on Saturday morning. Irma is then forecast to turn north and will likely impact Florida. Southern Florida is likely to begin experiencing tropical storm-force winds early Saturday with the center of the storm potentially approaching Florida Sunday morning.

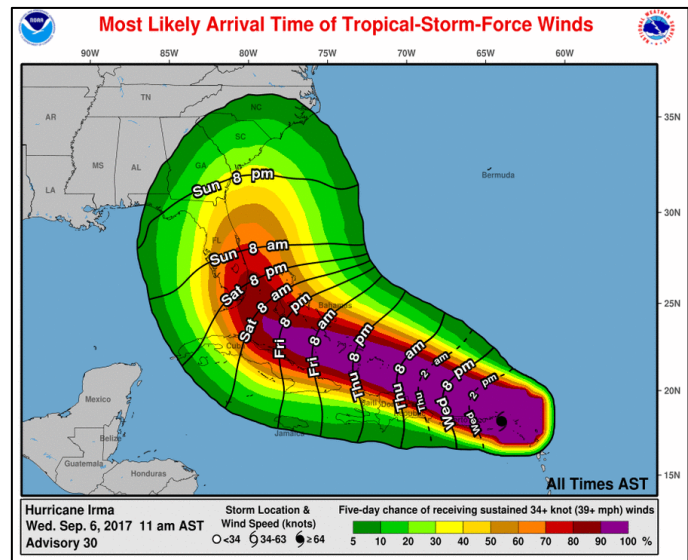
Irma is expected to produce storm surges of 5 to 10 feet for Southern Florida, and 15 to 20 feet for the Turks & Caicos southeastern & central Bahamas. The northwestern Bahamas can expect 4 to 7 feet of storm surge, while Hispaniola can expect 1 to 5 feet along the northern shore.

Hurricane watches and storm surge watches are now in effect for portions of South Florida from Jupiter Inlet southward to Bonita beach and the Florida Keys. Hurricane warnings remain in effect for Bahamas and the northern coasts of Haiti and the Dominican Republic. Hurricane watches and tropical storm warnings extend to outlying areas, including Cuba.

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 reported 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.



Hurricane Irma

ELECTRICITY SECTOR

- As of 1:15 PM EDT Thursday, the Puerto Rico Electric Power Authority (PREPA) is reporting 1,044,289 customers (66% of total customers) are without power.
- As of 11:00 AM EDT Thursday, U.S. Virgin Island Water and Power Authority (WAPA) reported that all customers on the islands of St. Thomas (19,581 customers) and St. John (2,893) are without power.
- As of 11:00 AM EDT Thursday, the island of St. Croix has 9,080 customer outages.
- DOE remains in contact with the Nuclear Regulatory Commission (NRC) regarding nuclear generating facilities in Florida that may be impacted by Irma. Florida Power & Light will shut down the Turkey Point and St. Lucie nuclear plants ahead of Irma’s expected arrival. The NRC expects Turkey Point shut down Friday evening and St. Lucie to go offline about 12 hours later, depending on the storm track.
- Utilities in the storm path are monitoring the storm and activating their response plans in preparation for response and restoration efforts.

ELECTRICITY OUTAGES AS OF 11:00 AM EDT 09/07/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Puerto Rico	1,044,289	66%	1,101,118
St. Croix	9,080	N/A	14,543
St. John	2,893	100%	2,893
St. Thomas	19,581	100%	19,581
Total	1,075,843	-	*

OIL & GAS SECTOR

PORTS

- The U.S. Coast Guard has set the following conditions for ports and waterways in the South Atlantic and Caribbean as a result of Hurricane Irma. Ports in six port sectors are either closed or open with restrictions. Listed in the table are ports that receive petroleum products

Status of Caribbean and Florida Ports as of 02:00 PM EDT 09/07/2017			
Port	Receipts (b/d)*	Status	Date Stamp
Sector San Juan			
All Puerto Rico Ports	139,000**	Port Condition Zulu. Closed.	09/05/17



Status of Caribbean and Florida Ports as of 02:00 PM EDT 09/07/2017			
Port	Receipts (b/d)*	Status	Date Stamp
All U.S. Virgin Islands Ports	18,000**	Port Condition Zulu. Closed.	09/05/17
Sector Miami			
Miami	1,500	Port Condition Whiskey. Open with restrictions.	09/05/17
Port Everglades	298,000**	Port Condition Whiskey. Open with restrictions. Expects Port Condition X-Ray on 9/07 and Yankee 9/08. Port will continue to accept cargoes including fuels through 9/07. Port will suspend operations as of 8pm on 9/08. COTP had issued notice on 9/06 that Port Everglades has gasoline reserves of at least one week stored on site.	09/07/17
Port of Palm Beach	500	Port Condition Whiskey. Open with restrictions	09/05/17
Sector Key West			
All Ports	--	Port Condition X-Ray. Open with restrictions. Port Condition Yankee set, effective 8pm on 9/07.	09/07/17
Sector St. Petersburg			
Port Manatee	700	Port Condition Whiskey. Open with restrictions. Port Condition X-Ray set, effective 8pm on 9/07.	09/07/17
Tampa	273,700	Port Condition Whiskey. Open with restrictions. Port Condition X-Ray set, effective 8pm on 9/7.	09/07/17
Sector Jacksonville			
Port Canaveral	32,200	Port Condition X-Ray. Open with restrictions	09/07/17
Port of Jacksonville	69,800	Port Condition Whiskey. Open with restrictions.	09/06/17
Sector Mobile			
Pensacola (FL)	11,400	Open.	09/07/17
Panama City (FL)	8,500	Open.	09/07/17
Sector Charleston			
Charleston	16,500	Open.	09/07/17
Sector Savannah			
Savannah	12,600	Port Condition Whiskey. Open with restrictions.	09/07/17
Sector North Carolina			
Wilmington	11,500	Open.	09/06/17
Sector Hampton Roads			
Hampton Roads	7,400	Open.	09/06/17

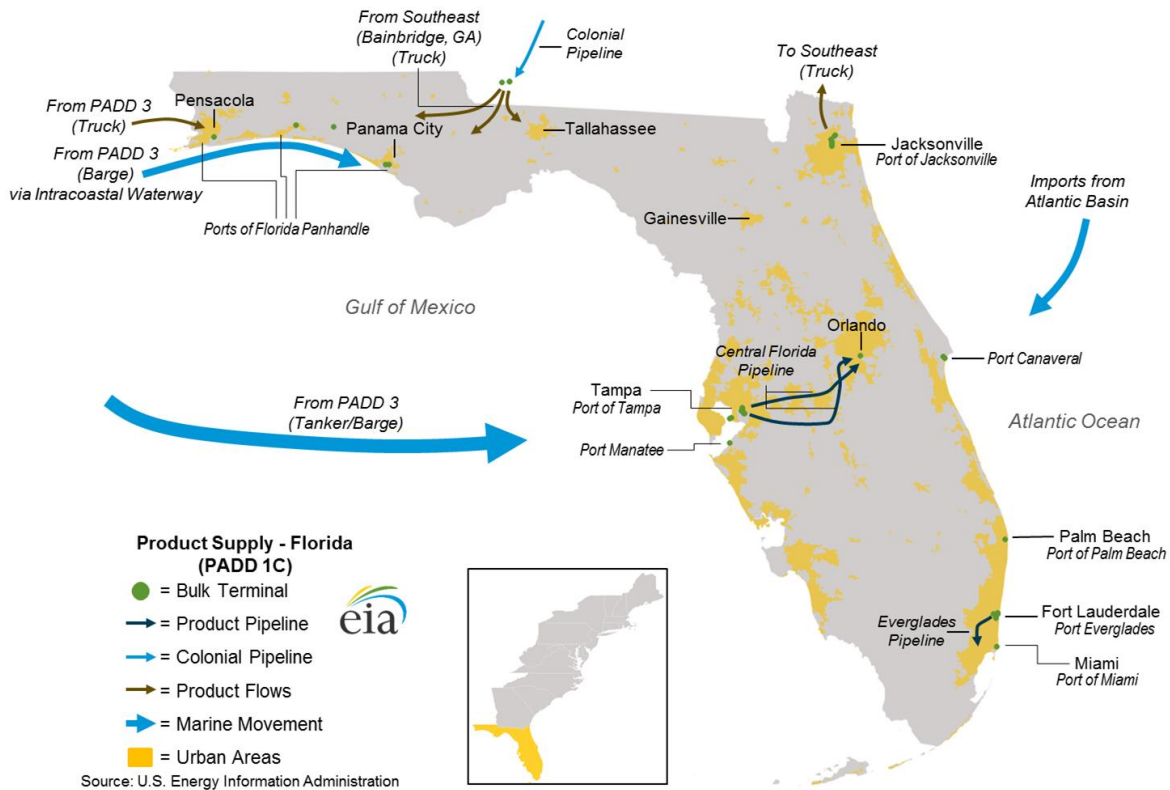
*Transportation fuels (gasoline, distillate, and jet fuel) unless otherwise noted.

**Includes bunker fuel and fuel oil and distillate for power generation.

Source: Receipt data from [U.S. EIA](#), USACE data (2013), EIA Company Level Imports



- Below is a map of key petroleum ports and petroleum product pipelines in Florida.



Source: EIA: <https://www.eia.gov/analysis/transportationfuels/padd1n3/>

EMERGENCY DECLARATIONS & WAIVERS

- On September 7, the U.S. EPA issued a waiver of the federal requirements for low volatility “summertime” gasoline requirements in all East Coast states located in PADD 1, all Midwestern states located in PADD 2, and all Gulf Coast states located in PADD 3, through the end of the high ozone season on September 15. In addition, EPA extended the Low Volatility SIP waiver in Texas and other federally-enforceable areas through September 16. EPA also extended the waiver for the Reformulated Gasoline (RFG) requirements in states in all three PADDs listed above until September 26. The waiver notes that all gasoline that is already in the distribution system on September 26 may be distributed and sold until depleted. Gasoline in the possession of parties other than retailers and purchaser-consumers must meet the RFG requirements no later than October 26. This multi-state fuel waiver covers Florida and other Southeast states threatened by Hurricane Irma. This waiver supersedes the August 31 multi-state fuel waiver of the gasoline requirements for PADDs 1-3.
- On September 6, EPA issued a limited waiver of highway diesel fuel red dye requirements in Florida through September 22. Under the waiver, the EPA will allow the sale, distribution, and use of red dye NRLM diesel fuel in the State of Florida for use in highway diesel vehicles, but the diesel fuel must meet the 15 ppm standard.
- On September 6, the Federal Motor Carrier Safety Administration (FMCSA) issued a Regional Emergency Declaration exempting FMCSRs in the States of Alabama, Florida, Georgia, Mississippi,

North Carolina, South Carolina, Tennessee, and in the Commonwealth of Puerto Rico and the territory of the U.S. Virgin Islands.

- The table below summarizes emergency declarations and Hours of Service (HOS) waivers issued by states in response to the impacts of Hurricane Harvey.

State Emergency Declarations and HOS Waivers as of 02:00 PM EDT 09/07/2017				
State	Details	Effective Dates		Status
		Start	End	
Regional (Multi-State)	Regional Emergency Declaration and FMCSR waiver issued by FMCSA. Applies to Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, and in the Commonwealth of Puerto Rico and the territory of the U.S. Virgin Islands.	09/06/17	10/05/17	Active
Puerto Rico	State of Emergency.	09/04/17	--	Active
U.S. Virgin Islands	State of Emergency.	09/04/17	--	Active
Florida	State of Emergency/HOS Waiver.	09/04/17	--	Active
Georgia	State of Emergency.	09/06/17	--	Active
South Carolina	State of Emergency/HOS Waiver.	09/06/17	--	Active
North Carolina	State of Emergency/HOS Waiver.	09/07/17	--	Active

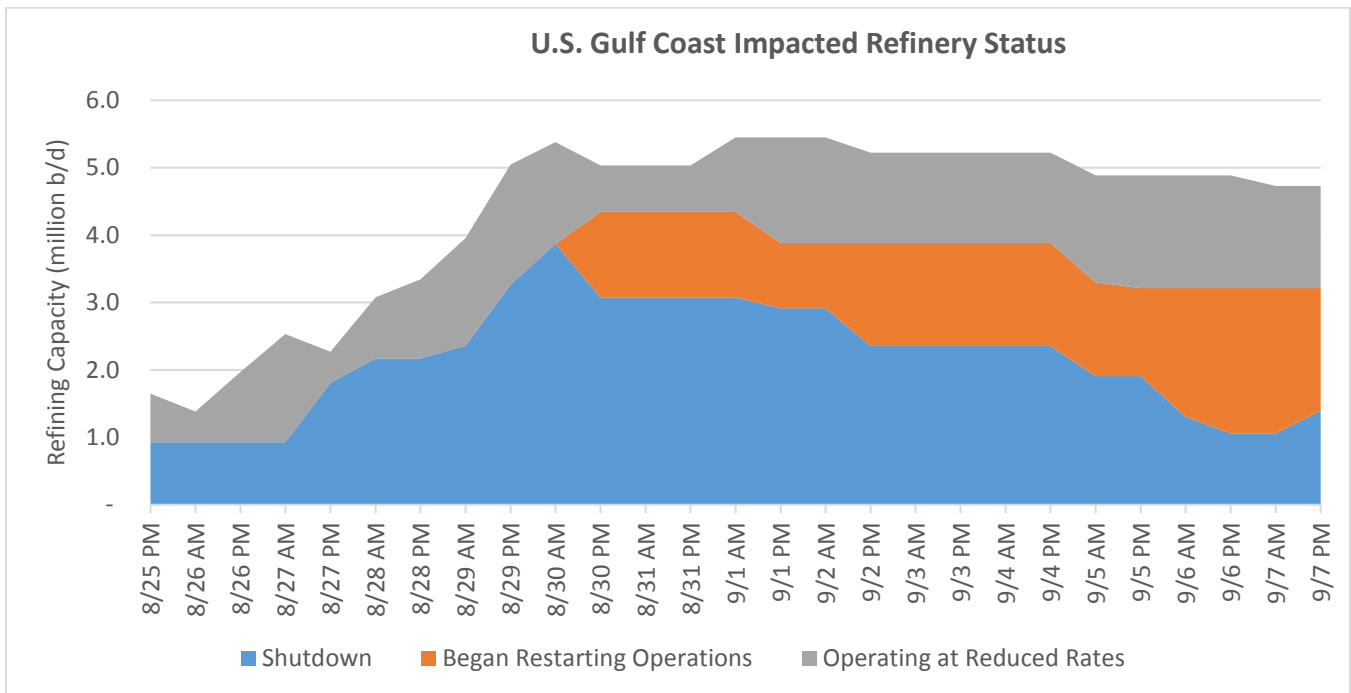


Hurricane Harvey

OIL & GAS SECTOR

PETROLEUM REFINERIES

- As of 02:00 PM EDT, September 7, six refineries in the Gulf Coast region were shut down, according to public reports. One refinery that previously began restarting has shut down due to electrical issues since the last report. These refineries have a combined refining capacity of 1,395,000 b/d, equal to 14.4% of total Gulf Coast (PADD 3) refining capacity and 7.5% 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. Production should be assumed to be minimal until restart is completed. These refineries have a combined capacity 1,819,199 b/d, equal to 18.8% of total Gulf Coast (PADD 3) refining capacity and 9.8% of total U.S. refining capacity.
- At least six refineries in the Gulf Coast region were operating at reduced rates, according to public reports. These refineries have a combined total capacity of 1,513,776 b/d, equal to 15.6% of total Gulf Coast (PADD 3) refining capacity and 8.2% of total U.S. refining capacity. (NOTE: Actual crude throughput (production) reductions are lower than the total combined capacity). No refineries that were operating at reduced rates began operating at normal 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 09/07/2017			
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.	09/06/17
Sector Houston and Galveston			
Freeport	133,000	Open. 24/7. 38-foot max draft.	09/05/17
Galveston	114,000	Port Condition Recovery. Open with restrictions. Ship channel also open with restrictions. Galveston Bay Entrance Channel, Outer Bar Channel, Inner Bar Channel, Bolivar Roads Anchorages, Bolivar Roads Channel, and Galveston Harbor open, no restrictions. Other - 33' draft max, 24/7.	09/05/17
Houston	646,000	Port Condition Recovery. Open with restrictions. Houston Ship Channel open 24/7 below Sidney Sherman bridge with draft restrictions: <ul style="list-style-type: none"> Entrance Channel to Houston Cement West – 40-foot max draft. Houston Cement West to Sidney Sherman Bridge – 36-foot max draft. Intercostal Waterway open 24/7	09/05/17
Texas City	134,000	Open. 24/7.	09/05/17
Sector Port Arthur and Lake Charles			
Beaumont	33,000	Port Condition Recovery. Open with restrictions. 34' draft restriction for all waters of the Sabine-Neches Waterway. Waiting on Sabine Pilots for further opening guidelines.	09/06/17
Lake Charles	218,000	Port Condition Recovery. Open with restrictions. 37 feet draft restrictions of the Calcasieu Ship Channel.	09/05/17
Nederland	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/05/17
Orange	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	09/05/17
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	09/05/17



		still not allowed to enter port via Neches River; Potential to allow ships on 9/5. West Port Arthur Bridge no restrictions.	
Port Neches	--	Port Condition Recovery. Open with restrictions. <ul style="list-style-type: none"> Vessels > 500 gross tons limited to daylight hours above Texaco Island Intersection. Draft restriction of 34 feet in place for waters of Sabine-Neches Waterway below Neches River Intersection. 30-foot draft restriction for waters of Neches River. 	09/05/17
Sabine Pass	--	Port Condition Recovery. Open with restrictions.	09/05/17

Source: U.S. Coast Guard

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 09/07/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
Multi-state waiver	<p>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.</p> <p>RFG standard is also waived in the designated regions. Also waived are provisions prohibiting the blending of RFG blendstock with conventional gasolines or blendstocks.</p>	U.S. EPA	08/30/17 Expanded: 08/31/17 Extended: 09/07/17	10/26/17	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



State Fuel Waivers as of 02:00 PM EDT 09/07/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
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
SC	RVP standards of 9.0 psi waived. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP. Allows the comingling of RFG with conventional gasoline. Waives butane blending and T V/L = 20 requirements.	State of South Carolina	09/07/17	10/31/17	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) 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 as of 02:00 PM EDT 09/07/2017				
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,	08/25/17 Expanded 08/31/17	10/26/17	Active



State Emergency Declarations and HOS Waivers <i>as of 02:00 PM EDT 09/07/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
	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			
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 the State.	08/30/17	09/29/17	Active
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.
- On September 5, the Federal Energy Regulatory Commission (FERC) approved an emergency waiver tariff, effective immediately, allowing the pipeline system to accept 11.5 RVP gasoline (A3) to fill nominations for 7.8 RVP gasoline (A1) and 9.0 RVP gasoline (A2); and to ship conventional gasoline in lieu of reformulated gasoline. Colonial's tariffs and tariff practices would not normally permit it to accept product that does not conform to the specifications of the product that was nominated.

