

HOW TOMORROW MOVES



 **ARCADIS**

COMMUNITY ENGAGEMENT, OIL SPILL MASS ESTIMATES, AND LESSONS FROM THE LYNCHBURG, VA CRUDE OIL DERAILMENT

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HOW TOMORROW MOVES



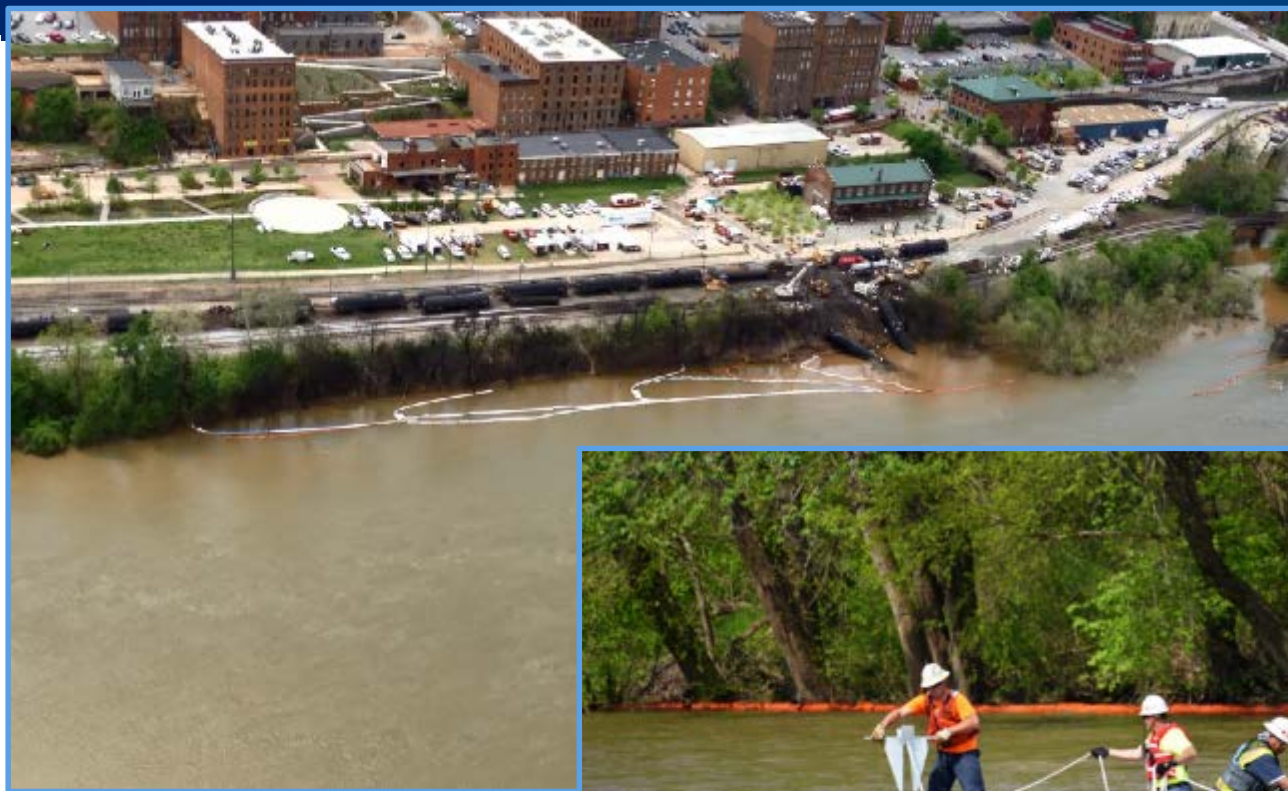
INCIDENT SUMMARY – APRIL 30, 2014



INITIAL EMERGENCY RESPONSE ACTIONS



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COMMUNITY ENGAGEMENT



COMMUNITY ENGAGEMENT



Lynchburg Incident Crude Oil Information Sheet

A CSX Transportation train carrying crude oil derailed Wednesday, April 30th, at approximately 2:00 p.m. eastern time in Lynchburg, Va. The train derailed 17 tank cars and three of the tank cars were partially submerged in the James River.

CSX continues to implement a comprehensive environmental assessment and protection efforts that include land-, air- and water-based evaluation of potential impacts. Teams continue to monitor and assess the areas surrounding the derailment, both in Lynchburg and downriver.

Actions are underway to identify and recover oil released due to the derailment that impacted the environment. This work is being done in coordination with federal, state and local environmental authorities.

Crude Oil

Crude oils are naturally occurring substances derived from decomposition of plant and animal matter under high temperature and pressure for thousands of years. When crude oil is released in the environment, its composition changes as a result of "weathering." Evaporation is one of the more significant weathering processes, which occurs mainly during the first 24-48 hours after release, which greatly reduces the amount of the lighter components of crude oil. The substance remaining after evaporation is called weathered crude oil. Due to the weathering process, the remaining product is generally considered to have less potential for causing adverse health effects.

A crude oil sheen can also be seen following an oil release. This sheen is a very thin, rainbow colored film on the water and is considerably less toxic than oil.

What to do if you see crude oil

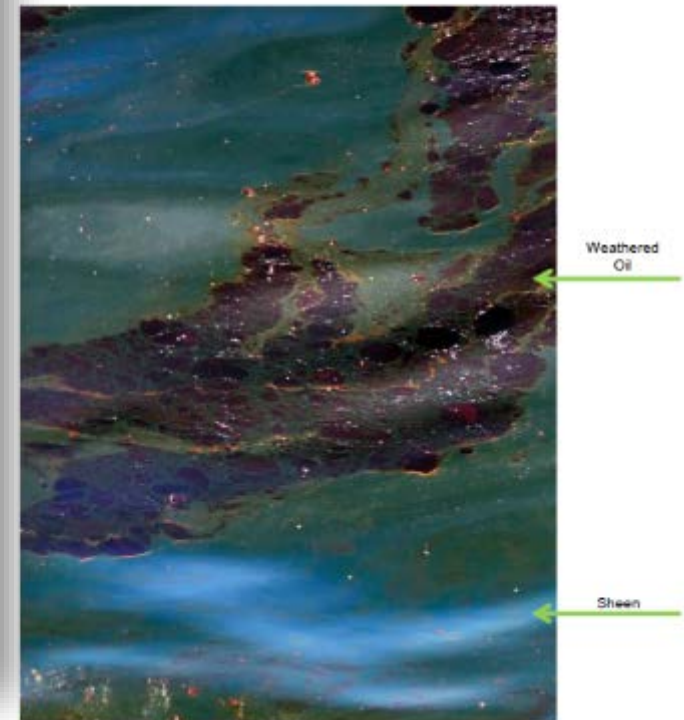
Crude oil and other petroleum products in water are detected by odor, discoloration or a sheen on the water's surface. You may also see weathered crude, a light brown substance, along the waterline.

The best way to protect yourself from exposure to crude oil is to avoid direct contact with the oil. If you must go near the oil, wear oil resistant gloves. Latex gloves should not be used since they may be dissolved by the oil. Keep arms and legs covered to avoid skin contact with the oil. If you get oil on your skin, you should immediately wash it off with soap and water.

Prolonged skin contact with most petroleum products including crude oil may cause skin irritation, including moderate reddening of the skin, swelling, or slight burning sensation. These effects are temporary and resolve after the oil is removed from the skin.

If you see what you think is crude oil, please take a picture, note the GPS coordinates and contact TellCSX at 1-877-835-5279. For any concerns about exposure, contact The Center for Toxicology and Environmental Health's hotline at 434-442-4642.

Stock Photo

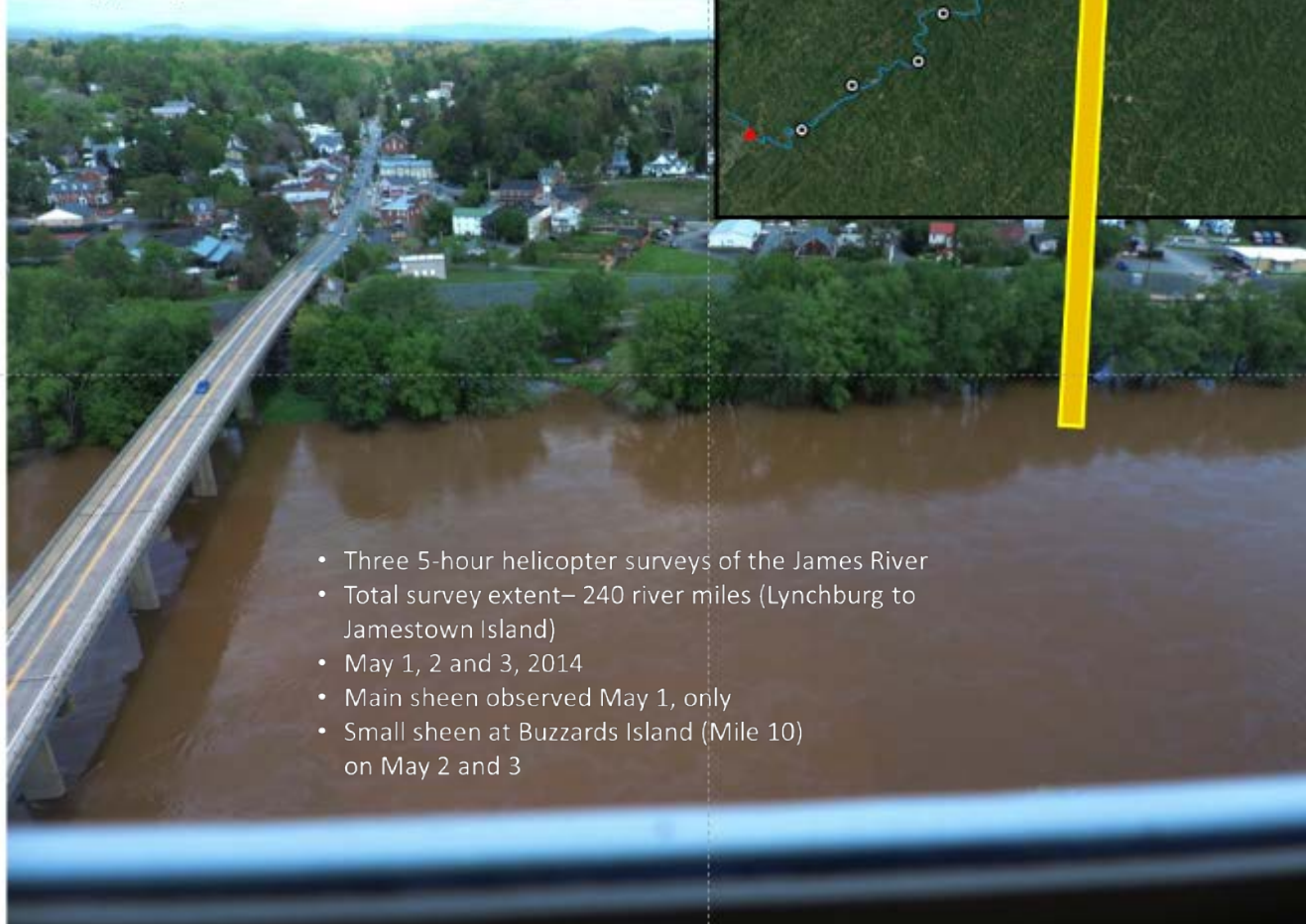


1-800-TELL-CSX



SHEEN AREA ASSESSMENT

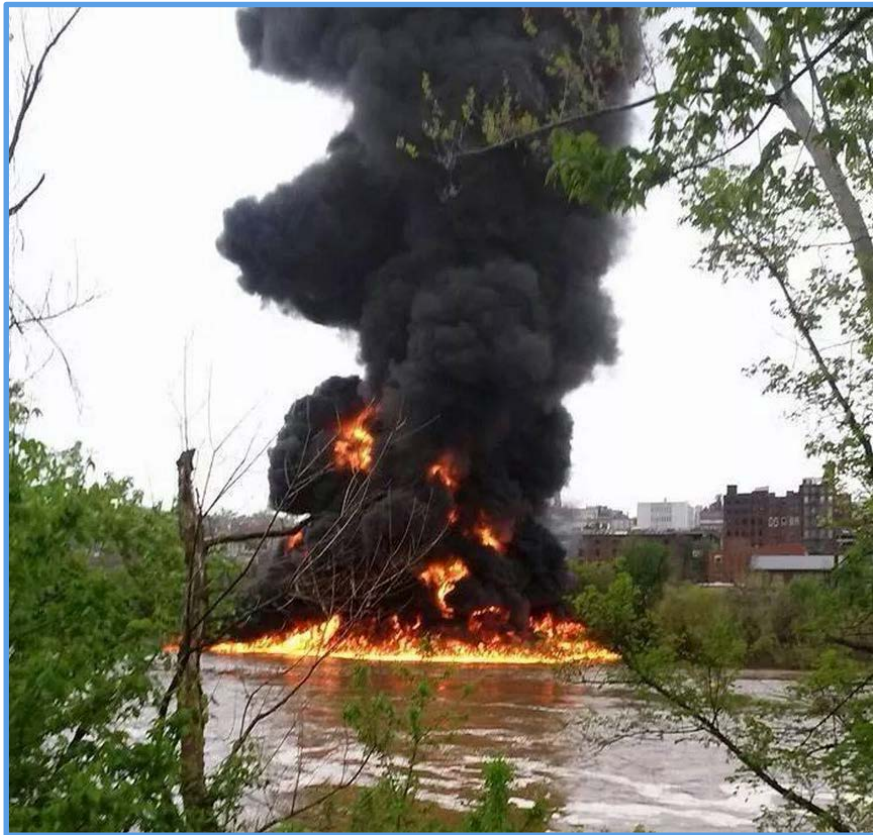
Scottsville (Mile 67) –
May 1, 2014 12:04 PM



- Three 5-hour helicopter surveys of the James River
- Total survey extent– 240 river miles (Lynchburg to Jamestown Island)
- May 1, 2 and 3, 2014
- Main sheen observed May 1, only
- Small sheen at Buzzards Island (Mile 10) on May 2 and 3



MASS LOSS FROM BURNING



IN-SITU BURN ESTIMATE

U.S. Coast Guard
OIL SPILL RESPONSE OFFSHORE
IN-SITU BURN OPERATIONS MANUAL



U.S. Coast Guard Research and Development Center
1082 Shennecossett Road, Groton, CT 06340-6048

Report No. CG-D-06-03

OIL SPILL RESPONSE OFFSHORE,
IN-SITU BURN OPERATIONS MANUAL



FINAL REPORT
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