Major Crude Oil Derailment Transitioned to Monitoring Only in Less Than Ten Months

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On March 5, 2015 a BNSF Railway Company (BNSF) unit train of 105 tank cars carrying Bakken crude oil derailed alongside the Mississippi River near Galena, Illinois. A total of 21 crude oil tank cars derailed, 10 of which were breached, and approximately 110,000 gallons of crude oil were released. By identifying the overall project endpoints early and aggressively tailoring a remedial approach to achieve those goals, this project was successfully transitioned to monitoring-only status less than a year after the derailment.

The nature of the event and proximity to the Mississippi River required a rapid and effective response to address the fire, contain the spill, prevent impacts from reaching the river, and remediate the derailment area. Approximately 530 linear feet of sheet pile barrier wall were installed around the release area to prevent migration of impacts to the River and to provide protection in the remediation area from the River if the water levels were to rise. Several important strategies were employed to achieve these goals in an expedited fashion. Key expert resources were engaged from multiple disciplines including:

- Wetlands BNSF proactively requested support in identifying potential wetlands in and adjacent to the derailment area to avoid unnecessarily impacting wetland areas during the response and remediation activities.
- LNAPL and crude oil forensics & characteristics BNSF requested industry experts mobilize to the site to ensure response actions were appropriate for the type of crude released.
- Geotechnical engineering Some of the derailed tank cars had released crude oil on the steep embankment from the rail bed down to the Mississippi River. Due to structural integrity concerns, remedial options needed to avoid compromising the structure while removing as much of the impacts as possible.
- Water treatment construction Onsite removal and management of exposed groundwater and storm water was essential to the success of the response and remedial activities. Experts on the rapid design and implementation of mobile water treatment system were engaged and the equipment was procured and was onsite within 16 days.
- Water discharge permitting While response activities worked through NIMS process to obtain temporary authorization to discharge treated water, NPDES permitting experts concurrently pursued expedited review and approval of the required NPDES Permit to Discharge Process Wastewater.
- Regulatory expertise Extensive experience in working with both US EPA on NIMS protocol response activities, as well as a thorough understanding of IL EPA programs, facilitated a seamless transition from U.S.EPA oversight to Illinois EPA oversight.

The team implemented an aggressive and comprehensive approach to contain the crude, remove accessible impacts, remediate and address residual impacts, and leveraged strong regulatory relationships to accelerate and expedite the regulatory review and approval process. Approximately ten months after the derailment, the site status transitioned into groundwater monitoring only, and is anticipated that the site will be formally closed after one year of quarterly groundwater monitoring is complete.