

**LNAPL CHARACTERIZATION USING LASER INDUCED FLUORESCENCE  
TO UPDATE A CONCEPTUAL SITE MODEL**

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An industrial site had a release of number two fuel oil in the late 1990's that was discovered in 2000. Emergency responses included excavation and removal of impacted soils and installation of recovery wells and trenches to remove remaining product. Recently, recovery from the wells and trenches has diminished although residual LNAPL still remains at several locations throughout the site. Previous site LNAPL models relied on observations of product in monitoring wells indicating potential data gaps. After reviewing costs and site constraints, Laser-induced Fluorescence (LIF) with visual observation, field-screening and minimal laboratory analysis was determined to be the most effective to more accurately delineate extent and magnitude of the LNAPL plume. Based on LIF logs and the 3D conceptual model of the logs, LNAPL extends approximately twenty feet below ground surface in the heart of the plume. Visual observations, FID readings, piezometer monitoring and laboratory analysis at the 5 confirmatory boring locations provide agreement with LIF indicating that characterization of the LNAPL plume was successful and cost-effective. An updated conceptual site model was also created that allowed for the implementation of a new more effective remedial strategy in the fall of 2009.

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