CASE STUDY | ENVIRONMENTAL LANDS

# Site Remediation for a Rail Station fuel spill

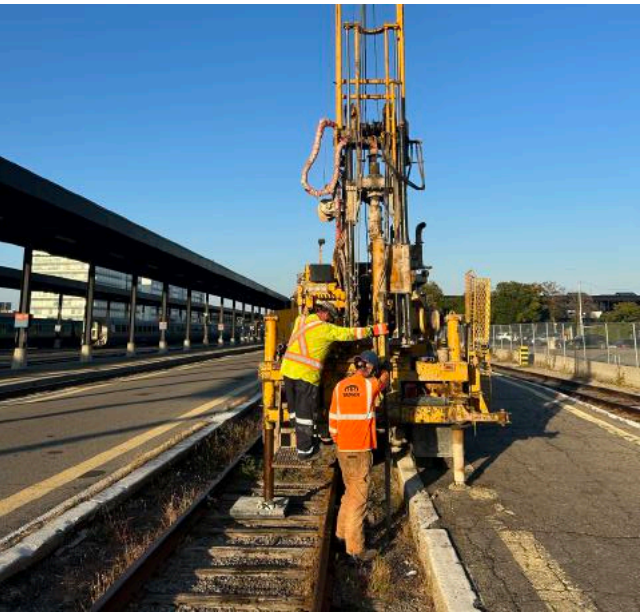
## OVERVIEW

CM3 Environmental Inc. (CM3) was retained to provide environmental consulting with respect to a diesel fuel spill at an active rail station within a large metropolitan area in Ontario. CM3 was requested to assess the spill and provide an estimate of the volume of contaminated soil for removal, and to provide oversight and environmental soil testing during the remedial excavation.

## KEY CHALLENGES

In order to conduct the site assessment at the rail station, CM3 was required to provide a stringent and site-specific Health and Safety Plan (HSP) prepared in compliance with the requirements of the Ontario Ministry of Labour and the rail station.

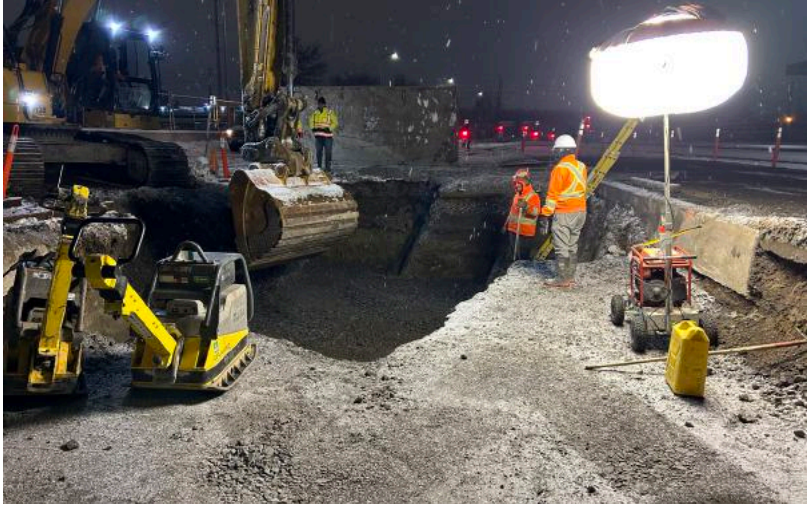
Since the spill occurred at one of the main rail tracks and was required to be shut down for any work to be completed, the assessment occurred within a set schedule during the day and the remedial work was completed in a 36-hour period to minimize disruption to the rail station operations.

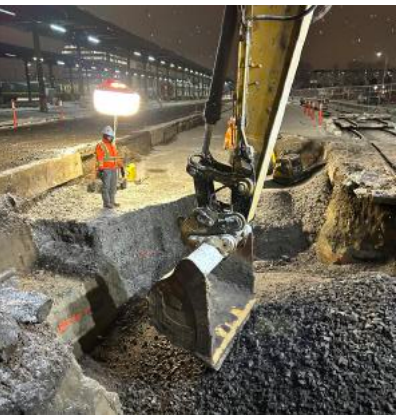


## OUR APPROACH

CM3 completed a Phase II environmental site assessment (ESA) to delineate the extent of the soil contamination from the spill and provide estimates for the excavation of contaminated soil. At the request of the rail station, the assessment was limited to the area of the spill along the tracks and in graveled areas, and boreholes were not advanced through asphalt platforms. Eleven boreholes were advanced and selected soil samples were analyzed for benzene, toluene, ethylbenzene, xylenes, (BTEX), and petroleum hydrocarbons (PHCs) F1-F4 fractions. The assessment identified up to 1,000 metric tonnes of contaminated soil related to the spill, with contamination under two active tracks and platforms. However, the soil contamination could not be fully delineated due to the limited work area.

The remedial excavation was completed by the client with a section of the track removed in the work area to allow removal of contaminated soil, and the excavation, backfill and reinstatement was completed within the 36-hour time limit. Approximately 600 metric tonnes of contaminated soil was removed from the work area, limited by the time and infrastructure constraints. CM3 provided environmental consulting and soil testing services during the remedial excavation. Confirmation soil samples from the extents of the excavation identified contaminated soil at the limits of the north, east and south walls of the excavation. The soil sampling showed that the west wall and floor of the excavation were not contaminated.





## RECOMMENDATIONS

CM3 recommended delineation of the soil contamination identified at the extents of the excavation to evaluate supplemental remedial options, and the assessment of potential groundwater contamination related to the spill.

CM3 was requested to complete a post remediation assessment to delineate residual soil contamination not removed during the excavation and to assess potential groundwater contamination resulting from the diesel spill. The post remediation assessment included nine boreholes converted to groundwater monitoring wells within and beyond the backfilled remedial excavation. Selected borehole soil samples were analyzed for BTEX and PHCs. The results showed soil contamination to the east of the remedial excavation. Soil contamination was not identified at any other borehole locations, and the residual contamination at the extents of the excavation was considered delineated to the north, south and west. Groundwater samples from all monitoring wells were analyzed for BTEX and PHCs.

The results did not identify groundwater contamination in any of the monitoring wells. CM3 recommended further assessment to the east to delineate the extent of soil contamination, and groundwater monitoring to confirm the groundwater quality. Despite the challenges posed by the site-specific requirements and the need to minimize disruption to rail operations, CM3 effectively assessed the extent of contamination, oversaw the remedial excavation, and provided thorough post-remediation assessments.

The recommendations for further delineation and groundwater monitoring ensure that the environmental impact of the spill is fully addressed, safeguarding the rail station's operations and the surrounding environment.