Brownfield remediation typically involves the implementation of integrated approaches to remediate and manage environmental impacts to soil and groundwater. Increasingly, remediation of brownfields in advance of residential development brings together novel partnerships to move seamlessly from demolition and remediation to site development to bring new residential units to market.

This case study will outline the challenges and triumphs in remediating and managing a former hospital and unlicensed fill area to convert the property to a large multi-phase residential development. Unique aspects to the project included: utilizing two regulatory approaches (generic site condition standards and risk assessment [RA]), management of multiple stakeholders including neighbouring property owners, Conservation Authority and City, integrated and responsible excess soil management with site development teams, integrating non-standard contaminants into a RA process, and development of risk management measures (RMMs) that respected existing mature vegetation.

The property was first developed in 1953 with construction of the hospital, which was serviced with multiple underground and above ground storage tanks, providing fuel for various furnaces and boilers. The historical fill area, which was part of the former hospital property, was active in the 1950s and 1960s. Identified material in the fill area appeared to be construction-related debris, wood, brick, concrete, plastic. In addition to fill-related contaminants (PAHs, inorganics) and an isolated instance of liquid bunker oil, installed vapour probes indicated the production of methane at locations within the fill area.

For the ‘generic’ parcel, excavation and off-site disposal of impacted soil was completed in concert with demolition activities. Through integrated site design, attempts were made to minimize the excess soil generated by the site, however ultimately, the cut/fill analysis indicated that the property was in a significant surplus. Additional soil characterization was completed to support movement of the excess soil to an approved receiving site, diverting soil from landfill and from unauthorized fill sites, consistent with best management practices and proposed excess soil legislation.

Conveyance of multiple easements to the local municipality required additional efforts to navigate strict policy on conveyance conditions. An innovative approach was employed to demonstrate that EC/SAR impacts to soil were associated with deicing activities at existing and former municipal roadways and therefore exempt under the conveyance policy.

A conveyance through private lands to connect a new watermain presented several obstacles due in large part to a third-party owner with limited expertise on environmental matters. Concerted efforts on the part of the development and consulting team were required to facilitate this part of the development. The introduction of an independent third-party peer review was instrumental in breaking the impasse to finalize the terms of an access agreement.

The RA recommended appropriate RMMs to address identified human and ecological risks. Consideration of methane generation in the RA imposed implementation of non-standard risk management. Various fill caps and other measures were proposed to address identified risks while attempting to minimize disturbance to existing mature vegetation.

Ultimately, an integrated consulting and development team was instrumental to navigating the many challenges to the development of this brownfield property.
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Monisha is the Environmental Director at Kilmer Brownfield Management Limited. Kilmer Brownfield Management Limited (Kilmer Brownfield) is an investment capital group with expertise that is dedicated to the re-development of former industrial and commercial properties in Ontario and throughout Canada. The focus of the investment strategy is urban re-development projects that are a planning priority for many communities as urban intensification is a fundamental principle of the smart growth strategy. Monisha provides strategic direction on environmental assessment, remediation and risk management activities for Kilmer Brownfield’s portfolio of real estate developments and potential acquisitions. With more than a decade of experience in the brownfield management and development industry, Monisha’s experience has spanned across many industries including real estate development, oil and gas, manufacturing, and environmental consulting. Monisha holds a Masters Degree in Applied Sciences in Chemical and Environmental Engineering from the University of Toronto and is a Board Member and Committee Chair for the Canadian Brownfield Network.

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