Overview
The Port Lands Area is an 880 acre, historically industrialized, brownfield site that is being redeveloped into new public spaces and naturalized to control water flow and manage sediment. Formerly the area was used for industries including petroleum refining and storage, equipment manufacturing, steel foundries, liquid and solid waste management, vehicle maintenance/repair operations, and municipal services. The redeveloped area will include parks, flood protection, bridges and structures, roads and municipal infrastructure (IMAGE 1).

Pilot-Scale Results
Self-sustaining smoldering combustion was achieved during the STAR pilot resulting in a smoldering front propagation rate of approximately 1.2 ft/day. Post treatment samples showed excellent treatment of impacted soil within the sandy target horizon. Site soils for STARx tests were collected from test pits (IMAGE 3a). The STARx pilot test resulted in ~95% to >99.7% reductions in total petroleum hydrocarbon concentrations within the combustion zone, from initial concentrations on the order of 20,000 to 30,000 mg/kg. The analytical data was confirmed through visual assessment of the Site soils before and after system operation (IMAGE 3b).

Full-Scale STARx Hottpad™ to Treat Petroleum Hydrocarbon-Impacted Soils Generated Through the Creation of a Realigned River Channel
Port Lands Redevelopment in Toronto

Conclusions
The STAR and STARx technologies are rapid, safe, and low-cost treatment options for hydrocarbon-impacted soils.

The full-scale STARx Hottpad™ plant selected for soil remediation at the Port Lands Site:

- Is capable of treating 150,000 tonnes over an 18-month operational period;
- Is a cost-effective, sustainable alternative to off-site disposal; and,
- Will allow for soil re-use during development and naturalization activities at the property.

Full-Scale Project
Savron is part of a team that was selected for the remediation of soils to be excavated from the new river channel. The volume of soils designated for STARx Hottpad™ treatment is 150,000 tonnes, to be processed over an 18-month operational period. The Hottpad™ Plant being constructed for this project consist of four individual pads operating concurrently and can process 1000 m³ of soil per week (IMAGE 4).