

## CASE STUDY – IN-SITU BioLogix Application

**Site Information** - A pipeline break that affected a total volume of approximately 2,400 m<sup>3</sup> in western Alberta. The environment and ground type was muskeg/old growth mosses, ferns, and lichens, as well as small grasses and shrubs.

**Application** - The application was a combination of in-situ low and high-pressure broadcast. We had a crew apply BioLogix and our Dynamic Surfactant using a high-pressure pump and fire hose nozzle as well as low-pressure backpack sprayers to ensure difficult pockets within the forested area were covered. We applied BioLogix to the entire site and then flushed the microbes down to the deeper impacts (0.5m-1m) by broadcasting 10 m<sup>3</sup> of water using a high-pressure fire nozzle to spray the entire site. This was a one-time application

**Results** - The site was only sampled twice in 2015 with great degradation happening in 35 days. Results were very positive considering temperatures were quite low at this time of year as well.

Sample ID	Hydrocarbon	Units	BEFORE BioLogix Application Oct 2 2015	35 days AFTER BioLogix Application Nov 5 2015	Alberta Environment Criteria*
ID: SM15-01	F1 (C6-C10)	mg/kg	100	<10	210
	F2 (C10-C16)	mg/kg	167	<10	150
	F3 (C16-C34)	mg/kg	2180	<10	300
	F4 (C34-C50)	mg/kg	804	<10	2800
ID: SM15-02	F1 (C6-C10)	mg/kg	200	<10	210
	F2 (C10-C16)	mg/kg	5630	<10	150
	F3 (C16-C34)	mg/kg	7770	<10	300
	F4 (C34-C50)	mg/kg	1970	<10	2800
ID: SM15-03	F1 (C6-C10)	mg/kg	<10	<10	210
	F2 (C10-C16)	mg/kg	1490	<10	150
	F3 (C16-C34)	mg/kg	5700	<10	300
	F4 (C34-C50)	mg/kg	1620	<10	2800

\*AT1 Guidelines for coarse grained soils in Natural Area (Alberta Environment, 2014)