CASE STUDY 11 · SPILL RESPONSE

Spill Extent Evaluation for a Mixed Oil Spill

A leaking pipe between a hopper and a waste oil storage tank — extent confirmed, and site works completed, in three hours.

TMK Consulting Engineers invited RemScan to examine a potentially hazardous site where a hopper had been linked to a waste oil storage tank by a pipe suspected of leaking mixed hydrocarbons onto the soil below. RemScan Spill Response Mode was used to provide timely measurements of Total Petroleum Hydrocarbon (TPH) concentration in the soil.

Sampling locations were chosen based on the area's former use. As the hopper sits at the top of a slope, leaking oil would run downhill. Samples were therefore collected directly beneath the hopper outlet, along the pipe's route, and directly downhill from the hopper outlet. A sample was also obtained from the face of the retaining wall at the bottom of the slope.

Each soil sample was split in two for measurement by both RemScan and an analytical laboratory. RemScan's Portable Drying Unit (PDU) dried the samples in less than 20 minutes.

With a project cut-off of 1,000 mg/kg TPH between contaminated and clean soil, RemScan returned no false positives or negatives relative to the laboratory — decisions made on RemScan measurements were the same as those the laboratory data would have supported.

Measurements confirmed the remediation team's assessment of both the presence and the extent of the spill, and identified TPH on the wooden retaining wall at the base of the site, indicating run-off from historic rainwater flow.

The hopper at the top of the slope, linked by pipe to the waste oil storage tank.

Dried soil samples measured in RemScan Spill Response Mode.

TABLE 1: LABORATORY MEASUREMENT COMPARED TO REMSCAN PREDICTION

SAMPLE	LABORATORY TPH (MG/KG)	REMSCAN TPH (MG/KG)
Baseline	0	0
Wall	5,730	7,100
Test 1	180	599
Test 2	570	847
Test 3	4,040	8,861
Test 4	4,900	18,747
Test 5	16,300	19,441

3 hours

Site works completed

Zero

False positives or negatives at the 1,000 mg/kg cut-off

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