

CASE STUDY 06 · MINING

Reducing Mine Site Costs

Fortescue uses RemScan across its whole hydrocarbon management process in the Pilbara – with a payback period of less than 12 months.

Fortescue Metals Group (Fortescue) is one of the world's largest iron ore producers, located in the Pilbara region of Western Australia. The miner produces more than 150 million tonnes per annum and uses huge drilling and earthmoving machinery, which is subject to hydrocarbon spills from hydraulics, fuel and lubricants.

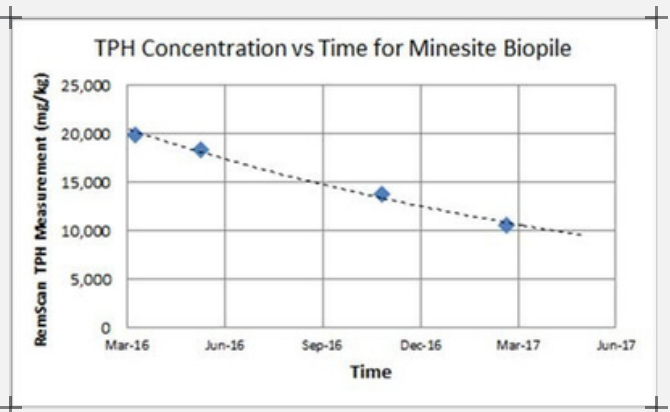
Fortescue utilises RemScan® for the rapid and accurate measurement of TPH (C₁₀ to C₄₀) in soil. This is preferred to off-site laboratory analysis which, in this remote and harsh environment, is logistically challenging, time-consuming and relatively costly.

REMSCAN IN THE HYDROCARBON MANAGEMENT PROCESS

- **Identifying and delineating spills.** In addition to normal operations, RemScan can be used to audit contractor laydown areas prior to demobilisation, reducing site liabilities.
- **Excavating spills.** Ensuring all contaminated soil is removed while avoiding the transfer of excess clean soil to the biofarm.
- **Monitoring the biofarm.** Nutrients and water are added and the soil is aerated to stimulate natural microorganisms to degrade the hydrocarbons. The Fortescue team uses RemScan to monitor hydrocarbon concentration over time to determine the endpoint, when laboratory analysis validates the results so soil can be reused in operations.



RemScan being used *in situ* beside mining machinery.



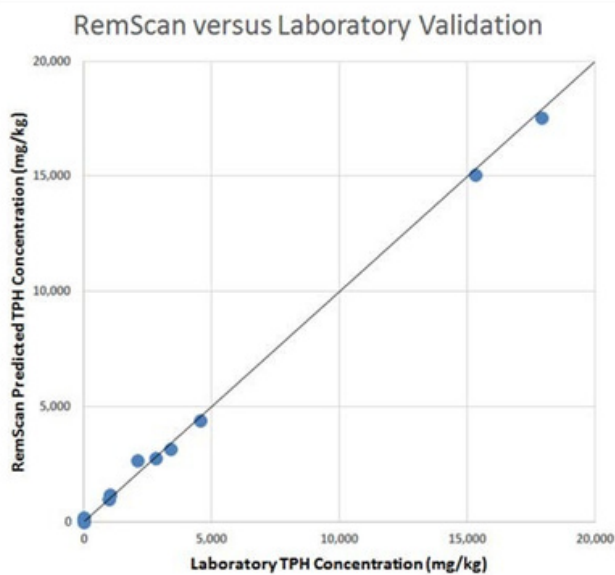
TPH concentration versus time for a mine site biopile, monitored with RemScan.

EVALUATED BENEFITS

- Assists in efforts to minimise, mitigate and remediate the impacts of its operations.
- Collects more frequent data, which increases confidence in the remediation outcomes.
- Reduces the need for costly laboratory analysis.

< 12 months

Payback period on the instrument



RemScan versus laboratory analysis – the closeness of the points to the Y=X line demonstrates the high accuracy of RemScan.



Site crews measure soil in place, with no consumables and no sample dispatch.



The Fortescue biofarm, where excavated soil is treated and monitored to endpoint.