

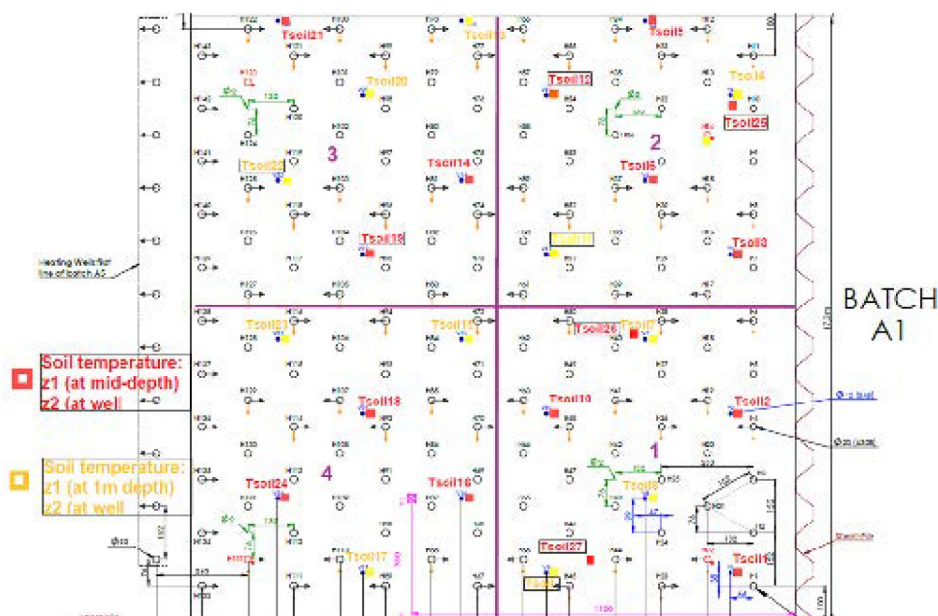
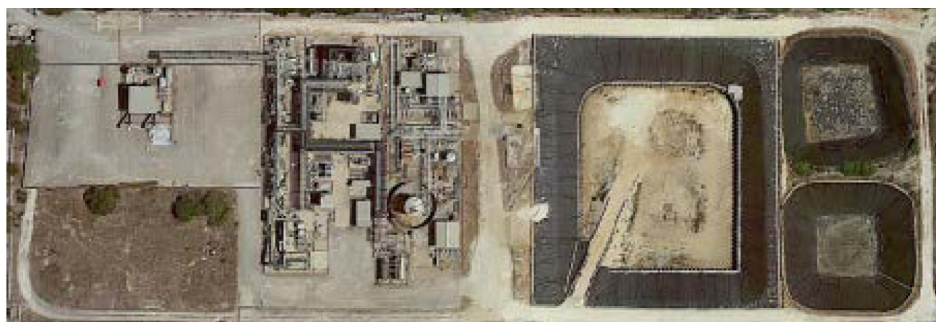
Context and Project Description

The site is located in the Refinery of Gela (Italy) that belongs to the Company ENI S.p.A. The treatment takes place in the ex-discharge of the refinery divided in 2 zones, that contained refinery ole fins deposited in the past (called FNP). This area, named Vasca A, is situated within the former landfill sites (also called Vecchie Discariche) in the Isola 32 of the Refinery.

The objective of the full project is to treat by thermal desorption the zone for single batches (12 batches for zone A and 12 batches for zone B). For each batch the overall thickness to be treated is about $4.5 \div 5$ meters for the zone A and 12 meters for the zone B corresponding to a volume of soil to be treated equal to 80.000m^3 .

In the figure is showed the general layout of a standard batch :

Figure 1. Treatment site - Gela (Italy)



Monitoring

The characteristics of the VASCA A, are summarized in Table 1. The soils of the area of interest see the presence of Hydrocarbons C <12 and Hydrocarbons C > 12, Benzene, Chloromethane, CVM, 1,2 Diclouroethane, PAH, TCE, PCE, TCA and Mercury.

Key words

Contaminants

HCT, PAH,
VOCI (PCE, TCE, TCA)
Hg

Max. concentration
130.000 mg/kg DM

Volume
Total: 80.000m^3

Tonnage
150 Tons

Nb of heating tubes
200/Batch

Temperature Target
 250°C

Heating duration
2017-2022

Treatment targets
<750 mg/kg DM

Location
Sicily - Italy

Future Use
Industrial

Client
ENI - Gela Refinery

Partner
SIMAM and ICARO ECOLOGY

Consultant
/

Date
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Conclusion

The goal of the treatment, in terms of achieving the optimal concentration requested by the Italian law was verified thanks to internal sampling and final sampling by the regional agency of the environmental protection (ARPA : Agenzia regionale per la protezione ambientale) which confirmed the end of the treatment and the removal of contaminants in the matrix of the ground almost always below the limit of detection, thus, we can say that remediation objectives are achieved and meet the requirements.

The case study aims to highlight the main challenges of ISTD, as a sustainable solution, the lessons learned, improvement energy efficiency, as wells as the evolution of ISTD from every single batch and achievements of the remediation goals.

Images

Before:



After:

