ISTD/ I-17-01
SCIENCE

Context

The project took place in Brussels, in the basement of an office building situated in the heart of the European district.

The pollution is due to the leakage of two oil tanks located beneith the underground car park. The soil was polluted with hydrocarbons. An average concentration of 18.000 mg/kg DM. The depth was 14 meters and the total contaminated surface was 50 m².

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2. Treatment zone in a basement

3. Basement car park: height access limited

4. Installation of the Smart™ burners

5. Drilling inside

Monitoring

Temperature monitoring: 21 heating tubes.

Key words

Contaminants
TH C10-C40, BTEX (COV)

Max. concentration
18.000mg/kg dm

Volume
700

Tonnage
1275

Nb of heating tubes
21 (L:14m)

Temperature Target
220°C

Heating duration
33

Treatment targets
300mg/kg dm

Location
Brussels - Belgium

Future Use
Offices

Client
CENTRUM INVEST

Partner
/

Consultant
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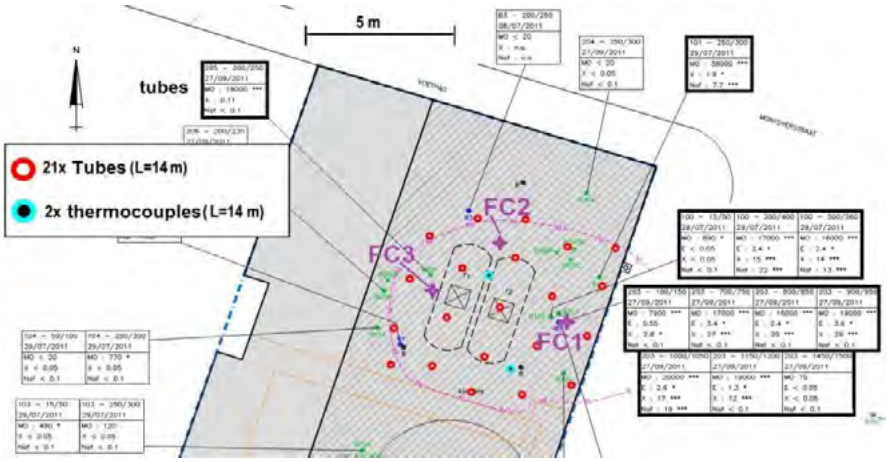
Polluted Area



Analysis Result

	FC1	FC1	FC1	FC2	FC3
TH (C_{10} – C_{40})	2.8-2.9 m	10.2-10.3	14.9-15	2.8-2.9 m	2.8-2.9 m
Before *(mg/kg DM)*	7 .900	19.000	75	19.000	770
After *(mg/kg DM)*	170	310	<50	66	160
Target *(mg/kg DM)*	300	300	300	300	300
Valid.	OK	Acceptable	OK	OK	OK

	FC1	FC1	FC1	FC2	FC3
BTEX	2.8-2.9 m	10.2-10.3	14.9-15	2.8-2.9 m	2.8-2.9 m
Before *(mg/kg)*	3.35	5	< 0.05	0.11	<0.30
After *(mg/kg)*	<0.1	<0.1	<0.1	<0.1	< 0.1
Target	10	10	10	10	10
Valid.	OK	OK	OK	OK	OK

Tables 2 & 3. Concentration CHT & BTEX

	Value measured at exhaust gaz	Norm*
CO (mg/m^3)	<50	50
NO_x (mg/m^3)	<10	400
SO_2 (mg/m^3)	<1	50
COT (mg/m^3)	0	10

Table 4. Air emissions (total project)

- Planning : Mobilization : 4 weeks
- Treatment : 5 weeks
- Analyses & reports : 2 weeks
- Demobilization: 2 weeks

Conclusion

The objective of TH remediation has been reached

- HM Concentration ≤ 300 mg/kg
- Planning ≤ 13 weeks

* Average daily emission limit values (Directive 2010/75/UE)