



**TOTAL**

**TREATING WASTE FROM THE ERIKA**

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**CEDRE Information Conference**  
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# SUMMARY

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- **Technical context**
- **Treatment process**
- **Disposal, enhancement of by-products**
- **Schedule planning**
- **Main lessons learned**

# TECHNICAL CONTEXT

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- Big variety and quantities of waste : sundry materials (stones, plastics, plants) of different sizes and textures making handling difficult and pre-treatment mandatory
- Big pressure to complete
- Need a large area (4 hectares) to install treatment centre, handle products and store waste and by-products (limited capacity for enhancement)
- Maximum safety for staff with little experience of working on “ production lines ” in the oil industry
- Refinery nearby : fuel supplies, treatment of oil and residual waters
- Centre operated 16 hours a day (2x8hr shifts) 5 days a week with a staff of 70 and installed power generation capacity of 3 megawatts



# TREATMENT PROCESS

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**Centre operated 16 hours a day (2x8hr shifts) 5 days a week with a staff of 70 and installed power generation capacity of 3 megawatts**

# OVERALL QUANTITIES (TONNES)

<u>Input</u>		<u>Output</u>	
• Soiled materials	267 158	• Scrap iron	155
• Lime and chemicals	6 573	• Waste	5 371
• Gas oil	48 794	• Clay sediment	63 591
• Industrial water	57 845	• Aggregates	200 838
• Rainwater	69 406	• Oil	49 121
		• Persistent emulsions	1 493
		• Process water	124 167
		• Losses	5 041



# ENHANCEMENT / DISPOSAL OF BY PRODUCTS

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**Systematic search for ways of enhancing collected and treated waste**

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|-----------------|---|---|
| • Scrap iron    | → | • Recycled  |
| • Waste         | → | • Incinerated in a household refuse incineration plant where steam and electricity are produced |
| • Aggregates    | → | • Civil engineering applications  |
| • Clay sediment | → | • Raw material for cement factories   |
| • Oil           | → | • Repressed in the refinery   |
| • Water         | → | • Used by the refinery  |

**By products were used as mixtures by other outlets with no effect on gas release**



**TOTAL**



# MAIN LESSONS LEARNED

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- **Need for suitable, if not dedicated transport logistics**
- **Extensive oil degradation in the storage facilities**
- **Ensure sufficient running-in time and find external outlets**
- **Fine grain sediment was more abundant than expected,  $\alpha$  emulsion - sludge**
- **Extensive on-line analysis (on site lab) hard to sample (waste) and difficulties finding methods (fuel percentage in oil)**
- **By-products are increasingly costly to use owing to competition**
- **Indispensable technical and theoretical knowledge required even if a lot of knowledge is acquired on the spot every day**





# CONCLUSIONS

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- **TOTAL was committed to pumping the wreck, cleaning the coastline, storing and treating the waste (contract signed with the State)**
- **Waste treatment was a success but was made difficult because of:**
  - ✓ choice of processes enabling by-products to be used afterwards
  - ✓ development of an innovative treatment process in a prototype facility
  - ✓ special measures needed to guarantee safety and to protect the environment
  - ✓ conducted under government supervision whilst informing the public at large
  - ✓ was approximately 80 million euro