Environmental regulatory and legal frameworks and institutions associated with decommissioning

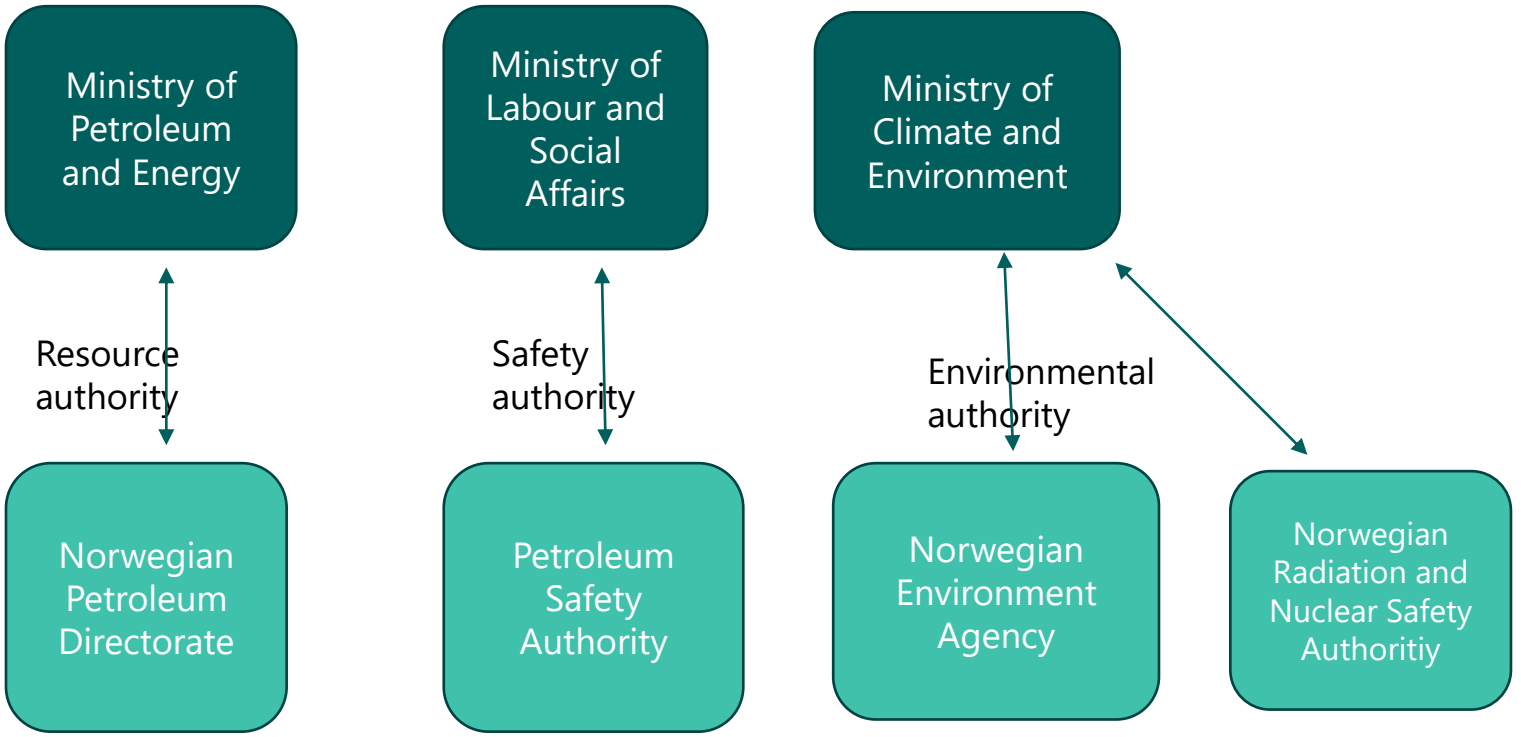
Norway: decommissioning is an established industrial activity

- Decommissioning includes the offshore activities and several licensed onshore yards for dismantling and material management
- Regulations are in place and allow for decisions and provisions on a case-to-case basis
- The licensee is responsible for disposal of installations in accordance with national regulations/policy and, if necessary, remediation of contaminated sites

Photo: Aker Stord

Governing the petroleum sector

MPE has the overall responsibilty for the petroleum sector



Key institutions in regulating decommissioning activities

Tasks and responsibilities in decommissioning activities

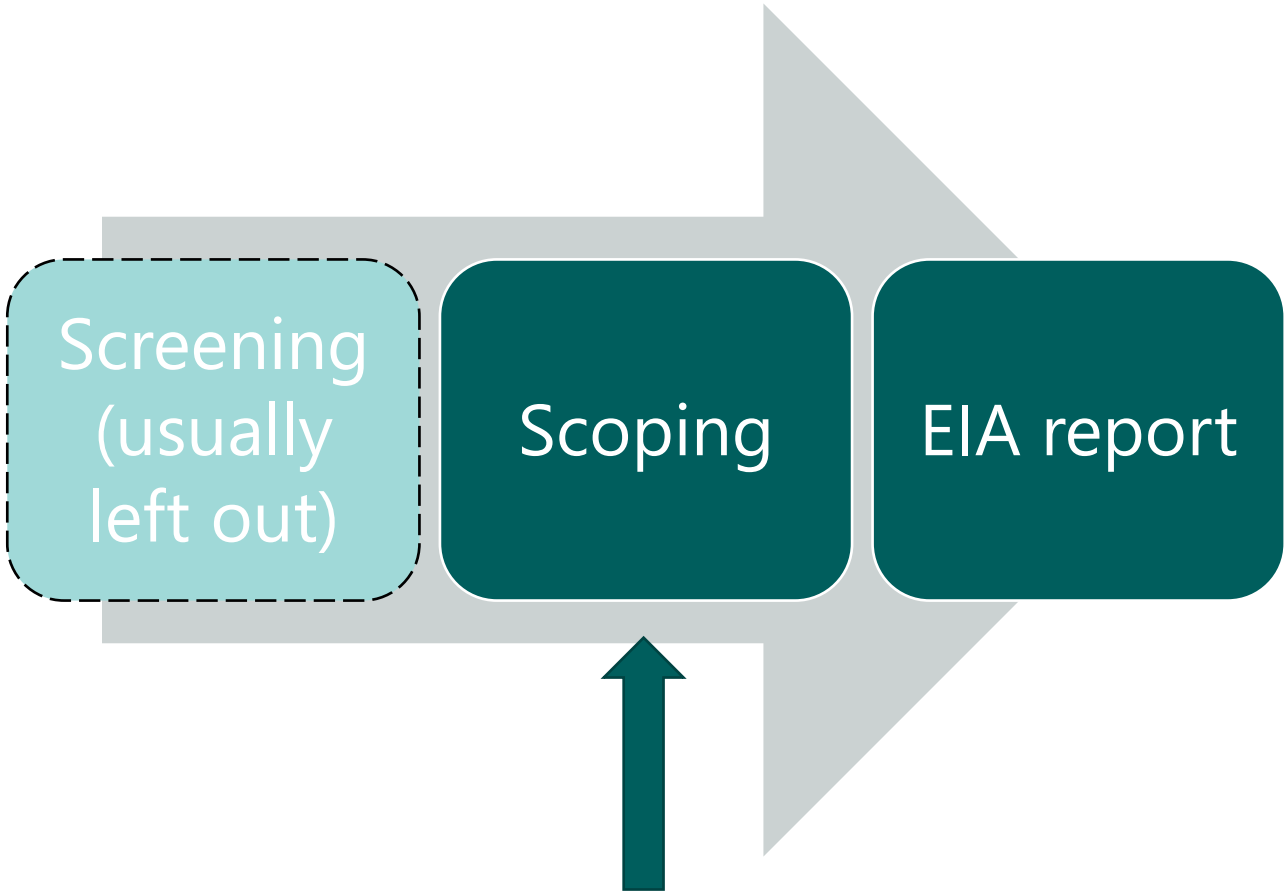
Norwegian Environment Agency

- Input during the EIA-stakeholder processes
- Enforce and develop HSE-regulations
- Issue discharge permits, incl. oil/chemical spill response preparedness
- Compliance monitoring
- Ensure environmental monitoring data
- Follow up on International environmental conventions

The international legal framework is the foundation for national policy

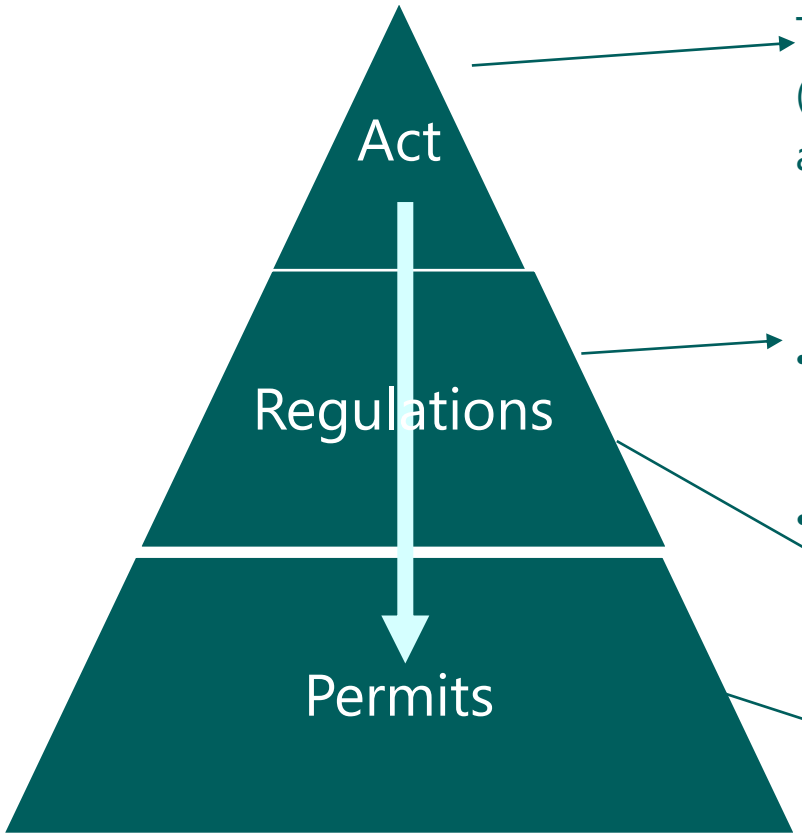
- The OSPAR-convention (regional, protecting the marine environment in the North-East Atlantic Ocean)
- IMO-guidelines on the Removal of Offshore Installations and Structures (1989)
- The London-convention and London-protocol (global) regulate dumping from platforms
- The Basel-convention regulates transboundary transport of hazardous waste
- Hong-Kong convention (safe and environmental sound recycling of ships)

The EIA process



The NEA emphasises environmental issues and possible mitigation measures expected for the EIA report to address thoroughly

Legal framework on the environment



The Pollution Control Act
(and GHG emission trading Act
and Nature Diversity Act)

- HSE-regulations (for the petroleum sector)
  http://www.psa.no/regulations/category216.html
- Waste regulations (apply to all sectors)

Site specific and activity specific permits
with conditions

HSE regulations governing the petroleum industry

Applies for all petroleum activities

Risk- and performance-based requirements, such as;

- risk reduction principles
- safety and environmental management systems
- transparency and obligations on notifying, reporting etc

Fall within jurisdiction of both PSA and NEA, environmental provisions such as;

- testing, documentation and class of chemicals
- discharges of oil-containing water
- environmental monitoring
- oil spill contingency

The operator has to apply for a permit for polluting activities related to decommissioning

- This provides the environmental authorities an independent role in regulating and following up on polluting activities
- The permit conditions are enforceable

  Similarly, the operator shall apply for a consent from the Petroleum Safety Authority (PSA)
- NEA and PSA coordinate between themselves the timing of issuing the permit and the consent

Permit conditions

- Plugging and abandonment !
- Emptying and cleaning of pipelines
- Discharges of structure water
- Cleaning of process equipment and topside

Chemicals, discharges

- Waste management and disposal
- Dredging and relocation of contaminated sediments !
- Sand blasting/cutting (discharges of cutting sands and paint residues)
- Monitoring and reporting !
- Removal of marine growth !

PP&A: to avoid any future leakages of HC

- Regulations: operator's responsibility to ensure barriers
- Norsok standards (operators standards)
- New technologies to reduce costs are developed

Petroleum Safety Authority

- Disposal of old drilling fluids (discharge, injection, transport to land
- Discharge of cement and chemicals
- Emissions to air (exhaust gases)
- Future monitoring programs

Environment Agency

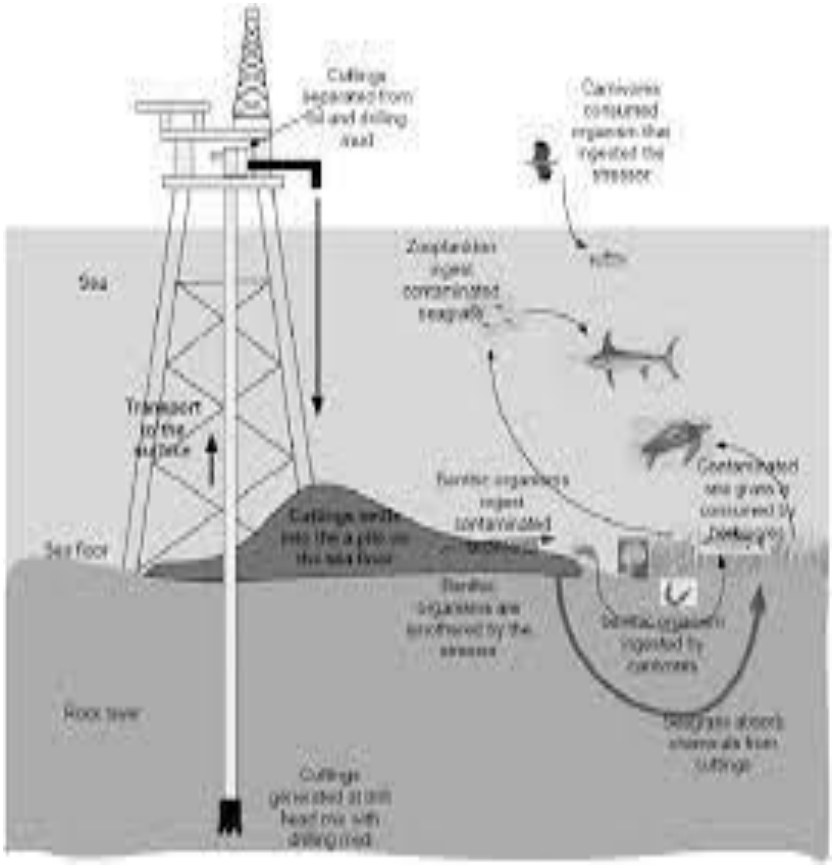
Collaboration on compiling knowledge on methane leakages from the seabed (shallow gas) and wells

Case: Veslefrikk A and B

- Cessation plan approved
- CoP planned in 2022
- NEA has received the application for a discharge permit for decom activities
- Public consultation round undertaken (by NEA)

Installation B: towed to shore in 2022
Installation A: cold phase from 2022 and removal finalised by 2027

Case: Veslefrikk A and B



Cuttings piles from earlier drillings with OBM

Heavy contamination

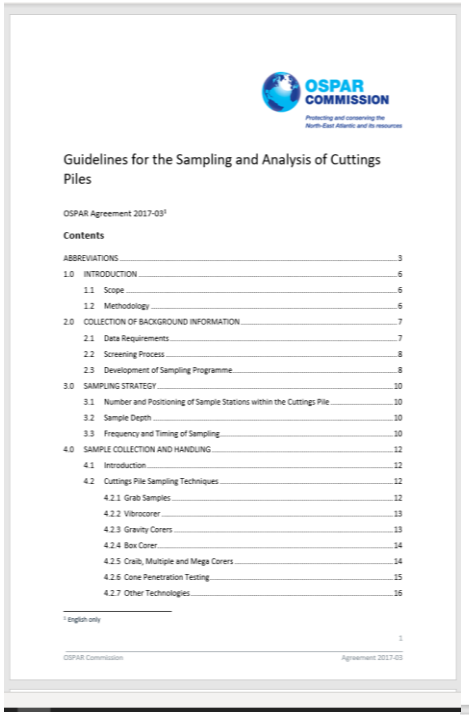
Dregding is necessary to access the steel strutures to be cut

Options assessed in the application:

- Treatment and recovery onshore
- Treatment and disposal onshore
- Injection into wells (offshore)
- Bioremediation (on site)
- Covering (on site)
- Leave for natural degradation (on site)

OSPAR guidelines on the assessment of old cuttings piles

- OSPAR (2006/5): criteria for evaluating the management strategy and sampling and monitoring guidelines
- Assessments often conclude that impact on the environment is less when the piles remain at the seabed.
- But decom activities disturb
- Assess disposal options



OSPAR COMMISSION

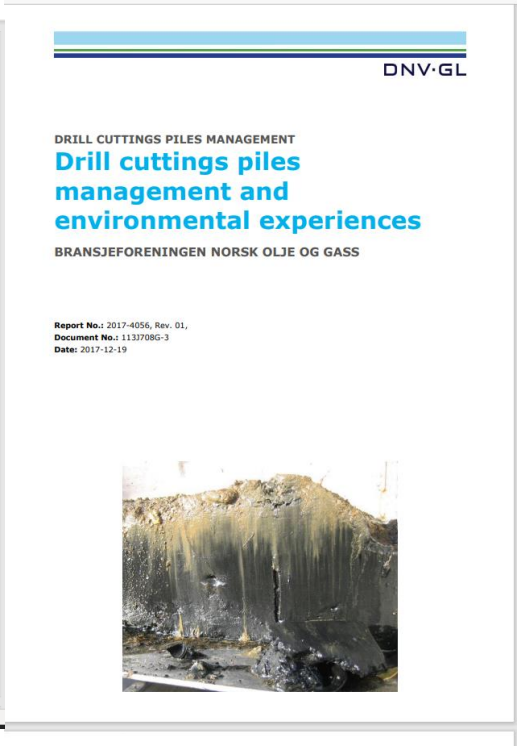
Protecting and conserving the North-East Atlantic and its resources

Guidelines for the Sampling and Analysis of Cuttings Piles

OSPAR Agreement 2017-03[1]

Contents

[1] English only



DNV·GL

DRILL CUTTINGS PILES MANAGEMENT

Drill cuttings piles management and environmental experiences

BRANSJEFORENINGEN NORSK OLJE OG GASS

Report No.: 2017-4056, Rev. 01,
Document No.: 1133708G-3
Date: 2017-12-19

If leakage rate or area is at a certain size, BAT/BEP for the cuttings pile shall be determined

Invasive species: sea vomit

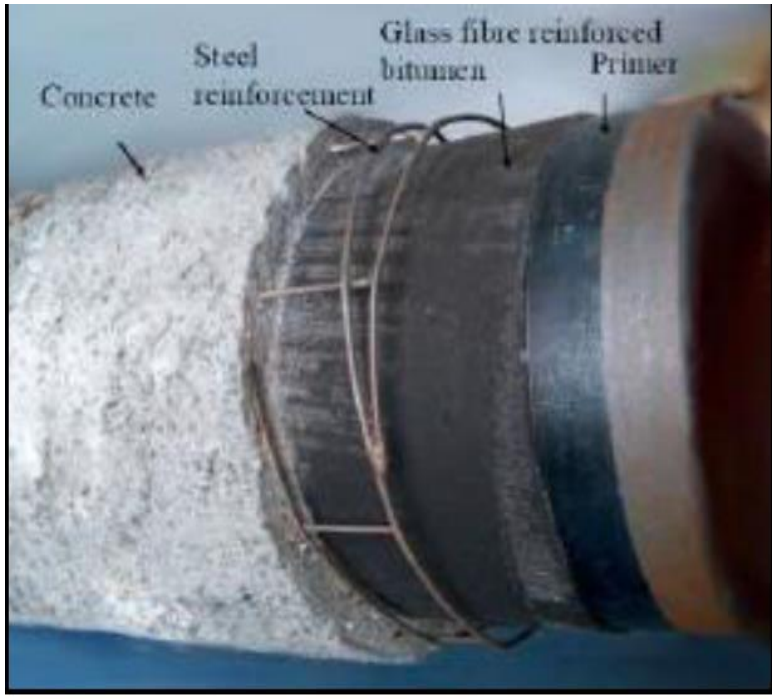
Photo: Rolf Svendsen, MUST

Discovered in Norway first time autumn 2020 (in a harbour)

Probably arrived by having grown on a ship hull

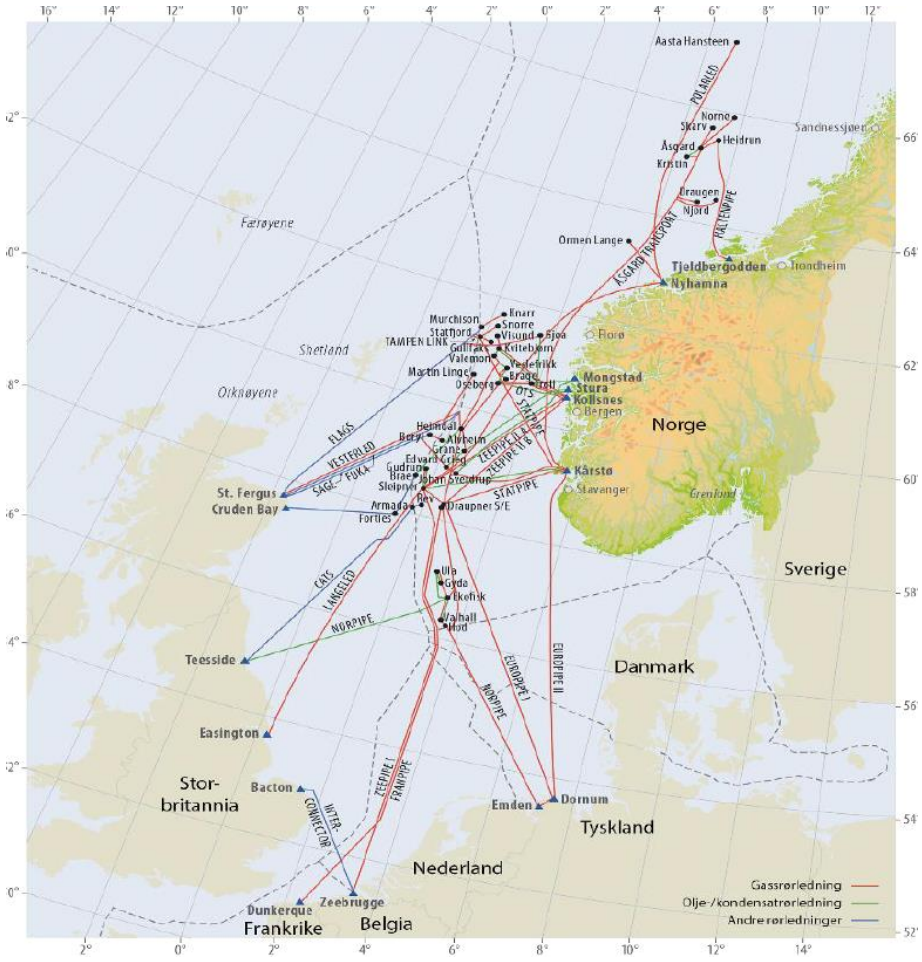
Inventory of species growing on a particular installation should be undertaken to assist decisions on how and where marine growth shall be removed

Pipelines: leave or remove?



- Pipelines may still contain traces of contaminants after cleaning. The contaminants will leak to the environment when the cables and pipelines eventually degrade
- Contribute to (marine) littering
- Materials (steel) in pipelines may be recovered ?
- Carbon footprint and high costs for removal

OSPAR: pipelines and cables



- OSPAR leaves policy on decommissioning and disposal of pipelines and cables to the national authority

- Norwegian policy established in a White Paper nr 47 (1999-2000)

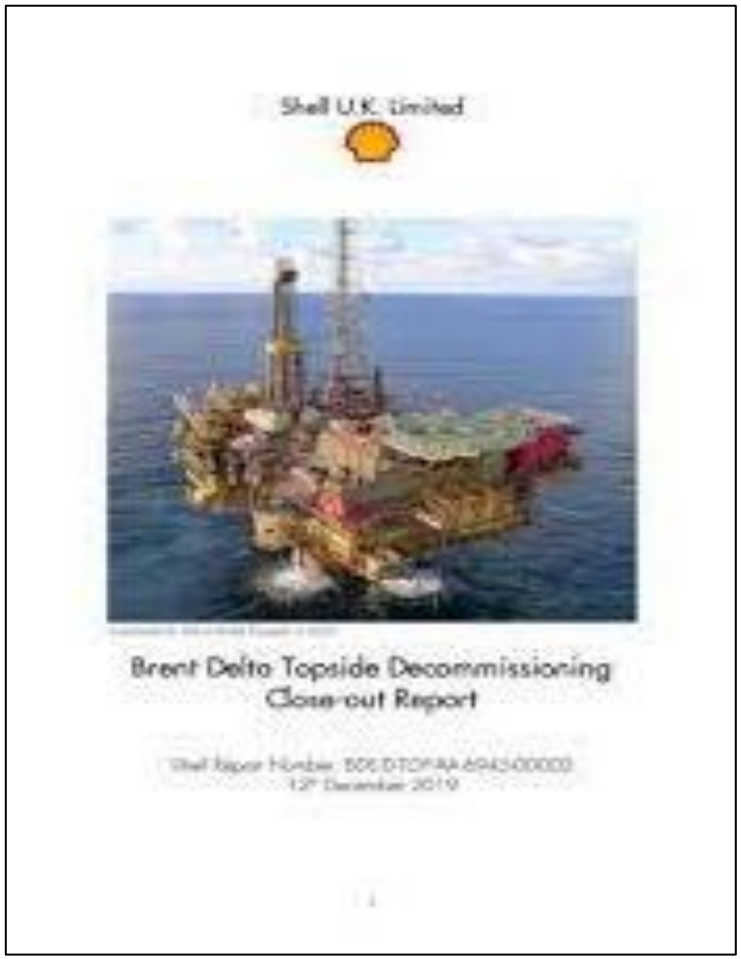
Monitoring programs

- The HSE-regulations require (as a minimum):
- Monitoring the sediments (every third year during the production phase) shall be continued for six years after the production has ceased
- Do we need long-term monitoring requirements?

Inspections and audits

- NEA has general duty and right to undertake compliance monitoring by e.g. inspections and audits
- Relevant in the decommissioning phase as well as in the production phase
- Practical obstacles (safety issues) with offshore visits, but other approaches possible

Verification of completed clean up and remediation



Example from UK ‘close out report’ describes practice in UK

We consider to adopt the UK approach

Dismantling onshore

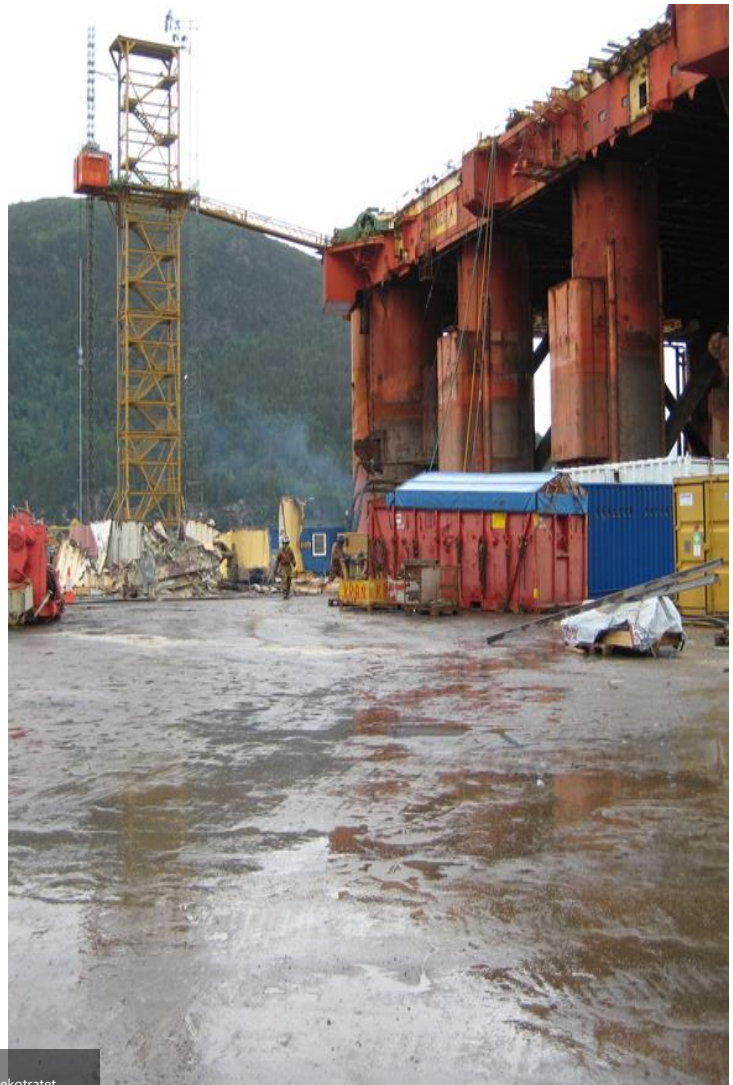


Foto Miljødirektoratet

Recycling of marine installations are considered to be **waste treatment.**

Facilities must have **a permit** to recycle marine installations.

The Norwegian Environmental Agency is the authority to issue this permit

The permit stipulates operating conditions

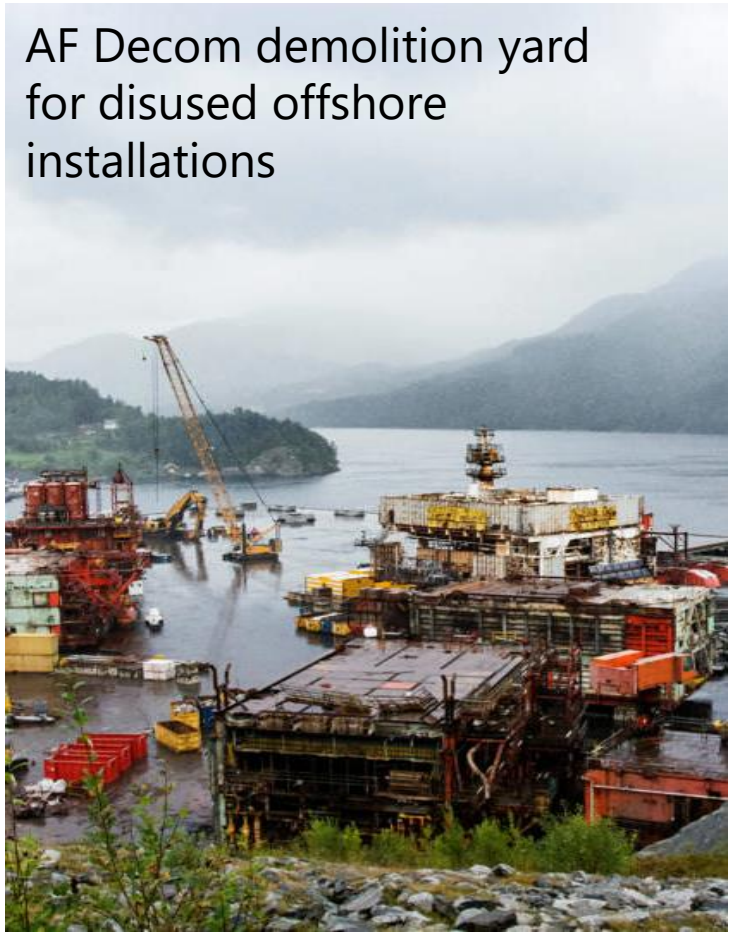


Photo: Ellen Marie Hagevik, Medvind24

- Discharges to sea, emissions to air, noise and odour and to manage marine growth
- Plan for recovering materials received and the intermediate storage of waste
- Inventories of received and delivered waste fractions and metals, and yearly reporting
- Monitoring programs
- Management programs

The European ship recycling list

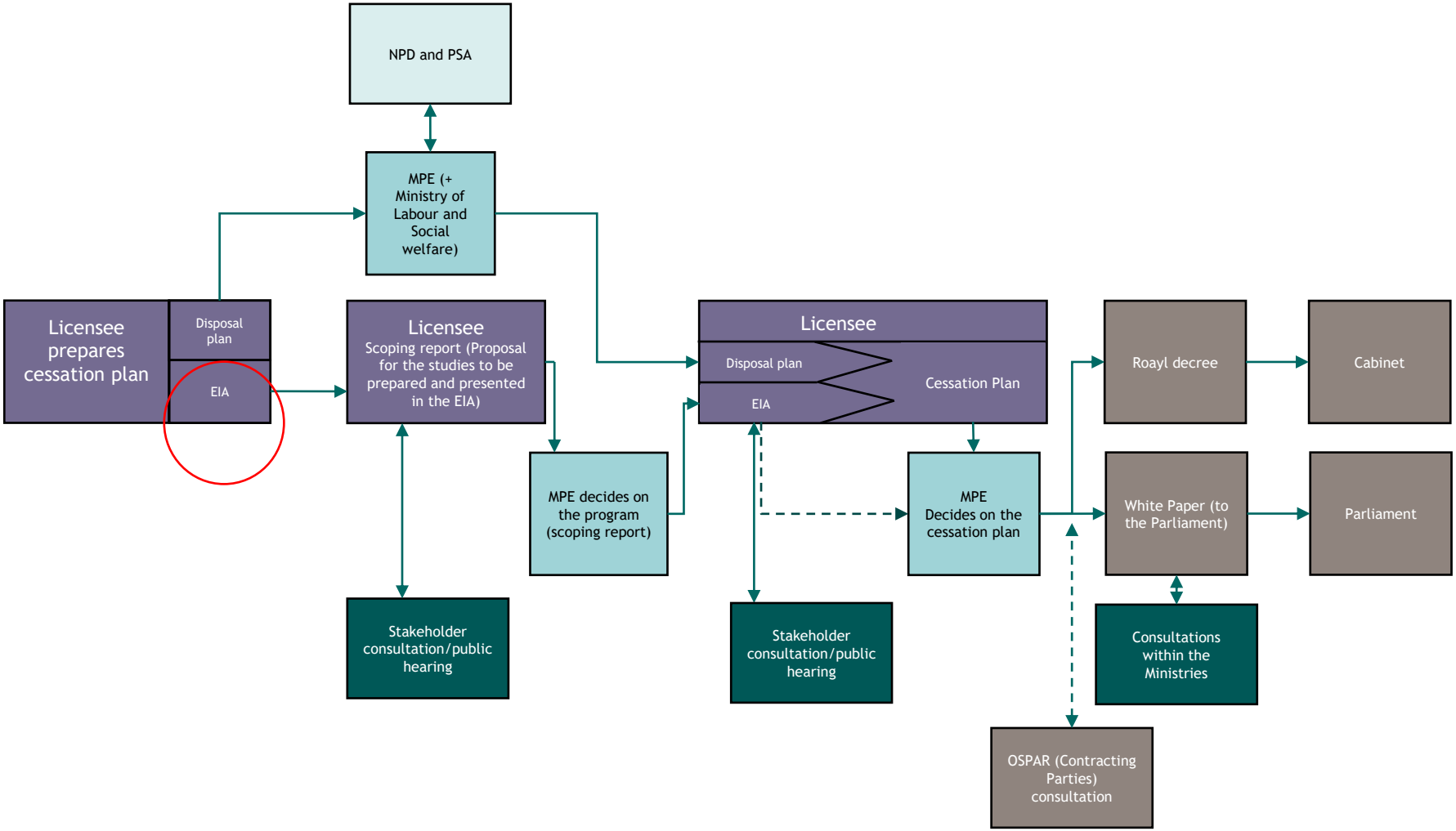
- Prevent “beaching” of vessels with EU/EEA flag
- European list of approved ship recycling facilities
- Hong-Kong convention guidelines
- Implemented in Norwegian regulation in December 2018

To sum up: key points in our regulatory regime

- Decommissioning shall be described in the plans for new field developments
- Clear policy (on removal, recycling and remediation) provides predictability for the licencees
- The Environmental Authority has legal tools for stipulating conditions on polluting activities closer to the operational start than the EIA process
- Our regulations are not prescriptive with regard to technical solutions, but state clearly the responsibility of the licensee
- Established system for enforcement of regulations

Norwegian
Environment
Agency

Process towards approval of the cessation plan

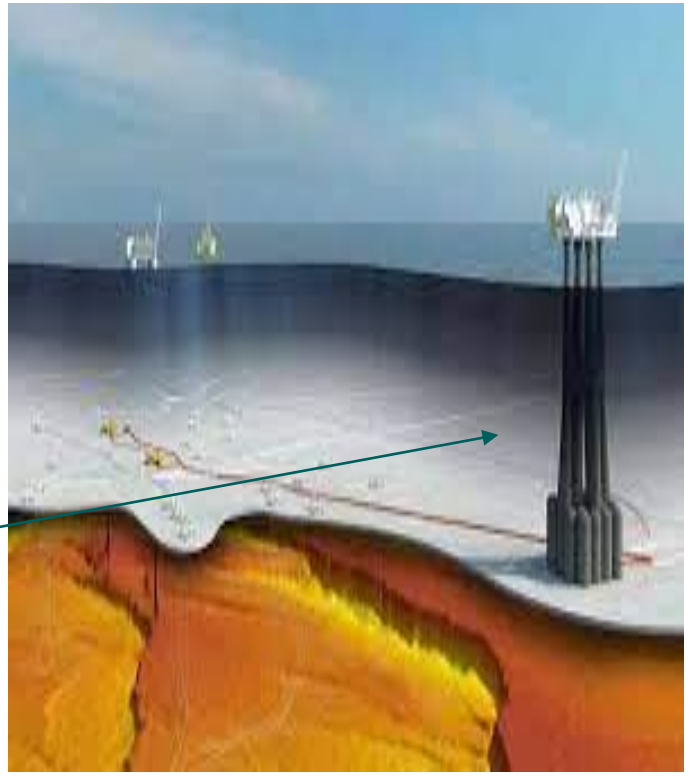


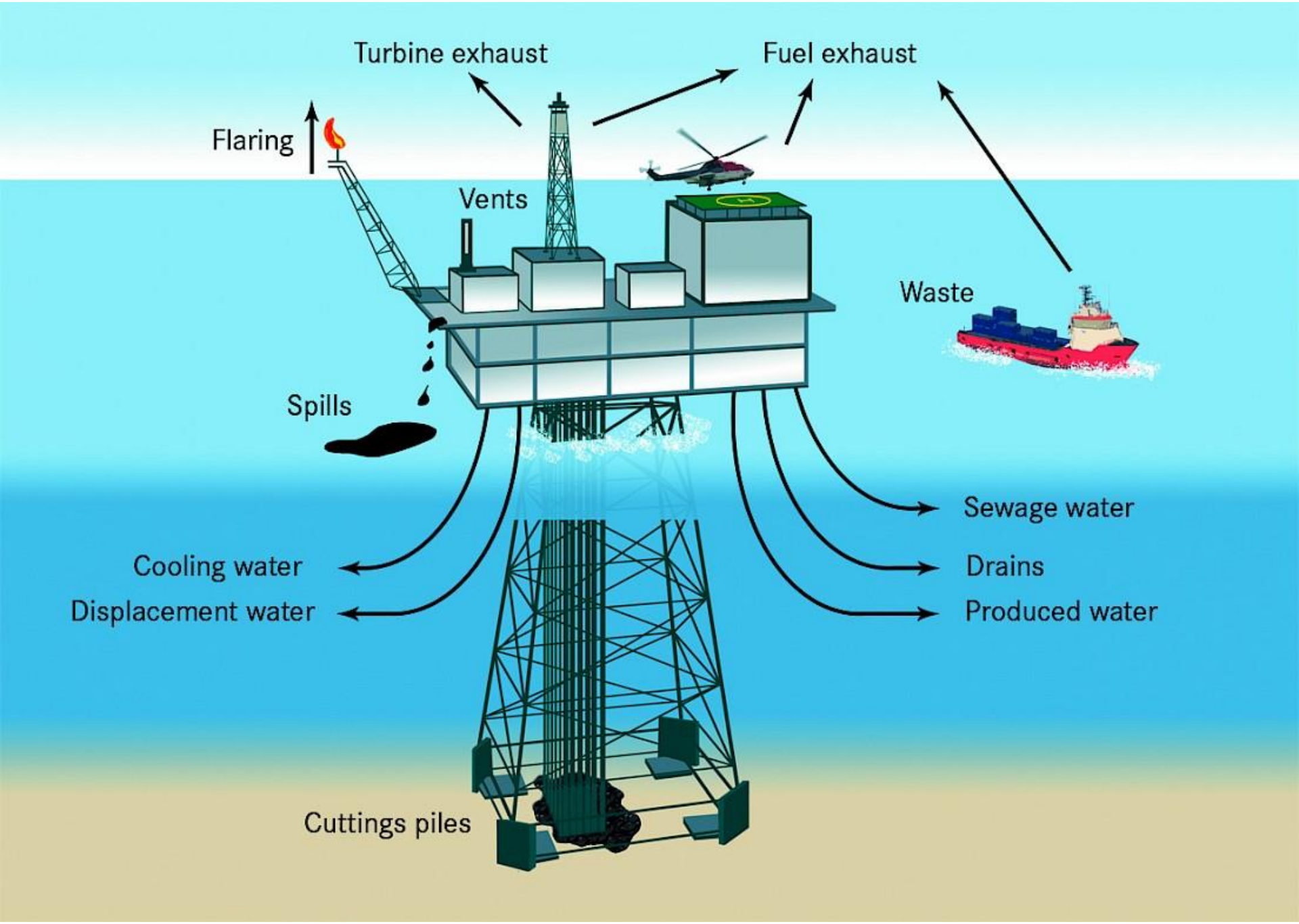
OSPAR Decision 98/3

Forbidding the dumping and the leaving wholly or partly in place disused offshore installations in the maritime area covered by the OSPAR convention.

Derogation can be made for:

- Bottom frame of steel installations weight (>10 000 tons)
- Fixed concrete installations
- Floating concrete installations
- Installations damaged by exceptional incidents so that removal is dangerous




Turbine exhaust
Fuel exhaust
Flaring
Vents
Waste
Spills
Sewage water
Cooling water
Drains
Displacement water
Produced water
Cuttings piles