



# Noen utfordringer ved nye BAT-konklusjoner

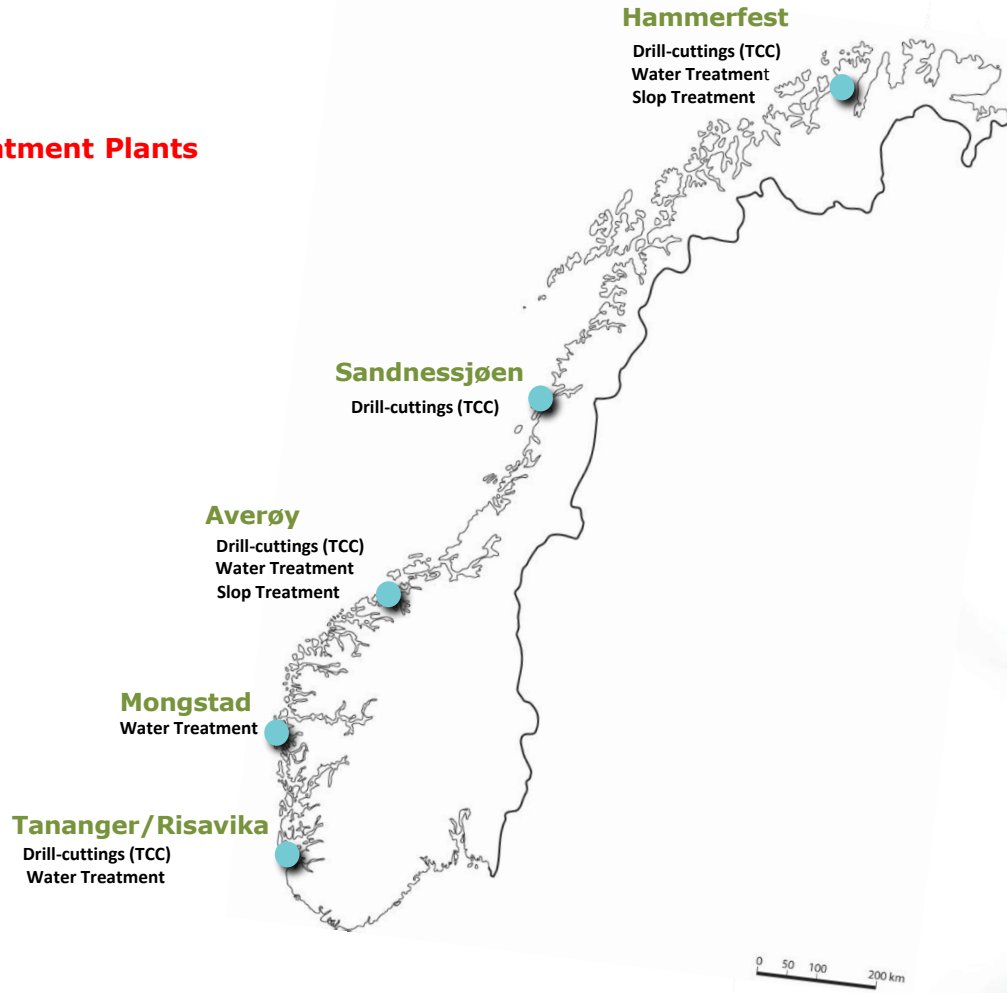
Seminar for farlig avfallsanlegg med tillatelse fra Miljødirektoratet

Onsdag 3.mai 2017

Håvard Nateland, SAR

## SAR Treatment Plants

Norway





Water- based liquid waste:

Waste consisting of aqueous liquids, acids/alkali or pumpable sludges (e.g. emulsions, waste acids, aqueous marine waste) which is not liquid biodegradable waste.

Liquid biodegradable waste:

Waste of biological origin with a relatively high water content (e.g. fat separator contents, organic sludges, catering waste).

Olje til gjenbr./gjenv.

Tørrstoff og vannfraksjon til sjø

Kaks – til offshore behandling

Injeksjon



Kaks – til onshore behandling

Onshore mottak av kaks

Termisk rensing av avfall

Tørrstoff til deponi/ materialgjenvinning

Olje til gjenbr./gjenv.

Spyling - skipper

Kondensert vann

Slop – til onshore behandling

Onshore mottak og skilling av slop (vann/slam)

Kjemisk/ biologisk rensing av vannfase

Slamfase til behandling

Olje til gjenvinning

Tankvask på båt

Utskilt slamfase

Vannfase

Utslipp

Slop – offshore behandling

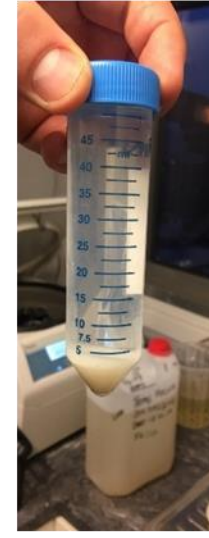
Onshore mottak av slam

Kjemisk/ mekanisk rensing av slamfase

Tykkslam til behandling

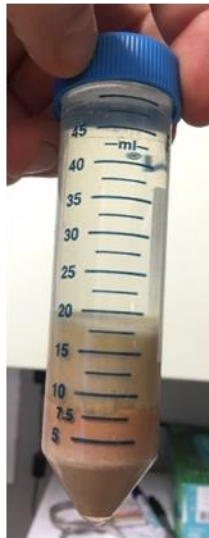
Olje til gjenvinning

Vann til sjø



Salinitet 14 g/l

Salinitet 26 g/l



TOC 1538 mg/l  
Salinitet 54 g/l

TOC 2993 mg/l  
Salinitet 266 g/l

TOC 4419 mg/l  
Salinitet 19 g/l

TOC 16706 mg/l  
Salinitet 88 g/l

TOC 26000 mg/l



Salinitet 48 g/l

Salinitet 169 g/l



The calculation of the average abatement efficiency referred to in these BAT conclusions does not include, for COD and TOC, initial treatment steps aiming at separating the bulk organic content from the water-based liquid waste, such as evapo-condensation, emulsion breaking or phase separation.

All BAT-AELs for emissions to water apply at the point where the emission leaves the installation.



## Nye BAT-krav - mest aktuelle parametere for behandling av offshore avfall

- TOC og COD
- Nitrogen og fosfor
- TSS
- Olje
- Metaller
- Fenoler



Table 6.3 in Revised Draft 1

### Table 6.3 – BAT-AELs for direct discharges to water and associated monitoring (45/64) – BP 1.8.4, 1.13.6.4 and 1.5.2

Substance/ Parameter	BAT-AEL (Monthly average) <sup>(1)</sup>	Waste treatment process to which the BAT-AEL applies
Total organic carbon (TOC) <sup>(2)</sup>	10-100 mg/l <sup>(3bis)</sup> <sup>(3ter)</sup>	<ul style="list-style-type: none"> <li>Treatment of water-based liquid waste</li> </ul>
<p><sup>(3bis)</sup> The upper end of the range may not apply when:</p> <ul style="list-style-type: none"> <li>the abatement efficiency is <math>\geq 95\%</math> as a daily rolling yearly average; and</li> <li>the waste input shows the following characteristics: TOC &gt; 2 g/l (or COD &gt; 6 g/l) as a daily average and a high proportion of refractory organic compounds (i.e. which are difficult to biodegrade);</li> <li>the chloride concentration in the waste input exceeds e.g. 5 g/l.</li> </ul> <p><sup>(3ter)</sup> This BAT-AEL may not apply to plants treating drilling muds/cuttings.</p>		





Table 6.3 in Revised Draft 1

**Table 6.3 – BAT-AELs for direct discharges to water and associated monitoring (46/64) – BP 1.8.4, 1.13.6.4 and 1.5.2**

Substance/ Parameter	BAT-AEL (Monthly average) <sup>(1)</sup>	Waste treatment process to which the BAT-AEL applies
Total organic carbon (COD) <sup>(2)</sup>	30–300 mg/l <sup>(3bis)</sup> <sup>(3ter)</sup>	<ul style="list-style-type: none"> <li>Treatment of water-based liquid waste</li> </ul>
<sup>(3ter)</sup> This BAT-AEL may not apply to plants treating drilling muds/cuttings		

## Table 6.3 in Revised Draft 1

## Table 6.3 – BAT-AELs for direct discharges to water and associated monitoring (51/64) – BP 1.8.4, 1.13.6.4 and 1.5.2

Substance/ Parameter	BAT-AEL (Monthly average) <sup>(1)</sup>	Waste treatment process to which the BAT-AEL applies
Total phosphorus (Total P)	1– <del>5</del> 3 mg/l <sup>(3ter)</sup>	• Treatment of water-based liquid waste
<sup>(3ter)</sup> This BAT-AEL may not apply to plants treating drilling muds/cuttings.		

**Table 6.3 – BAT-AELs for direct discharges to water and associated monitoring (49/64) – BP 1.8.4, 1.13.6.4 and 1.5.2**

Substance/ Parameter	BAT-AEL (Monthly average) <sup>(1)</sup>	Waste treatment process to which the BAT-AEL applies
Total nitrogen (Total N)	10–60 mg/l <sup>(3ter)</sup> <sup>(7)</sup> <sup>(8)</sup>	• Treatment of water-based liquid waste

<sup>(3ter)</sup> The BAT-AEL only applies when biological treatment of waste water is used. ~~When nitric acid is the main waste input, this BAT-AEL does not apply provided that the abatement efficiency is  $\geq 90\%$  as a daily average.~~

<sup>(7)</sup> The higher end of the range may not apply when the temperature of waste water is low (e.g. below 12 °C).

<sup>(8)</sup> The BAT-AEL may not apply in the case of high chloride concentrations (i.e. around 10 g/l in the waste input).

## Regneeksempel

Volum, m <sup>3</sup>	TOC i vann inn, mg/l	Mengde organisk, tonn	Mengde organisk stoff utslipp i kg ved rensgrad 95%	Mengde organisk stoff utslipp i kg ved fast grense, 100 mg/l
1000	2000	2	100	100
1000	4000	4	200	
1000	10000	10	500	
1000	20000	20	1000	





## Oppsummert

- Økte kostnader knyttet til teknologi som må investeres i for å tilfredsstille nye utslippskrav
- Økte kostnader til analyser
- Lik forvaltning av rensesgrad
- Like konkurransevilkår generelt
- Involvering i prosessen



**Takk for oppmerksomheten**