

BCT, BAT and NSPS levels of control because, as it is widely practiced throughout the industry, it is both economically achievable and technologically available. Zero discharge for NSPS would not cause a barrier to entry because, since it is equal to current practice, it will impose no cost. Zero discharge will have negligible economic impacts on the industry. As zero discharge reflects current practice, there are negligible incremental non-water quality environmental impacts from this option. Since proposed BCT would be set equal to the proposed BPT, there is no cost of BCT incremental to BPT. Therefore, this option passes the BCT cost reasonableness tests.

The technology basis for compliance with PSES and PSNS is the same as that for BAT and NSPS. EPA proposes pretreatment standards for produced sands equal to zero discharge because, like drilling fluids and cuttings, their high solids content would interfere with POTW operations. Because EPA is not aware of any produced sands being sent to POTWs, this requirement is not expected to result in operators incurring costs. Zero discharge for PSNS would not cause a barrier to entry for the same reasons as discussed above for NSPS. There are no additional non-water quality environmental impacts associated with this requirement because it reflects current practice.

#### D. Deck Drainage

##### 1. Waste Characterization

Deck drainage consists of contaminated site and equipment runoff due to storm events and wastewater resulting from spills, drip pans, or washdown/cleaning operations, including washwater used to clean working areas. Deck drainage is generated during both the drilling and production phases of oil and gas operations. Currently, approximately 11.5 million bpy of deck drainage are discharged by facilities in the coastal subcategory. EPA estimates that 112,000 pounds of oil and grease are discharged in this wastestream annually. In addition to oil, various other chemicals used in drilling and production (actual hydrocarbon extraction) operations may be present in deck drainage. Limited treated effluent data are available for this wastestream, however, EPA has identified the presence of organic and metal priority pollutants in deck drainage. EPA's analytical data for deck drainage comes from the data acquired during the development of the Offshore Guidelines. EPA conducted a three facility sampling program (described in Section V of the Offshore Technical

Development Document) during which samples were taken of untreated deck drainage. Eight of the toxic metals were detected, most notably lead (ranging in concentration from 25 - 352 ug/l) and zinc (ranging in concentration from 2970-6980 ug/l). Priority organics were also present including benzene, xylene, naphthalene and toluene. Other nonconventional pollutants found in deck drainage include aluminum, barium, iron, manganese, magnesium and titanium.

The content and concentrations of pollutants in deck drainage can also depend on chemicals used and stored at the oil and gas facility. An additional study on deck drainage from Cook Inlet platforms, reviewed during development of the Offshore Guidelines, showed that discharges from this wastestream may also include paraffins, sodium hydroxide, ethylene glycol, methanol and isopropyl alcohol. (Dalton, Dalton, and Newport, Assessment of Environmental Fate and Effects of Discharges from Oil and Gas Operations, March 1985.)

##### 2. Selection of Pollutant Parameters

EPA has selected free oil as the pollutant parameter for control of deck drainage. The specific conventional, toxic and nonconventional pollutants found to be present in deck drainage are those primarily associated with oil, with the conventional pollutant oil and grease being the primary constituent. In addition, other chemicals used in the drilling and production activities and stored on the structures have the potential to be found in deck drainage. EPA believes that an oil and grease limitation together with incorporation of site specific Best Management Practices, as required under the stormwater program and as discussed below, will control the pollutants in this wastestream.

The specific conventional, toxic, and nonconventional pollutants controlled by the prohibition on the discharges of free oil are the conventional pollutant oil and grease and the constituents of oil that are toxic and nonconventional pollutants (see previous discussion in Section VI.B. describing the chemical constituents of oil). EPA has determined that it is not technically feasible to control these toxic pollutants specifically, and that the limitation on free oil in deck drainage reflects control of these toxic pollutants at the BAT and BADCT (NSPS) levels.

##### 3. Control and Treatment Technologies

###### a. Current Practice.

BPT limitations for deck drainage prohibit the discharge of free oil. All

equipment and deck space exposed to stormwater or washwater are surrounded with berms or collars. These berms capture the deck drainage where it flows through a drainage system leading to a sump tank. Initial oil/water separation takes place in the sump tank which is generally located beneath the deck floor or underground at land-based operations. Effluent from the sump tank may be directed to a skim pile, where additional oil/water separation occurs. (The skim pile is essentially a vertical bottomless pipe with internal baffles to collect the separated oil.)

The deck drainage treatment system is a gravity flow process, and the treatment tanks generally do not require a power source for operation. Thus, deck drainage generated at operations located in powerless, remote situations, (such as satellite wellheads) can be effectively treated.

The difficulties in obtaining a representative sample of deck drainage effluent (due to their submerged or underground location) preclude the use of the static sheen test for this wastestream. Thus, free oil is measured by the visual sheen test. Deck drainage treatment is discussed in more detail in the Coastal Technical Development Document.

###### b. Additional Technologies Considered.

EPA knows of no additional technologies for the treatment of deck drainage. However, EPA, as described in the preceding section, has determined that deck drainage could in some circumstances be commingled with either produced water or drill fluids and thus, could become subject to the limitations imposed on these major wastestreams. EPA has also considered requiring best management practices (BMPs) on either a site-specific basis or as part of the Coastal Guidelines (See discussion under part 6.b. in this Section).

##### 4. Options Considered

EPA has developed two options for the control of deck drainage. These are (1) establish limitations equal to BPT; or (2) establish limitations for the "first flush" of deck drainage equal to those for the major wastestreams it can be commingled with, and limitations equal to BPT after the first flush.

In addition to BPT technology described above, EPA examined additional treatment control options based on current industrial practices. The 1993 Coastal Oil and Gas Questionnaire as well as the industry site visits reveal that deck drainage is often commingled with produced waters prior to discharge or injection. Because