P.O. Box 515429
Dallas, Texas 75251
Ph: 972 669 3390
Fax: 469 241 0896
Email: oseicorp@msn.com
URL www.osei.us

February 4, 2016

OSE II ELIMINATING THE ENVIRONMENTAL FOOT PRINT WHILE REDUCING COSTS ASSOCIATED WITH DRILLING MUD, DRILLING MUD CLEAN UP, RIG WASHING, RIG OPERATIONS AND EMERGENCY OIL SPILL RESPONSE FROM OIL RIGS

Offshore and Onshore Drill Cuttings Clean Up

Emergency Response Clean Ups For Rigs

Rig Wash Clean Up and Over Flow Clean Up

OSE II Removes Oil Base Mud From Drill Cuttings

The OSEI Corporation can help reduce the costly expense associated with oil base drill cuttings. Even water base muds can incorporate diesel and formation fluids that limit their direct discharge to the land or sea.

Oil Spill Eater II (OSE II) is a unique first response bioremediation agent, safe and effective on all types of oil and environments and is completely non-toxic. OSE II breaks down the molecular structure of hydrocarbons through the effects of bio surfactants and over 156 types of enzymes.

The US EPA, all branches of the US military and independent laboratory tests prove that OSE II remediates hydrocarbons. We have to state OSE II is listed on the US EPA NCP List (see link with Letter, and notices http://osei.us/ncp-listing-information-and-disclosures) which means OSE II can legally be used on US Navigable waters, which includes ponds, creeks, streams, rivers, Lakes, oceans or seas. OSE II is being used in over 100 countries globally.

Once OSE II comes in contact with oil, it stays attached; remediation begins and will continue to completion. The cuttings, with typically 4-8% oil, are discharged from the shakers and captured in a skiff, where they will be submerged in an OSE II mixture at a ratio of 50 to 1(untreated water to OSE II). The oil will separate from the drill cuttings in 10-15 minutes depending on temperature. The volume of OSE II mixture should be sufficient to maintain 1-2" level above the cuttings. The entire container can

then be discharged to the sea floor or on land after approximately 14 to 21 days since the toxicity level has been substantially reduced and no visible sheen will be present.

Whole mud can be captured in a separate skiff. The OSE II mixture is added in a volume equal to the oil volume. A small air hose submerged in the container will add O_2 and increase the remediation process. In approximately 14 to 21 days or so the container will be free of hydrocarbons, and the contents can be returned to the sea (or discharged on land) without any adverse effects to the environment. OSE II will also eliminate the flammability of fuels on surface spills in approximately 3 minutes, which becomes a safety feature for rigs as well.

These are simple instructions that will give you an idea of how OSE II can help solve the cuttings and drilling mud disposal problems associated with your company's operations.

*OSE II can prepare protocols for specific applications if requested.

ONSHORE AND OFFSHORE DRILL CUTTINGS DISPOSAL REMEDIATION WITH OSE II

ONSHORE

Regulations / Current Practices - Regulations vary based on country and even on the specific rig location, but generally it is safe to assume that OBM (oil base mud) or SBM (synthetic base mud) cuttings cannot be discarded at the drilling location. The drill cuttings must be trucked to a landfill or a waste management company where the cuttings can be treated and reused or discarded. This practice is often very expensive and influences the entire drilling program. To avoid this additional expense, oil companies often chose to drill the well with a water base fluid that presents less environmental concerns. Unfortunately, this often increases the risk of drilling problems since water base fluids do not provide the inhibitive properties of an oil base mud.

OSE II Advantages – OSE II can be applied to oil base or synthetic base cuttings eliminating all oil toxicity. When the cuttings are exposed to OSE II (50/1 mixture, water/OSE II) toxicity is significantly reduced in only a few hours). OSE II converts the oil to CO_2 and water. The cuttings are then safe to deposit in any landfill or reused. These cuttings can be used for road spreading, landfill cover, fill material and in the preparation or future drill pads. The cuttings also have application to damaged or low quality soil since they will aid in horticulture.

Drill Cuttings Remediation Procedures – Equipment and procedures can be adapted to any drilling operation.

Earthen Pit

1. In some cases a deep earthen pit is dug where the cuttings are deposited. In this case, the pit can be lined with plastic if needed.
2. Either the operator or the rig contractor will arrange for a 150 bbl tank to be available for the mixing of OSE II and untreated water.

3. A small centrifugal pump is placed close to the tank to spray the OSE II mixture into the pit and onto the cuttings as they are being deposited.
4. A 2" hose with sufficient length to reach the entire area of the earthen pit should be available.
5. The 150 bbl tank should be filled with 130 bbls of untreated water. This water could come from a water well, stream or river.
6. For example two drums of OSE II are then added to the tank. *(no more than 48 hours before discharge of drill cuttings)*
7. Discharge the entire OSE II volume into the earthen pit. OBM cuttings can then be deposited in the pit.
8. **NOTE:** if a tank is not available, the OSE II and water can be mixed directly into the cuttings pit. The cuttings can then be discharged into the pit.
9. The OSE II and water level should be such that the cuttings are submerged in at least one to two inches of OSE II and water.
10. This level should be maintained throughout the discharge of the oil base cuttings. If additional OSE II is required, it can be mixed by adding 65 bbls of water and one drum of OSE II.
11. The use of a fire hose when adding the water will add oxygen and enhance remediation.
12. Stirring or mixing the cuttings will increase the process of remediation.
13. At the completion of the drilling operation, the oil base cuttings should be safely remediated. They can then be relocated, distributed over the rig location or buried with no adverse effects on the environment, and the liquid will become non-potable water that can be evaporated or discharge around the drilling area or buried.

OSE II OnShore Drilling mud/cutting clean up