THE STUDY OF THE GROUND WATER QUALITY TOWARD THE OILY SAND MANAGEMENT FACILITY BY INJECTION

(CASE STUDY OF PT. CHEVRON PASIFIC INDONESIA, DURI OPERATION)

ABSTRACT

PT. Chevron Pasific Indonesia is one of the biggest oil company in the world. One of them is located in Duri, Riau. In the process of drilling to get the oil and before getting the oil which will be exported, the separation among water, oli, and sand will be done, the separation produce the oily sand waste which is included to the poisonous and dangerous waste, the it will be processed in the oily sand management facility (SMF). This process is expected to be able to decrease the impact to the environment. The given oily waste consists of the mixture of various hydrocarbon compounds which are classified as toxic and dangerous. It can cause the environment pollution such as soil and ground water pollution if the compounds are not processed properly. (Mishra et al, 2001)

The research methods used in his study is the survey and analysis method. This method is done by doing direct survey in the field and doing the parameter analysis of test results by making a comparison chart with predefined quality standard. The Regulations used as reference is the Indonesian Government Regulation No. 82 year 2001 about the Water Quality Management and Air Pollution Control (first class water) and the Regulation of the Minister of Health of the Republic of Indonesia No. 492 year 2010 about the Dringking Water Quality Requirements.

From the results of research which has been conducted, it is known that the content of TPH in the ground water aroud the SMF is still below the quality standards, the point is <0.01 mg / l for the parameters pH have the points ranging between 2.9 to 7.9, with quality standard 6-9 (PP No. 82 Year 2001) and from 6.5 to 8.5 (Minister of Health Regulation 492Years 2010). There are several water samples with low levels of acidic pH,

this is due to in the sampling process the monitoring wells located in a swamp area, where the land has the acidic nature. The Boron parameter has a point ranging from 0.02 to 2.41 mg / l with a defined quality standard of 1 mg / l (PP No. 82 of 2001). The presence of several samples that exceeded the quality standard is because some wells are close to the swamp which will inevitably impact on the groundwater in monitoring wells, and in the TCLP test, the injected waste has no Boron content, therefore, the high levels of boron are not due to the waste. For the Barium parameter <0.01 - 0.111 mg / l with the quality standard of 1 mg / l (PPNo. 82 Year 2001) and 0.7 mg / l (Minister of Health regulation No. 492 of 2010). In the Zink parameter the points ranges are from <0.005 to 0.174 with a standard quality 0.05 mg / l(PP No. 82 Year 2001) and 0.7 mg / l (Minister of Health Regulation No. 492 of 2010). The increase in the point of Zn is due to the acidic soil around, which is the wetlands.