

ABSTRACT

Nickel ore mining in Pomalaa sub-district of Kolaka district, Province of Southeast Sulawesi is one of nickel ore minings owned by PT. Aneka Tambang (Persero) Tbk. The mining is using open pit mining method. The mining products are carried on to the processing place to produce Ferronickel and sold in pellets form.

The data of daily rainfall from 2014-2016, the result stated that the rainfall report was 189,28 mm/day, rainfall intensity was 45,22 mm/hour with rain frequent period was 4 years and the hydrology risks was 86,83%. Drainage area divided into 10 areas. The drainage area in the first pit was 0,014 km² with rate flow 0,13 m³/second, the second pit was 0,020 km² with rate flow 0,19 m³/second, the third pit was 0,082 km² with rate of flow 0,76 m³/second, and the fourth pit was 0,066 km² with rate flow 0,61 m³/second. The first drainage area was 0,201 km² with rate flow 1,87 m³/second, the second drainage area was 0,183 km² with rate flow 1,70 m³/second, the third drainage area was 0,016 km² with rate flow 0,15 m³/second, the fourth drainage area was 0,049 km² with rate flow 0,46 m³/second, the fifth drainage area was 0,016 km² with rate flow 0,15 m³/second, and the sixth drainage area was 0,047 km² with rate flow 0,44 m³/second.

There were 16 open channel flows which divided into two open channel flows in the first mining, three open channel flows in the second mining, seven open channel flows in the third mining, and two open channel flows in the fourth mining. Those open channel flows would fill the water into the sump in each mine openings, which would be pumped into settling pond.

There were three settling ponds which would hold wastewater from each mine openings. The first settling pond would hold water from sumps of the second and the third mining with rate flow was 1,73 m³/second, the second settling pond would hold water from sump of the first mining with rate flow was 1,00 m³/second, the third settling pond would hold water from sump of the fourth mining with the rate flow was 3,75 m³/second. The treatment of settling ponds were continuously done based on the calculated time. Equipment which used for the treatment was *Back Hoe Komatsu PC 200 Long Arm*. The treatment for the first settling pond was done once in 224 days. The treatment for the second settling pond was done once in 179 days. The treatment of the third settling pond was done once in 226 days.