# RINGKASAN

Pit Inul K West merupakan salah satu pit yang berada dibawah Departemen Hatari, PT. Kaltim Prima Coal. Sebagaimana pit-pit lainnya yang memakai sistem penambangan terbuka, pit ini memiliki resiko akan terganggunya kegiatan penambangan apabila air yang berpotensi mengganggu pit ini tidak dapat dikelola dengan baik. Resiko ini semakin besar jika melihat curah hujan yang relatif tinggi. Oleh karena itu, perlu dilakukan penelitian untuk membuat sebuah rancangan sistem penyaliran yang dapat diaplikasikan pada pit ini.

Sumber air yang masuk ke Pit Inul K West adalah air hujan dan air limpasan. Hasil penelitian diketahui curah hujan rencana sebesar 76.75 mm/hari, intensitas curah hujan 26,6 mm/jam.dengan periode ulang hujan 2 tahun.

Sistem penyaliran yang digunakan adalah metode *mine drainage* dan *mine dewatering*, yaitu dengan membuat saluran terbuka untuk mencegah agar air limpasan tidak masuk ke dalam *pit* kemudian mengeluarkan air tambang dengan pompa dan pipa. Sehingga, rancangan sistem penyaliran tambang yang akan dibuat mencakup hal-hal seperti merencanakan dimensi saluran terbuka (*open channel*), lokasi dan dimensi sumuran (*sump*), lokasi gorong-gorong *(culvert)*, serta kebutuhan pompa dan pipa yang diperlukan untuk kuartal II, III dan IV tahun 2012.

Pada Kuartal II tahun 2012, dilakukan pembuatan Saluran Terbuka 1 (t = 2,3 m; b = 1 m; h = 1 m; a = 1 m), Saluran Terbuka 2 (t = 1,5 m; b = 0,8 m; h = 0,8 m; a = 0,8 m), Saluran Terbuka 3 (t = 1 m; b = 0,5 m; h = 0,45 m; a = 0,45 m), Saluran Terbuka 4 (t = 1,3 m; b = 0,6 m; h = 0,6 m; a = 0,6 m), pemasangan gorong-gorong 1 (d = 1 m, p = 48m) dan gorong-gorong 2 (d =1 m, p = 48 m), pembuatan Sump 1, (2 Pompa MF-420, p = 66 m; l = 60 m; t = 6 m), Sump 2, (1 Pompa MF-420, v = 39457 $m^3$; t = 5,5 m).

Pada Kuartal III tahun 2012, dilakukan pembuatan Saluran Terbuka 4 (t = 1,3 m; b = 0,65 m; h = 0,65 m; a = 0,65 m), Saluran Terbuka 5 (t = 0,8 m; b = 0,4 m; h = 0,4 m; a = 0,4 m), pemasangan gorong-gorong 3 ( d = 1 m, p = 48 m), Pembuatan Sump 1 ( 2 Pompa MF-420 p= 71 m; l = 60 m; t = 6 m ), Out Sump ( 1 Pompa MF-420 p= 55 m; l = 50 m; t = 4 m ).

Pada Kuartal IV tahun 2012, dilakukan pembuatan Saluran Terbuka 4, (t = 1,3 m; b = 0,7 m; h = 0,7 m; a = 0,7 m), Saluran Terbuka 5 (t = 1,3 m; b = 0,7 m; h = 0,7 m; a = 0,7 m ), Saluran Terbuka 6 ( t = 1,6 m; b = 0,8 m; h = 0,8 m; a = 0,8 m), Saluran Terbuka 7 (t = 1,9 m; b = 0,95 m; h = 0,95 m; a = 0,95 m), Sump 1 (2 Pompa MF-420, p= 71 m; l = 60 m; t = 6 m), Sump 3 (1 Pompa MF-420,p = 70 m; l = 65 m; t = 6 m ), Out Sump ( 2 Pompa MF-420 p= 55 m; l = 50 m; t = 4 m).

# ABSTRACT

Pit Inul K West is one of the pit under the Ministry of Hatari, PT. Kaltim Prima Coal. As the other pits that use open-pit mining system, this pit would risk disruption of mining activities that could potentially interfere with the water when the pit is not managed properly. This risk is greater if we look at the relatively high rainfall. Therefore, research needs to be done to create a mine drainage system design that can be applied to this pit.

Sources of water entering Pit Inul K West is rainwater and runoff. Rainfall results reveal a plan of 76.75 mm / day, rainfall intensity of 26.6 mm / hour with 2-year return period rainfall.

Drainage system using the mine drainage and mine dewatering method, which create an open channel to prevent water runoff entering the mine pit, then removing the water with pump. The design of drainage systems which made include things like plan-dimensional open channel, the location and dimensions of sump, the location of the culvert as well as the need for pumps and pipes required for the quarter II, III and IV in 2012.

In the second quarter of 2012, carried the manufacture of Open Channel 1 (t = 2.3 m, b = 1 m, h = 1 m, a = 1 m), Open Channel 2 (t = 1.5 m, b = 0, 8 m, h = 0.8 m, a = 0.8 m), Open Channel 3 (t = 1 m, b = 0.5 m, h = 0.45 m, a = 0.45 m), channel Open 4 (t = 1.3 m, b = 0.6 m, h = 0.6 m, a = 0.6 m), installation of culverts 1 (d = 1 m, p = 48m) and culvert 2 (d = 1 m, p = 48 m), making Sump 1, (2 Pumps MF-420, p = 66 m, l = 60 m, t = 6 m), Sump 2, (1 Pumps MF-420 , v = 39 457 $m^3$, t = 5.5 m).

In the third quarter of 2012, carried the manufacture of Open Channel 4 (t = 1.3 m, b = 0.65 m, h = 0.65 m, a = 0.65 m), Open Channel 5 (t = 0.8 m, b = 0.4 m, h = 0.4 m, a = 0.4 m), installation of culverts 3 (d = 1 m, p = 48 m), Making Sump 1 (2 MF-420 Pump p = 71 m, l = 60 m, t = 6 m), Out Sump (1 Pumps MF-420 p = 55 m, l = 50 m, t = 4 m).

In the fourth quarter of 2012, carried the manufacture of Open Channel 4, (t = 1.3 m, b = 0.7 m, h = 0.7 m, a = 0.7 m), Open Channel 5 (t = 1.3 m, b = 0.7 m, h = 0.7 m, a = 0.7 m), Open Channel 6 (t = 1.6 m, b = 0.8 m, h = 0.8 m, a = 0.8 m), Open Channel 7 (t = 1.9 m, b = 0.95 m, h = 0.95 m, a = 0.95 m), Sump 1 (2 Pumps MF-420, p = 71 m, l = 60 m, t = 6 m), Sump 3 (1 Pumps MF-420, p = 70 m, l = 65 m, t = 6 m), Out Sump (2 MF-420 Pump p = 55 m, l = 50 m, t = 4 m).