

## ABSTRAK

PT Amman Mineral Nusa Tenggara (AMMAN) mengolah bijih *stockpile* semenjak tahun 2017. Bijih *stockpile* merupakan bijih dengan kadar tembaga yang rendah. Bijih yang berada di *stockpile* dapat mengalami oksidasi sehingga dapat meunrunkan nilai perolehan tembaga ketika dilakukan proses konsentrasi. Metode yang dapat digunakan untuk meningkatkan nilai perolehan kembali tembaga yang teroksidasi adalah *controlled potential sulphide*. Tujuan dari metode ini adalah untuk mengoptimalkan laju sulfidisasi bijih yang teroksidasi. Parameter metode *controlled potential sulphide* pada penelitian ini adalah dengan menentukan *conditioning time*, *dosing point*, dan derajat oksidasi bijih. PT Amman Mineral Nusa Tenggara menyebut derajat oksidasi bijih dengan istilah acrat.

Serangkaian percobaan flotasi dengan metode *sulphidization potential control* dilakukan untuk menentukan *conditioning time*, *dosing point*, dan derajat oksidasi bijih (acrat). Variasi acrat terdiri dari *very high*, *high*, dan *medium* acrat. Percobaan flotasi dengan variasi *conditioning time* dilakukan dengan variasi 30, 60, 90, 120, 180 dan 300 detik pada tipe bijih *very high* acrat dengan pemberian dosis pada tahapan (1,2,3,4). Setelah itu menentukan variasi *conditioning time* yang optimum yaitu 60 detik. Kemudian, divariasikan *dosing point* pada *stage* (1, 2, 3, 4), (2, 3, 4), (3, 4) dan (4) dengan *conditioning time* 60 detik pada tipe bijih *very high*, *high*, dan *medium* acrat. Percobaan dimulai dengan *sampling* bijih *stockpile*, preparasi sampel *stockpile*, dilanjutkan dengan homogenisasi dan pembagian sampel, setelah itu dilakukan analisis kadar umpan, penentuan waktu gerus, kemudian dilakukan percobaan flotasi. Hasil produk flotasi ditimbang berat keringnya dan dianalisis kadar Cu dan *acid soluble copper* (AsCu) menggunakan *atomic absorption spectroscopy* (AAS).

Hasil percobaan menunjukkan *conditioning time* 60 detik memberikan hasil optimum dengan perolehan tembaga sebesar 72,67% dan kadar tembaga sebesar 12,38%. *Dosing point* pada *stage* (1, 2, 3, 4) dengan *conditioning time* 60 detik memberikan hasil optimum pada variasi *medium* acrat dengan perolehan tembaga secara berturut-turut sebesar 83,13%.

Kata kunci : *Copper Recovery*, *conditioning time*, *dosing point*, *controlled potential sulphide*.

## ABSTRACT

PT Amman Mineral Nusa Tenggara (AMMAN) has been processing stockpile ore since 2017. Stockpile ore is ore with a low copper content. The ore in the stockpile can undergo oxidation, which can reduce the copper recovery value during the concentration process. The controlled potential sulfide method can be used to increase the recovery value of oxidized copper. The aim of this method is to optimize the sulfidization rate of oxidized ore. The parameters of the controlled potential sulfide method in this study are to determine the conditioning time, dosing point, and the degree of ore oxidation. PT Amman Mineral Nusa Tenggara refers to the degree of ore oxidation as "acrat".

A series of flotation experiments using the controlled potential sulfidization method were conducted to determine the conditioning time, dosing point, and the degree of ore oxidation (acrat). The acrat variations were very high, high, and medium acrat. Flotation experiments with varying conditioning times were conducted at 30, 60, 90, 120, 180, and 300 seconds for very high acrat ore with dosing at stages (1, 2, 3, 4). After that, the optimum conditioning time was determined to be 60 seconds. Then, the dosing point was varied at stages (1, 2, 3, 4), (2, 3, 4), (3, 4), and (4) with a conditioning time of 60 seconds for very high, high, and medium acrat ore. The experiment began with sampling stockpile ore, preparing stockpile samples, followed by homogenization and sample division. After that, feed grade analysis, grinding time determination, and flotation experiments were carried out. The flotation product was weighed dry and analyzed for Cu content and acid soluble copper (AsCu) using atomic absorption spectroscopy (AAS).

The experimental results showed that a conditioning time of 60 seconds gave the optimum result with a copper recovery of 72.67% and a copper grade of 12.38%. The dosing point at stage (1, 2, 3, 4) with a conditioning time of 60 seconds gave the optimum result for the medium acrat variation with a copper recovery of 83.13%.

*Keyword: Copper recovery, conditioning time, dosing point, controlled potential sulphide.*