

## ABSTRAK

### PRARANCANGAN PABRIK TEMBAGA SULFAT DARI TEMBAGADAN ASAM SULFAT KAPASITAS 35.000 TON/TAHUN (Perancangan Reaktor (RE-201))

Oleh

**RIDHO HASYANAH**

Pabrik Tembaga Sulfat berbahan baku Tembaga dan Asam Sulfat, direncanakan didirikan di Gresik, Jawa Timur. Pendirian pabrik berdasarkan atas pertimbangan akan ketersediaan bahan baku, sarana transportasi yang memadai, tenaga kerja yang mudah didapatkan dan kondisi lingkungan.

Pabrik direncanakan memproduksi Tembaga Sulfat sebanyak 35.000 ton/tahun, dengan waktu operasi 24 jam/hari, 330 hari/tahun. Bahan baku yang digunakan adalah Tembaga sebanyak 197,357 kg/jam dan Asam Sulfat sebanyak 609,165 kg/jam.

Penyediaan kebutuhan utilitas pabrik terdiri dari unit pengadaan air, pengadaan listrik, pengadaan udara instrument, pengadaan *refrigerant*, dan pengadaan *steam*.

Bentuk perusahaan adalah Perseroan Terbatas (PT) menggunakan struktur organisasi *line* dan *staff* dengan jumlah karyawan sebanyak 175 orang.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp170.955.859.704
<i>Working Capital Investment</i>	(WCI)	= Rp 30.168.681.124
<i>Total Capital Investment</i>	(TCI)	= Rp 201.124.540.828
<i>Break Even Point</i>	(BEP)	= 53,36 %
<i>Shut Down Point</i>	(SDP)	= 30,5 %
<i>Pay Out Time before taxes</i>	(POT) <sub>b</sub>	= 3,32 tahun
<i>Pay Out Time after taxes</i>	(POT) <sub>a</sub>	= 3,83 tahun
<i>Return onInvestment before taxes</i>	(ROI) <sub>b</sub>	= 17,56 %
<i>Return onInvestment after taxes</i>	(ROI) <sub>a</sub>	= 13,64 %
<i>Discounted cash flow</i>	(DCF)	= 57,8 %

Mempertimbangkan paparan di atas, sudah selayaknya pendirian pabrik Tembaga Sulfat ini dikaji lebih lanjut, karena merupakan pabrik yang menguntungkan dan mempunyai masa depan yang baik.

## ABSTRACT

### MANUFACTURING OF COPPER SULFATE FROM COPPER AND SULFURIC ACID WITH CAPACITY 35.000 TONS/YEAR (Design of Reactor (RE-201))

By

**RIDHO HASYANAH**

Copper Sulfate plant with raw materials, copper and sulfuric acids planned to be built in Gresik, East Java. Establishment of this plant is based on some consideration due to the raw material resources, the transportation, the labors availability and also the environmental condition.

This plant is meant to produce 35,000 tons/year with 330 working days in a year. The raw materials used consist of 197,357 kg/hour of copper and 609,165 kg/hour of sulfuric acid.

The utility units consist of water supply system, power generation system, air supply system, refrigerant supply system, and steam supply system.

The business entity form is Limited Liability Company (Ltd) using line and staff organizational structure with 175 labors.

From the economic analysis, it is obtained that:

<i>Fixed Capital Investment</i>	(FCI)	= Rp170.955.859.704
<i>Working Capital Investment</i>	(WCI)	= Rp 30.168.681.124
<i>Total Capital Investment</i>	(TCI)	= Rp 201.124.540.828
<i>Break Even Point</i>	(BEP)	= 53,36 %
<i>Shut Down Point</i>	(SDP)	= 30,5 %
<i>Pay Out Time before taxes</i>	(POT) <sub>b</sub>	= 3,32 years
<i>Pay Out Time after taxes</i>	(POT) <sub>a</sub>	= 3,83 years
<i>Return on Investment before taxes</i>	(ROI) <sub>b</sub>	= 17,56 %
<i>Return on Investment after taxes</i>	(ROI) <sub>a</sub>	= 13,64 %
<i>Discounted cash flow</i>	(DCF)	= 57,8 %

Considering the summary above, it is properly study the establishment of Copper Sulfate plant further, because the plants profitable and has good prospects.