

**PENGENDALIAN PENCEMARAN AIR SUNGAI AKIBAT LIMBAH CAIR  
INDUSTRI ALKOHOL DI DESA NGOMBAKAN KECAMATAN  
POLOKARTO KABUPATEN SUKOHARJO JAWA TENGAH**

Oleh :  
**Oktarian Saffa Adina**  
**114180040**

**INTISARI**

Industri Alkohol yang berada di Desa Ngombakan, Kecamatan Polokarto, Kabupaten Sukoharjo merupakan industri turun – temurun yang sudah ada sejak dahulu. Saat ini industri tersebut belum memiliki Instalasi Pengolahan Air Limbah dan langsung membuang limbah cair hasil produksi langsung menuju ke Sungai Samin. Pembuangan limbah secara langsung menyebabkan perubahan fisik air sungai bahkan hingga berwarna kehitaman dan berbau kurang sedap. Tujuan dilakukan penelitian ini adalah mengidentifikasi kualitas limbah cair dan air sungai di daerah penelitian, menganalisis tingkat pencemaran dan membuat arahan pengolahan terhadap limbah cair alkohol.

Jenis metode yang dilakukan dalam penelitian adalah metode kualitatif dan kuantitatif. Pengumpulan data pada penelitian menggunakan metode *survey* dan pemetaan. Pengambilan sampel limbah cair alkohol menggunakan metode *purposive sampling* sedangkan pengambilan sampel air sungai dengan *systematic random sampling* dengan setiap jarak 200 meter. Metode analisis data yang digunakan yaitu metode analisis data kuantitatif dan kualitatif untuk indeks pencemaran, evaluasi standar stream dan keterkaitan aspek geofisik kimia, permasalahan dan dampak kualitas limbah cair. Metode uji coba untuk membuat rancangan *reaktor batch anaerob* skala laboratorium.

Hasil penelitian menunjukkan parameter limbah cair alkohol BOD, COD, TSS dan Sulfida tidak sesuai dengan baku mutu. Limbah cair alkohol berpengaruh terhadap kualitas air sungai, hal ini dibuktikan dengan terdapat parameter BOD, COD, TSS dan Sulfida yang tidak sesuai di beberapa titik sungai. Air sungai daerah penelitian memiliki status mutu tercemar ringan hingga tercemar berat dengan nilai 4,3045 hingga 12,1507. Arahan pengolahan dengan *reaktor batch anaerob* memiliki 7 tabung *reaktor batch anaerob*. Nilai efisiensi *reaktor batch anaerob* untuk BOD, COD, TSS, pH dan Sulfida berturut – turut yaitu 83,10% ; 58,03% ; 83,55% ; 99,95% ; 27,20% .

**Kata Kunci** : Industri alkohol, limbah cair alkohol, Air Sungai, *Reaktor batch anaerob*, Indeks Pencemaran

**RIVER WATER POLLUTION CONTROL DUE TO LIQUID WASTE OF  
ALCOHOL INDUSTRY IN NGOMBAKAN VILLAGE, POLOKARTO  
DISTRICT, SUKOHARJO REGENCY, CENTRAL JAVA**

**By:**

**Oktarian Saffa Adina**  
**114180040**

**ABSTRACT**

*The alcohol industry in Ngombakan Village, Polokarto District, Sukoharjo The alcohol industry in Ngombakan Village, Polokarto District, Sukoharjo Regency is a hereditary industry that has existed for a long time. Currently, the industry does not have a Wastewater Treatment Plant and directly disposes of the produced liquid waste directly into the Samin River. Disposal of waste directly causes physical changes in river water even to a blackish color and smells bad. The purpose of this research is to identify the quality of liquid waste and river water in the research area, to analyze the level of pollution and to make treatment directions for alcoholic liquid waste.*

*The types of methods used in the research are qualitative and quantitative methods. Data collection in the study used survey and mapping methods. Sampling of liquid alcohol waste used purposive sampling method while river water sampling was carried out by systematic random sampling with every 200 meters distance. The data analysis method used is quantitative and qualitative data analysis methods for the pollution index, evaluation of stream standards and the linkage of geophysical and chemical aspects, problems and impacts of liquid waste quality. Experimental method to design a laboratory-scale anaerobic batch reactor.*

*The results showed that the alcohol wastewater parameters BOD, COD, TSS and Sulfide were not in accordance with the quality standards. Alcoholic liquid waste affects the quality of river water, this is evidenced by the inappropriate parameters of BOD, COD, TSS and Sulfide at several points of the river. River water in the research area has a quality status of lightly polluted to heavily polluted with a value of 4.3045 to 12.1507. The instructions for processing with an anaerobic batch reactor have 7 tubes of an anaerobic batch reactor. The efficiency value of the anaerobic batch reactor for BOD, COD, TSS, pH and Sulfide is 83.10%, respectively; 58.03% ; 83.55% ; 99.95% ; 27.20% .*

**Keywords** :Alcohol industry, Alcohol Liquid Waste, River Water, Reaktor batch anaerob, Pollution Index