TINGKAT KERENTANAN AIR SUNGAI DAN AIR BAWAH TANAH TERHADAP PENCEMARAN LIMBAH CAIR KEGIATAN PETERNAKAN DAN RUMAH POTONG HEWAN (RPH) DI DESA SEGOROYOSO, KECAMATAN PLERET, KABUPATEN BANTUL, DAERAH ISTIMEWA YOGYAKARTA

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INTISARI

Kebutuhan pangan manusia yang semakin meningkat berdampak pada perkembangan sektor peternakan dan rumah potong hewan (RPH) yang berkembang pesat pula. Desa Segoroyoso, Kecamatan Pleret, Kabupaten Bantul, Daerah Istimewa Yogyakarta menjadi kawasan dengan sektor peternakan terbesar namun berimbas pada permasalahan lingkungan karena limbah yang dihasilkan langsung dialirkan ke sungai tanpa pengolahan. Potensi pencemaran air sungai dan air bawah tanah dikontrol oleh faktor alami berdasarkan kondisi geofisik dan faktor non alami yang disebabkan oleh kegiatan manusia. Indikasi pencemaran ditandai dengan kondisi Sungai Pesing berwana coklat keruh dan berbau yang juga berpengaruh pada air bawah tanah di sekitarnya. Penelitian ini bertujuan untuk mengetahui tingkat kerentanan air sungai dan air bawah tanah, kualitas air dan status mutu, serta arahan pengelolaan untuk menjaga kualitas air di daerah penelitian.

Penelitian dilakukan dengan melakukan pengumpulan data geofisik-kimia dan sosial menggunakan metode survey pemetaan dan wawancara. Penentuan tingkat kerentanan pencemaran air sungai menggunakan metode PCSM *(Point Count System Model)* dan tingkat kerentanan air bawah tanah menggunakan metode DRASTIC. Pengambilan sampel kualitas air sungai dan air bawah tanah menggunakan metode *purposive sampling* yang didasarkan pada zonasi tingkat kerentanan. Status mutu dari hasil uji kualitas air dianalisis menggunakan metode indeks pencemaran (IP). Hasil tingkat kerentanan dan status mutu kualitas air menjadi dasar penentuan arahan pengelolaan menggunakan metode analisis deskriptif dengan memperhatikan kondisi geofisik-kimia dan sosekbud (sosial ekonomi budaya) di daerah penelitian.

Hasil penelitian diperoleh tingkat kerentanan air sungai yaitu rentan dan cukup rentan, sedangkan air bawah tanah memiliki satu tingkat kerentanan yaitu tinggi. Sesuai dengan analisis kualitas dan status mutu air sungai yang termasuk pada kondisi tercemar berat dengan nilai IP sebesar 11,026 dan 11,662, sedangkan status mutu air bawah tanah termasuk kondisi tercemar ringan dengan nilai IP sebesar 2,144, 2,159, dan 2,131. Berdasarkan hasil uji laboratorium air sungai memiliki kandungan sulfida, ammonia dan *Ecoli* yang melebihi baku mutu. Air bawah tanah yang diujikan juga memiliki kandungan *Ecoli* yang melebihi baku mutu. Arahan pengelolaan sebagai upaya represif untuk menangani pencemaran air yang terjadi adalah dengan pembuatan IPAL untuk peternakan dan RPH serta menerapkan konsep produksi bersih untuk masyarakat.

Kata Kunci : DRASTIC, Kerentanan, PCSM, Peternakan, RPH

VULNERABILITY LEVEL OF RIVER WATER AND GROUNDWATER TO LIQUID WASTE POLLUTION OF LIVESTOCK ACTIVITIES AND SLAUGHTERHOUSE IN SEGOROYOSO VILLAGE, PLERET DISTRICT, BANTUL REGENCY, SPECIAL REGION OF YOGYAKARTA

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ABSTRACT

The increasing need for human food has an impact on the development of the livestock sector and Slaughterhouse which is growing rapidly as well. Segoroyoso Village, Pleret District, Bantul Regency, Yogyakarta Special Region is the area with the largest livestock sector but has an impact on environmental problems. Potential pollution of river water and groundwater is controlled by natural factors based on geophysical conditions and non-natural factors caused by human activities. There are indications of pollution which are marked by the condition of the Pesing River, which is brown, cloudy and smells, caused by the disposal of waste from livestock activities and abattoirs which are directly channeled into the river without prior processing. This study aims to determine the level of vulnerability of river water and underground water, water quality and quality status, as well as management directions to maintain water quality in the research area.

The research was conducted by collecting geophysical-chemical and social data using survey and mapping methods. Determination of the vulnerability level of river water pollution using the PCSM (Point Count System Model) method and the level of groundwater vulnerability using the DRASTIC method. Sampling of river water quality and groundwater using purposive sampling method based on vulnerability level zoning. The quality status of the results of the water quality test was analyzed using the Pollution Index (IP) method. The results of the level of vulnerability and the status of water quality are the basis for determining the direction of management by taking into account the geophysical, chemical and socio-economic conditions in the research area.

The results showed that there are two levels of vulnerability of river water, namely vulnerable and moderately vulnerable, while groundwater has one level of vulnerability, namely high. In accordance with the analysis of the quality and status of river water quality, which is included in heavily polluted conditions with IP values of 11.026 and 11.662, while the status of groundwater quality is included in lightly polluted conditions with IP values of 2,144, 2,159, and 2,131. Based on the results of laboratory tests, river water contains sulfides, ammonia and Ecoli which exceed the quality standard. The underground water tested also contains Ecoli that exceeds the quality standard. The management directive as a repressive effort to deal with water pollution that occurs is by making Waste Water Treatment Plan (WWTP) for livestock and abattoirs and applying the concept of clean production for the community.

Keywords: DRASTIC, Vulnerability, PCSM, Livestock, Slaughterhouse