

**KERENTANAN AIRTANAH TERHADAP PENCEMARAN AKIBAT
KEBOCORAN PIPA BAHAN BAKAR SOLAR DI DUSUN SIDADADI, DESA
TARISI, KECAMATAN WANAREJA, KABUPATEN CILACAP,
PROVINSI JAWA TENGAH**

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INTISARI

Kebocoran pipa penyalur bahan bakar solar di Dusun Sidadadi menimbulkan dampak bagi sebagian air sumur warga setempat. Terdapat indikasi pencemaran airtanah yang terlihat dari ciri fisik berupa warna, bau, dan rasa dan indikasi penurunan kualitas air sumur secara kimia yang dapat berdampak negatif bagi kesehatan lingkungan geo-fisik kimia maupun biologi. Sebagian warga yang terdampak, terpaksa harus mengungsi untuk mendapatkan air bersih. Penelitian ini bertujuan untuk menganalisis kualitas airtanah dan tingkat kerentanan airtanah di Dusun Sidadadi dalam mengetahui arahan pengelolaan airtanah yang tepat secara teknologi maupun sosial ekonomi guna meminimalisir pencemaran airtanah akibat kebocoran pipa solar.

Data penelitian berupa komponen geo-fisik kimia diperoleh melalui metode observasi dan pemetaan. Penentuan tingkat pencemaran airtanah ditentukan berdasarkan status mutu air yang dihitung menggunakan metode Indeks Pencemaran. Pengambilan sampel airtanah dilakukan dengan teknik *purposive sampling* pada 14 sumur gali yang terdampak di daerah penelitian. Data kualitas airtanah diperoleh dengan uji laboratorium kualitas airtanah berdasarkan baku mutu air kelas I pada Peraturan Pemerintah No. 22 Tahun 2021 dan baku mutu bagi peruntukan higiene sanitasi Peraturan Menteri No. 32 tahun 2017. Penentuan tingkat kerentanan airtanah dilakukan dengan menggunakan metode LeGrand dan digunakan sebagai analisis arahan pengelolaan airtanah bersama dengan tingkat pencemaran airtanah melalui studi pustaka penelitian terdahulu.

Tingkat pencemaran airtanah dikategorikan ke dalam kondisi “cemar ringan”. Parameter yang tidak memenuhi baku mutu dan mempengaruhi perubahan kualitas airtanah, yaitu parameter pH, DO, COD, serta minyak dan lemak. Tingkat kerentanan airtanah di daerah penelitian termasuk ke dalam dua kategori, yaitu “sedang” dan “kecil”. Arahan pengelolaan airtanah guna meminimalisir pencemaran dapat dilakukan dengan memanfaatkan tanaman eceng gondok (*Eichornia crassipes*) yang melimpah di daerah penelitian sebagai material adsorben dalam bentuk serbuk.

Kata kunci : Kerentanan, Pencemaran Hidrokarbon, LeGrand, Indeks Pencemaran, Material Adsorben.

**GROUNDWATER VULNERABILITY TO DIESEL FUEL PIPE LEAKAGE
POLLUTION IN SIDADADI, DESA TARISI, KECAMATAN WANAREJA,
KABUPATEN CILACAP, CENTRAL JAVA**

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ABSTRACT

The leak of the diesel fuel supply pipe in Sidadadi has an impact on some of the water wells for local residents. The 80,000 liters of diesel fuel spill affecting in the death of dozens of residents' plants as well. There are indications of groundwater pollution which can be seen from physical characteristics in the form of color, smell, and taste and indications of chemical deterioration of well water quality which can have a negative impact on environmental health, geo-physical, chemical, biological, and socio-economic. Some of the affected residents were forced to evacuate to get clean water. This study aims to determine the level of groundwater pollution and the level of vulnerability of groundwater in Sidadadi, in order to know the appropriate technological and socio-economic directions for groundwater management in order to minimize groundwater pollution due to leakage of diesel pipes.

Research data in the form of chemical geo-physical components were obtained through observation and mapping methods. Determination of the level of groundwater pollution is determined based on the status of water quality which is calculated using the Pollution Index method. Groundwater sampling was carried out by purposive sampling technique on 14 affected dug wells in the study area. Groundwater quality data were obtained by laboratory testing of groundwater quality based on class I water quality standards in Government Regulation No. 22 of 2021 and quality standards for the designation of hygiene and sanitation Ministerial Regulation No. 32 of 2017. Determination of the level of vulnerability of groundwater is carried out using the LeGrand method and used as analysis of the direction of groundwater management along with the level of groundwater pollution through a literature study of previous research.

*The level of groundwater pollution is categorized into a "lightly polluted" condition. Parameters that do not meet quality standards and affect changes in groundwater quality are pH, DO, COD, and oil-grease parameters. The level of vulnerability to groundwater in the study area falls into two categories, namely "medium" and "small". The direction of groundwater management in order to minimize pollution can be done by utilizing the abundant water hyacinth (*Eichornia crassipes*) in the study area as an adsorbent material in powder form.*

Keywords : *Vulnerability, Hydrocarbon Pollution, LeGrand, Pollution Index, Adsorbent Material*