

PEMETAAN TINGKAT KESADAHAN AIR SUMUR  
BERDASARKAN KEDALAMAN SUMUR DAN JENIS TANAH DI DESA PLAYEN,  
KECAMATAN PLAYEN, KABUPATEN GUNUNGKIDUL

Desti Suryaningrum  
Jurusan Kesehatan Lingkungan Poltekkes Kemenkes Yogyakarta, Jl. Tata Bumi No. 3  
Banyuraden, Gamping, Sleman, Yogyakarta 55293  
[destanew48@gmail.com](mailto:destanew48@gmail.com)

INTISARI

Air merupakan salah satu sumber daya alam yang memiliki fungsi sangat penting bagi kehidupan. Masyarakat di Desa Playen, Playen, Gunungkidul memanfaatkan air sumur gali berkedalaman 30 – 40 meter untuk air minum dan kebutuhan rumah tangga lainnya. Air yang dikonsumsi masyarakat kurang layak, karena air keruh, membentuk flok-flok pada dinding pipa maupun kamar mandi dan adanya endapan putih pada dasar wadah ketika dilakukan perebusan pada air tersebut. Ciri-ciri itu mengindikasikan air mengandung kesadahan. Hal ini menyebabkan penduduk terganggu dalam menggunakan air untuk keperluan sehari-hari serta membutuhkan waktu lama untuk mengendapkan zat kapur.

Penelitian ini bertujuan untuk mengetahui peta tingkat kesadahan dan sebaran tingkat kesadahan air sumur gali berdasarkan kedalaman sumur dan jenis tanah di Desa Playen berbasis Sistem Informasi Geografis (SIG). Obyek dalam penelitian ini adalah sumur gali milik warga yang berada di Desa Playen. Jenis penelitian ini adalah survei deskriptif dengan pendekatan kuantitatif.

Hasil penelitian menunjukkan rata-rata kadar kesadahan air sumur gali di Dusun Playen I sebesar 172 mg/l, Dusun Playen II sebesar 236 mg/l, Dusun Banaran sebesar 158 mg/l, Dusun Jatisari sebesar 205 mg/l, Dusun Bogor I sebesar 240 mg/l, Dusun Bogor II sebesar 261 mg/l, dan Dusun Mojosari sebesar 189 mg/l. Rata-rata kadar kesadahan tertinggi terdapat di Dusun Bogor II dan kesadahan terendah di Dusun Banaran. Kedalaman sumur masing-masing dusun berada pada interval 30 – 40 meter. Jenis tanah yang ada di Desa Playen ada 3 jenis, yaitu tanah glumosol, tanah mediteran merah, dan tanah mediteran merah kecoklatan.

Kata Kunci : Kesadahan, Pemetaan, Sumur Gali, Kedalaman, Jenis Tanah, SIG

MAPPING OF WELL WATER CONSISTENCY LEVELS  
BASED ON THE DEPTH OF WELLS AND TYPES OF LAND IN PLAYEN  
VILLAGE, KECAMATAN PLAYEN, GUNUNGKIDUL DISTRICT

Desta Suryaningrum  
Department of Environmental Health, Poltekkes Kemenkes Yogyakarta, Jl. Tata Bumi No. 3  
Banyuraden, Gamping, Sleman, Yogyakarta 55293  
[destanew48@gmail.com](mailto:destanew48@gmail.com)

*ABSTRACT*

Water is a natural resource that has a very important function for life. People in Playen Village, Playen, Gunungkidul utilize dug well water with a depth of 30-40 meters for drinking water and other household needs. The water consumed by the community is not feasible, because the water is cloudy, forming flocks on the walls of pipes and bathrooms and there is a white sediment at the bottom of the container when boiling the water. These characteristics indicate that the water contains hardness. This causes the population to be disturbed in using water for their daily needs and it takes a long time to settle the limestone.

This study aims to determine the map of the level of hardness and distribution of dug well water hardness based on the depth of the well and the type of soil in Playen Village based on Geographical Information Systems (GIS). The object of this research is the dug wells belonging to residents in Playen Village. This type of research is a descriptive survey with a quantitative approach.

The results showed that the average water hardness level of dug wells in Playen I Hamlet was 172 mg / l, Playen II Hamlet was 236 mg / l, Banaran Hamlet was 158 mg / l, Jatisari Hamlet was 205 mg / l, Dusun Bogor I was 240 mg / l, Dusun Bogor II amounted to 261 mg / l, and Dusun Mojosari amounted to 189 mg / l. The highest average hardness level was in Dusun Bogor II and the lowest was in Dusun Banaran. The depth of the wells of each hamlet is at intervals of 30-40 meters. There are 3 types of soil in Playen Village, namely glumosol soil, red Mediterranean soil, and brownish red Mediterranean soil.

Keywords: Hardness, Mapping, Dug Well, Depth, Soil Type, GIS