

## SARI

Tidak meratanya persebaran air tanah di Desa Blangu dan sekitarnya, Kabupaten Sragen, Jawa Tengah mengakibatkan sulitnya mendapatkan air pada beberapa titik. Meskipun demikian, masih dapat ditemukan mata air yang mengeluarkan air tanah. Pendekatan geologi, hidrogeologi, dan hidrokimia dilakukan untuk menjawab permasalahan tersebut. Sehingga penelitian ini bertujuan mengetahui kondisi hidrogeologi dan geologi, perbedaan kimia air tanah mata air musiman dan mata air sepanjang musim, serta mengetahui pengaruh kondisi geologi terhadap perbedaan persebaran air tanah di Desa Blangu dan sekitarnya. Metode analisis geologi menggunakan analisis petrografi sayatan tipis. Metode analisis kimia air tanah menggunakan analisis *Ion Chromatography* (IC) dan secara teoritik menggunakan Diagram Piper, Diagram Stiff, dan Diagram Fingerprint. Analisis hubungan kondisi geologi dan perbedaan persebaran air tanah meliputi morfologi, litologi, dan struktur geologi. Secara morfologi daerah penelitian terbagi menjadi perbukitan sedimen berlereng landai dan dataran sedimen sedikit bergelombang. Daerah penelitian terdiri atas satuan napal, batugamping grainstone, dan napal berselingan dengan batulempung karbonatan. Struktur di daerah penelitian meliputi sesar dekstral diperkirakan dan sesar sinistral diperkirakan. Air tanah mengalir dari utara menuju ke selatan. Tipe air tanah di daerah penelitian adalah kalsium bikarbonat ( $\text{Ca}(\text{HCO}_3)_2$ ) dan kalsium sulfat ( $\text{CaSO}_4$ ). Kandungan ion bikarbonat menandakan air tanah tersebut berasal dari akuifer yang dangkal, sedangkan kandungan ion sulfat menandakan air tanah berasal dari akuifer yang lebih dalam. Air tanah paling banyak ditemukan pada satuan napal dan satuan batugamping grainstone, dan paling jarang ditemukan pada satuan napal berselingan dengan batulempung karbonatan. Daerah penelitian terbagi menjadi 2 zona hidrogeologi yaitu zona air tanah langka dan zona air tanah bebas terbatas. Faktor penentu kemunculan air tanah tersebut dipengaruhi oleh litologi penyusun daerah penelitian, struktur geologi, serta elevasi daerah penelitian.

Kata kunci: air tanah, hidrogeologi, kuantitas air tanah, kualitas air tanah

## ABSTRACT

*The unequal distribution of groundwater in Blangu Village and its Surroundings, Sragen Regency, Central Java has difficulties in getting water at several area. Even so, there are still springs that emit groundwater. Geological, hydrogeological and hydrochemical approaches are used to address these problems. So that this study aims to determine the hydrogeological and geological conditions, the differences in the chemistry of seasonal spring and spring water throughout the season, and to determine the effect of geological conditions on differences in the distribution of groundwater in Blangu Village and its surroundings. The geological analysis method uses thin incision petrographic analysis. The chemical analysis method for groundwater uses Ion Chromatography (IC) analysis and theoretically uses a Piper Diagram, Stiff Diagram, and Fingerprint Diagram. Analysis of the relationship between geological conditions and differences in groundwater distribution includes morphology, lithology, and geological structures. Morphologically, the study area is divided into sedimentary hills with gentle slopes and slightly undulating sedimentary plains. The research area consists of marl units, grainstone limestones, and marl interspersed with carbonate claystone. The structures in the study area include estimated dextral faults and estimated sinistral faults. Groundwater flows from north to south. The types of groundwater in the study area are calcium bicarbonate ( $\text{Ca}(\text{HCO}_3)_2$ ) and calcium sulfate ( $\text{CaSO}_4$ ). The content of bicarbonate ions indicates that groundwater comes from shallow aquifers, while the content of sulfate ions indicates that groundwater comes from deeper aquifers. Groundwater is mostly found in marl units and grainstone limestone units, and most rarely in marl units alternating with carbonate claystone. The research area is divided into 2 hydrogeological zones, namely the rare groundwater zone and the limited free groundwater zone. The determining factors for the emergence of the groundwater are influenced by the lithology of the study area, the geological structure, and the elevation of the research area.*

*Keywords: groundwater, hydrogeology, quantity of ground water, quality of groundwater*