

PERANCANGAN SISTEM INFORMASI DATA PENGEBORAN EKSPLORASI NIKEL BERBASIS LARAVEL DI PT. GEOSERVICES

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ABSTRAK

Proses pencatatan dan pelaporan data pengeboran eksplorasi nikel di PT. Geoservices masih dilakukan secara manual menggunakan Microsoft Excel yang didistribusikan melalui surel, sehingga menimbulkan risiko kesalahan input, keterlambatan pelaporan, dan ketiadaan pemantauan secara *real-time*. Penelitian ini bertujuan membangun sistem informasi berbasis web untuk mengelola data pengeboran eksplorasi nikel sekaligus menyajikan visualisasi progres pengeboran secara *real-time*. Sistem dikembangkan menggunakan metode *Rapid Application Development* (RAD) dengan *framework* Laravel dan basis data PostgreSQL. Analisis kebutuhan dilakukan menggunakan metode PIECES, perancangan sistem menggunakan UML, serta pengujian dilakukan melalui *Black Box Testing* dan *System Usability Scale* (SUS). Hasil *Black Box Testing* menunjukkan seluruh skenario uji pada semua modul dan peran pengguna dinyatakan valid. Evaluasi SUS menghasilkan skor rata-rata 86,875 yang termasuk dalam kategori Grade A dengan predikat *Best Imaginable* dan rentang penerimaan *Acceptable*. Sistem ini berhasil mengintegrasikan pencatatan data *borehole*, *core recovery sheet*, dan data sampel geologi ke dalam satu platform terpusat yang dilengkapi validasi otomatis dan dashbor pemantauan *real-time*.

Kata Kunci: Sistem Informasi, Eksplorasi Nikel, Pengeboran, Laravel, RAD, PIECES, SUS.

DESIGN AND DEVELOPMENT OF A LARAVEL-BASED INFORMATION SYSTEM FOR MANAGING NICKEL EXPLORATION DRILLING DATA AT PT. GEOSERVICES

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ABSTRACT

The process of recording and reporting nickel exploration drilling data at PT. Geoservices was previously conducted manually using Microsoft Excel distributed via email, resulting in high risks of data entry errors, reporting delays, and the absence of real-time monitoring. This study aims to develop a web-based information system to manage nickel exploration drilling data while providing real-time visualization of drilling progress. The system was developed using the Rapid Application Development (RAD) method with the Laravel framework, TALL stack, and PostgreSQL database. Requirements analysis was conducted using the PIECES method, system design using UML, and testing was performed through Black Box Testing and the System Usability Scale (SUS). Black Box Testing results indicate that all test scenarios across every module and user role were declared valid. The SUS evaluation yielded an average score of 86.875, classified as Grade A with a Best Imaginable rating and an Acceptable range. The system successfully integrates borehole data recording, core recovery sheets, and geological sample data into a centralized platform equipped with automatic validation and a real-time monitoring dashboard.

Keywords: *Information System, Nickel Exploration, Drilling, Laravel, RAD, PIECES, SUS.*