Our Coal Getting

Precise and safe coal extraction process ensuring high recovery, minimal loss, and consistent quality in every ton produced.

Cakra Sigma employs a systematic, technology-driven approach to coal extraction that prioritizes operational excellence, safety compliance, and resource optimization. Our coal getting methodology integrates advanced geological analysis, precision equipment operation, and real-time quality control to deliver consistent results across all mining operations. Through meticulous planning and execution, we achieve superior recovery rates while maintaining the highest safety standards in the industry.

The coal getting process represents the critical phase where operational planning translates into tangible production outcomes. Our methodology encompasses seven distinct stages, each designed to maximize efficiency, ensure worker safety, and maintain product quality. From initial seam identification through final handover for hauling, every step is executed with precision and monitored continuously to meet stringent performance benchmarks.

Seam Identification and Preparation

01

Coal Seam Identification

Detailed geological mapping and seam marking determine exact coal seam boundary, thickness, and quality zone before excavation begins.

02

Seam Cleaning & Exposure

Exposed coal seam areas are cleaned using excavators and dozers to remove residual overburden and contamination materials.

03

Excavation Operation

Modern hydraulic excavators operated by experienced crews perform layer-by-layer extraction following design parameters.

Successful coal extraction starts with comprehensive geological analysis and systematic preparation. Cakra Sigma's technical teams use advanced surveying and geological data to precisely map coal seam characteristics, enabling optimized extraction plans that maximize resource recovery and minimize dilution. Subsequently, specialized equipment removes overburden and surface contamination, exposing clean coal contacts essential for product purity and establishing safe, accessible working platforms.

The excavation operations employ state-of-the-art hydraulic excavators, operated by experienced crews. They follow predetermined digging patterns and a layer-by-layer extraction methodology. This ensures complete resource recovery, preserves slope stability, and maintains safe working conditions across the active mining area.

Quality Control and Selective Mining

Selective Mining Techniques

Segregation of different coal qualities directly at pit face ensures proper blending and consistency in final product specifications.

Quality Zone Mapping

Real-time quality assessment enables immediate adjustment of mining sequences to optimize product characteristics and market requirements.

Contamination Prevention

Strict protocols prevent mixing of coal with waste materials, maintaining high calorific values and reducing ash content in delivered product.

Cakra Sigma implements sophisticated selective mining techniques, utilizing operators trained to identify visual indicators of coal quality variations in real-time. This enables immediate segregation of different coal grades directly at the pit face, ensuring precise quality control. By creating discrete stockpiles of varying qualities, we facilitate optimal blending strategies to meet customer specifications and market demands, thereby maximizing revenue and delivering consistent product quality.

Our quality assurance protocols extend to strict contamination prevention, maintaining clean working surfaces and employing careful material handling to prevent mixing coal with waste. This preserves the coal's intrinsic quality, high calorific values, and low ash content. Continuous coordination between geological staff and production supervisors, alongside daily data reviews and operational adjustments, ensures consistent alignment with quality objectives, enabling Cakra Sigma to consistently meet or exceed contracted specifications.

Safety Monitoring and Risk Management

Continuous Safety Monitoring

Pit slopes and working areas undergo continuous geotechnical monitoring with advanced systems that track slope movements and structural stability in real-time to prevent wall failure and ensure safe operations.

Dedicated safety personnel conduct regular inspections, and pre-shift briefings ensure crews understand daily hazards and control measures. This approach drives our zero-incident performance objective, with immediate work suspension if potential hazards are identified.

Key Safety Metrics

- Real-time slope monitoring systems
- Daily geotechnical inspections
- Pre-shift safety briefings for all crews
- Incident reporting and investigation protocols
- Equipment safety certification programs
- Emergency response team deployment

Cakra Sigma manages inherent risks in coal extraction through a comprehensive safety system, integrating advanced geotechnical monitoring, procedural controls, and a strong safety culture. Automated systems continuously track slope movements, with qualified engineers analyzing data for early warning signs and proactive preventive measures, ensuring excellent safety performance and alignment with our zero-incident objective.

Material Handling and Quality Verification

1

Temporary Stocking

Coal is placed in clean, designated areas for inspection and moisture checks before hauling operations begin.

2

Quality Inspection

Visual inspection and moisture testing ensure compliance with quality standards and customer specifications.

3

Handover for Hauling

Real-time coordination between excavation and hauling units achieves seamless material flow and eliminates idle time.

Following extraction and segregation, coal is temporarily stockpiled in designated, clean areas to prevent contamination and optimize loading. Here, systematic quality inspections are conducted, including visual assessments, moisture content measurements, and verification of segregation by quality grade. Trained inspectors ensure the material meets specified parameters, using calibrated moisture meters to document results, critical for product quality and hauling efficiency.

The handover process from excavation to hauling is managed with real-time coordination to ensure continuous material flow and maximize equipment productivity. Production supervisors monitor extraction rates, inventories, and hauling capacity, using radio communication for dynamic scheduling. This minimizes equipment idle time and prevents bottlenecks, ensuring efficient coal movement from the pit face to processing or loading facilities.