DEEPER RESERVES®

mining solutions ahead of change

Civil & Environmental Consultants, Inc.
Mining companies must stay ahead of the curve to respond to regulatory changes as well as market changes.

With diversified expertise and deep bench strength, CEC is a valuable resource uniquely positioned to provide solutions that address the industry’s changing needs.

CEC has successfully integrated civil and geotechnical engineering design with ecological and environmental expertise to offer a full suite of services that benefit the coal, aggregate, and hardrock sectors of the mining industry. This multi-disciplined approach to mining industry consulting has led to the successful completion of a wide range of projects — from design and permitting of refuse disposal areas, to water treatment studies, to assessing and mitigating ecological resource impacts.

The strategic hiring of mining professionals has enabled CEC to harness a wealth of direct industry experience. These seasoned experts are able to identify challenges and address needs from the vantage point of the owner.

Civil & Environmental Consultants, Inc. (CEC) provides comprehensive market-oriented consulting services that advance the strategic business objectives of our clients. CEC is recognized for its innovative design solutions and integrated expertise in air quality, civil engineering, ecological sciences, environmental engineering and sciences, survey/geospatial, waste management, and water resources.
THE CEC ADVANTAGE

What sets Civil & Environmental Consultants, Inc. (CEC) apart is that we put ourselves in our clients’ shoes and make recommendations from the strategic vantage point of the owner.

Industry Experience
CEC understands the mining business from the inside and can complement an existing staff. Our industry experts have utilized their experience and strong regulatory and technical backgrounds to tailor CEC’s internal resources to best serve mining companies.

Regulatory Insight
CEC relies on thorough knowledge of environmental regulations to determine applicable requirements. CEC is able to leverage established relationships and help clients negotiate with regulatory agencies, as well as lend valuable insights to help streamline the permitting process.

Environmental Compliance
CEC provides robust environmental services to tackle everything from preventing and containing spills to managing disposal. Client-customized data management systems along with high-quality monitoring help clients efficiently track their environmental compliance and reporting obligations.

Ecological Expertise
CEC evaluates the possible effects of mining on streams and wetlands and designs plans to mitigate impacts. Biological monitoring services can be implemented to develop cost-effective variances to permit requirements, reducing facility operation or construction costs.
MINE OPERATIONS

CEC has direct experience with the issues and requirements mining companies are facing, allowing operators to focus on achieving maximum output and return on investment.

Compliance
Whether the goal is to establish or maintain compliance, CEC environmental compliance audits help address or correct issues. CEC’s innovative tools help clients manage vast amounts of environmental data, monitor compliance performance, and track requirements for reporting.

Hydrologic modeling, water quality impact assessments, and collection and treatment systems design help clients manage their discharges. To characterize the type and magnitude of stack and fugitive emissions, certified testing personnel perform source emissions testing using a state-of-the-art mobile laboratory.

Optimization
CEC helps clients maximize returns by evaluating treatment processes to optimize systems or by determining ways to prevent system problems from occurring. CEC evaluates water or air quality pollution control systems to meet new or stricter effluent and emission guidelines.

Expansion Projects
Geologists evaluate in-situ reserve estimates, characterize lithology, and identify geologic structures. Ecologically sensitive areas are identified to streamline the permitting process and minimize long-term effects on local ecosystems. Environmental due diligence helps identify potential liabilities and characterize risk. Civil engineers and site designers provide permitting, construction management, and CQA services, while scientists develop baseline air quality and groundwater models to evaluate process water needs and potential development impacts.
MINE CLOSURE

When reserves are exhausted or extraction becomes cost-prohibitive, CEC provides the expertise mining companies need to transition through the closure process.

Site Reclamation
CEC integrates design and engineering and also manages the permitting and approval process for successful reclamation projects. Soil scientists examine cover strategies, compare the effects of topography and surface soil cover on erosion, and evaluate revegetation alternatives for refuse or tailings sites. CEC designs functional stream and wetland systems and creates compensatory habitat through a variety of mitigation techniques.

Air Quality and Water Quality Assistance
Meteorologists and air quality scientists perform modeling to predict impacts on human health and ambient air quality and can evaluate various methods of dust control to help obtain approval for closure plans.

Stormwater management and grading plans help divert runoff from open pits, while hydrogeologists analyze methods and time frames for pumping, treatment, and discharge of underground mine water. CEC develops comprehensive water quality and flow assessments to determine which discharges are best for treatment and provides environmental and engineering services for collection, transport, and treatment systems.

Post-Mining Land Use
Site planners and civil engineers evaluate post-mining land use options to achieve the highest and best use possible — even encouraging repurposing facilities. CEC’s real estate experts are instrumental to the process, and many properties go on to generate revenue.
Ecological
- Threatened and endangered species assistance
- Aquatic ecology studies (e.g., benthic macroinvertebrates, fish, and mussels)
- Stream impact evaluation and mitigation
- Wetland and stream delineation, impact assessment, and mitigation design
- Soil and revegetation studies

Engineering
- Refuse/tailings disposal design and permitting
- Dam and impoundment design, permitting, and inspection
- Hydrologic and hydraulic modeling
- Design of stormwater handling structures
- Erosion and sedimentation controls
- Site layouts, including road networks
- Geologic studies for greenfields/expansions/reserves
- Geotechnical instrumentation and monitoring

Environmental
- Air and water quality monitoring/studies
- Compliance audits and assessments
- Environmental management systems (ISO 14001)
- Client-specific GIS and data management interfaces
- Mine subsidence investigations and remediation
- Mine closure assistance and evaluations
- Preparation of SPCC and PPC plans
- Due diligence
- Permitting

Water Resources
- Water treatability studies
- AMD treatment plant design (passive and active)
- Total Maximum Daily Load (TMDL) studies
- Pre- and post-mining water quality studies
- Probable Hydrologic Consequences (PHC) studies
- Surface and ground water baseline and impact studies

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