

CASE STUDY

Digging Deeper: GSC's Blueprint for Safer, Smarter Mining

The Business Challenge

Mining is an industry characterized by extreme working conditions and stringent safety regulations governed by the Mining Safety & Health Administration (MSHA). Miners face hazards including exposure to explosives and chemicals, working underground with limited lighting and air quality, and operating large equipment in precarious environments. Additionally, the remote locations of mining sites pose challenges in recruiting and retaining employees and accessing emergency services, compounded by the standard practice of 12-hour rotating shifts.

To address these challenges, GSC On-Site Services (GSC) collaborates with multiple mining clients, providing comprehensive services designed to enhance safety, ergonomics, injury prevention and training. The primary objective is to conduct thorough Job Analysis (JA+) and implement solutions that mitigate risks and improve operational productivity.

The Objectives

GSC's engagement with mining clients begins with a detailed Job Analysis (JA), adhering to Department of Labor standards to systematically identify the essential functions and physical demands of each job.

The objectives are:

THE INDUSTRY

FORTUNE 500 CLIENTS

ABOVE GROUND MINING

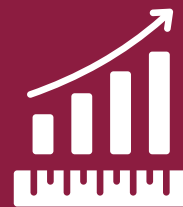
PHYSICALLY DEMANDING

HIGH INCIDENT RATES

HIGHLIGHTS

512

JA+ COMPLETED



ANTHRO CHART

13.2X 6 YR

ROI ON IPS PROGRAM

TIME SPENT



G•S•C
ON-SITE SERVICES
A GSC Consulting Services Company

To provide actionable insights through deliverables such as Physician Summary Reports, Ergonomic Risk Assessments, HR Job Descriptions, and Pre-Employment/Post-Offer Agility Tests.

To enhance injury prevention through specialized services and continuous improvement training.

To ensure all solutions are defensible, ADA/EEOC compliant, standardized, non-disruptive, cost-effective, and high quality.

Implementation

To enhance the safety and efficiency of our mine sites, we implemented several targeted initiatives that focus on comprehensive job analysis and injury prevention. These initiatives were designed to address the unique challenges faced by miners and to foster a safer working environment. The key components of our implementation process are as follows:

Job Analysis+ (JA+)

- A New Miner Certified GSC Job Analyst collaborates with miners to measure force, weight, frequency, work postures, and positions related to job demands. This comprehensive analysis culminates in a wrap-up meeting where findings are presented, and all deliverables are securely shared with the customer.

Injury Prevention Specialist (IPS) Program

The IPS program involves placing a full-time GSC employee on-site to work closely with HR, Operations, EHS, and on-site medical staff. This role includes:

- Participating in new hire orientation with body mechanics and flexibility exercises.
- Providing early symptom intervention services to reduce absences and enhance safety.
- Offering ongoing ergonomic assessments and training.
- Developing and delivering educational materials on fatigue, shift impacts, sleep, diet, and the use of caffeinated drinks.

Challenges & Solutions Identified

In our efforts to improve safety, prevent injuries and incidents at the mine sites, several significant challenges were identified, each requiring tailored solutions to address effectively. The following outlines these challenges and the innovative solutions implemented:

Physical Capability Agility Test for EMT Roles

Challenge: Ensuring EMT applicants can meet the physical demands of their job.

Solution: GSC developed and validated a job-specific Pre-Employment/Post-Offer Agility Test, which is supplemented with comprehensive training videos and training materials. This approach ensures that EMTs are physically prepared for their demanding tasks.

High MSHA Incidents and Lost/ Modified Work Time

Challenge: Reducing the frequency of incidents and the associated lost or modified work time

Solution: The implementation of the Injury Prevention Specialist (IPS) program addresses this challenge by teaching proper body mechanics, providing early symptom intervention, and conducting regular ergonomic assessments and training. These measures aim to minimize incidents and promote a safer work environment.

Worker Fatigue & Unexpected Naps

Challenge: Managing fatigue, particularly in the context of rotating shifts.

Solutions: Customized educational materials and training sessions were created to specifically address fatigue. These resources help increase awareness among workers and reduce the occurrence of unexpected naps behind the wheel, contributing to overall improved productivity, safety and continuous improvement.

By systematically addressing these challenges, we have helped our mining customers to implement effective solutions that enhance the productivity, safety, quality, and reduce absences.

Results & Benefits

The implementation of GSC's solutions has led to:

- **Job Analysis+:** Conducted baseline assessments of jobs at mine sites to understand the physical requirements and provide deliverables such as Job Analysis Reports, Physician Summary Reports, and Ergonomic Risk Assessments.
- **Improved Hiring & Retention:** Pre-Employment Post-Offer agility test EMT roles and better training materials contribute to more effective hiring processes and improved employee retention.
- **Reduced absences & injuries:** Early intervention and ergonomic assessments have decreased work-related injuries and absences.
- **Enhanced productivity & quality:** Ongoing training and ergonomic improvements have boosted overall operational productivity and quality.
- **Cost reductions:** Lowered costs related to short-term/long-term disability and work-related cases.
- **Compliance & Reliability:** Ensured all practices are ADA/EOC compliant, standardized, and defensible, maintaining high-quality and non-disruptive operations with effective return-to-work strategies.

Measuring Our Impact

At GSC On-Site Services, measuring our impact is crucial to ensuring the effectiveness of our initiatives. During our time at a mine site, we meticulously collected data on the injuries resolved through our Prevention Plus Program, which focuses on early symptom intervention to eliminate musculoskeletal disorder (MSD) recordables. This program is strictly first aid only, adhering to OSHA's stringent first aid guidelines and avoiding any measures beyond typical first aid. By keeping health services informed and involved, we ensure that employees receive the highest quality of care. Our commitment to data collection and adherence to best practices allows us to demonstrate the tangible benefits of our Prevention Plus Program in creating safer, healthier work environments.

The data below was collected over a 90-day period at this mine site, showcasing the remarkable success of our Prevention Plus Program. During this time, all 23 injuries were effectively resolved within the framework of our first aid-only approach. As a result, the mine site experienced zero recordable MSD injuries throughout our tenure. The accompanying table displays the types of injuries, the direct costs associated with each injury type, and the indirect costs, which were gathered from MSHA in 2016. This data, collected in September 2018, underscores the significant impact of our program in preventing serious injuries and maintaining a safe working environment. By resolving injuries early and efficiently, we not only improve employee well-being but also contribute to substantial cost savings for the mine site.

INJURY TYPE	DIRECT COST PER CLAIM	#	DIRECT COST	INDIRECT COST	TOTAL COST
CONTUSION	\$1400	5	\$7000	\$14,840	\$21,840
FINGER & HAND CONTUSION	\$830	4	\$3320	\$7038	\$10,358
FINGER & HAND LACERATION	\$1300	4	\$5200	\$11,024	\$16,224
JOINTS/CONNECTIVE TISSUE INFLAMATION	\$26,400	9	\$23,7600	\$50,3712	\$741,312
OPEN WOUNDS	\$910	1	\$910	\$1929	\$2839
TOTAL INJURIES	\$30,840	23	\$254,030	\$538,544	\$792,574

THE INJURY SUMMARY TABLE DISPLAYS THE MOST COMMON INJURIES AND WORKER ACTIVITIES FOR THE SELECTED MINING COMMODITY AS REPORTED TO MSHA IN ONE YEAR. THIS ANALYSIS WAS PERFORMED USING 23 OF THE INJURIES DURING THE 90 DAY IPS PROGRAM AND THE ASSOCIATED COSTS ESTIMATED WITH THOSE TREATMENTS.

Challenges

The primary challenge in the mining industry is managing change. Effective use of data to drive change, particularly in employee habits related to fatigue, injuries, productivity, and quality, is essential. The nature of mining work and its rural, hazardous environment necessitate dynamic, customizable solutions.

Lessons Learned

The mining industry presents unique challenges, but the core lesson is the importance of developing dynamic, adaptable solutions tailored to each site's specific needs. GSC's approach demonstrates that with thorough analysis, tailored interventions, and ongoing support, even the most challenging environments can see significant improvements in safety, efficiency, and employee well-being.

Final Thought

GSC On-Site Services has proven that a systematic, data-driven approach combined with practical, customized and integrated solutions can effectively address the inherent challenges of the mining industry. Through rigorous Job Analysis, innovative injury prevention programs, and targeted educational initiatives, GSC helps mining companies achieve safer, more productive operations.



GSC On-Site Services played a pivotal role in streamlining safety protocols for a mining company. While not every company may require an outside vendor, those facing resource constraints or organizational changes can benefit significantly from the expertise and efficiency of a third-party vendor. GSC's objective approach, focusing on how the job should be done, rather than how it has been done, can be a game-changer in the mining industry.

For companies in the mining sector, where risks are high, an external perspective is crucial for addressing compliance and safety needs effectively. By considering factors such as cost, time, resources, and outcomes, companies can make informed decisions to enhance their safety preparedness. For all GSC On-Site Services clients, the savings achieved through our services far exceed the program costs. Now that's a true return on investment! Third-party services like GSC On-Site Services bring experience, efficiency, and objectivity, helping organizations navigate the complexities of mining safety. For more information, visit GSC On-Site Services' website or scan the provided QR code.



G·S·C
ON-SITE SERVICES
A GSC Consulting Services Company



844.243.6868



INFO@GSCONSITE.COM



WWW.GSCONSITE.COM