

## 6.1 HEALTH AND SAFETY

### 6.2 Overcoming Barriers to Safety Performance

Instilling a culture of responsible safety behavior has become inevitable in the daily operation of the mine. A number of measures and techniques have proven successful in encouraging workers with varying degrees of commitment to safety, to adopt uniform safety behaviour.

Monitoring performance, identifying emerging issues, addressing problems, reporting and evaluating, are also key elements of any safety program. Operating a just culture where people are recognized and rewarded for their safe practices as well as holding them personally accountable, will bring management systems to life and bring the mine closer to a workplace free from harm.

### 6.3 Activities Undertaken in the year 2013

Most of the programs were channeled to build the capacity of the employees to identify hazards, knowing their risk levels, developing and implementing control measures. Basically, education and training became the hallmark of the section since they were the medium to carry out information to the employees. These went on through toolbox meeting, Planned Inspection, Planned Task Observations, enforcement of Road Safety Regulations, Induction Training for New Employees, those resuming from annual vacation leave and visitors.

Periodically, fire drills were organized for employees at various sections to build up their confidence level on the use of fire extinguishers as part of emergency preparedness. Generally, the team ensures that compliance is adhered to on the mine. Monthly, fire extinguishers and first aid boxes on the mine were inspected and recorded. See Plate 25 and 26 show fire drill for CAT/EME/LV and Civil Departments.



*Plate 25: shows fire drill for CAT/EME/LV Dept.      Plate 26: shows fire drill for Civil Department*

#### **6.4 Brief report on Training and Induction carried out in 2013**

General training was handled by the training department; Induction and other health and safety training were scheduled for every Tuesday and Wednesday of the week. Basically, it was programed into four main sessions. The first part took care of the background and basic rules in Ghana Manganese Company. The second part also took care of training on Safe Working Procedures on the mine.

Health, Safety and Environmental training were conducted on the second day of the program. It was documented and attendance register was marked and signed by the participants individually. Total number of employees who went through induction were (454), new employees were (23), Third party were (342), National Service Personnel (15) Attachment (25) and students who visited the mine for the purpose of excursion (345). In all, 1204 people went through Induction Training in 2013. Finally, twenty (20) employees and fifteen (15) people from the communities were trained on how to administer First Aid to casualties in any emergency situation.

#### **6.5 Accident / Incident Investigation and preventive measures**

Accidents/ Incidents are unplanned events that interrupt production and may cause injury or property damage. Therefore occurrence of accident needs proper investigation which would unveil what really happened, determines the underlining cause, and develops and implements control measures. In 2013, the mine recorded total number of thirty (30) incidents/Accidents, eight (8) lost time injuries (LTI) and 22 equipment damaged. Investigation conducted on accidents which occurred on the mine, led to the following needed control measures to be undertaken to prevent future occurrence.

- General safety education was carried out through the year at daily toolbox meeting. All accidents that occurred on the mine were also discussed with their corrective actions.
- Drivers/Operators who had accidents were retrained before their equipment were handed back to them.
- All third party contract drivers were retested and those who passed were provided with GMC's permit to drive on the mine.
- Adequate illumination was provided at selected areas with poor visibility that contributed to the accident and posed danger to workers.
- The department introduced speed gun to control over speeding on both the mine and the mine village. This yielded a positive result.
- Random alcohol testing was carried out, culprits were disciplined accordingly.

#### **6.6 Establishment of Emergency Response Center (ERC)**

Emergency is unforeseen situation that threatens employees, visitors, the public, disrupts operations and could cause environmental damage. For that matter, as part of the Emergency Preparedness, Emergency Response Center (ERC) was established in 2011 to cater for all kinds

of emergencies. The Centre is run on 24hrs shift; within which the team would be alert for emergency calls.

In the year 2013, the Emergency Response Team, attended to (12) fire incidents out of which two (2) was outside the mine. They also attended to (145) Medical cases and (6) accident victims. In all (159) cases were responded to in 2013.

## **6.7 Fire Extinguishers and Risk Assessment**

As part of emergency preparedness, fire extinguishers are positioned at vantage points on the mine and all the equipment have been provided with. Every employee has been taken through the procedure to extinguish fire. Fire drills are conducted periodically to build up confidence level of employees. Fire Extinguisher checks are done monthly to know their conditions for necessary actions to be taken.

Below are the number of fire extinguishers on the mine and their distributions. The total number stands at two hundred and forty (240);

- Equipment – 65
- Light vehicles – 40
- Other Locations on the Mine – 72
- Other Locations Outside the Mine – 34
- Reserves in our store room - 29

## **6.8 National Safety and First Aid Competition, 2013**

Preparations towards the competition started in April, 2013 with fifteen (15) employees selected from all the departments/sections on the mine as the GMC mine team, fifteen (15) as the mine's community team, with four (4) facilitators. The competition day was 24<sup>th</sup> August, 2013, at the Dadwen school park – GMC. The mine team placed second to Tarkwa Goldfields, whilst GMC's community team came first in the community category. See plates 27 and 28 show IDMC officials at the competition and GMC team performing scenario.



*Plate 27: shows IDMC officials at the competition. Plate 28: shows GMC team performing scenario*

The inauguration of the National Safety week came with some activities such as cross country, Health walk, 100meters race, football gala among the mine communities and sensitization of drivers and workers of the GPRTU-Tarkwa branch at the main Tarkwa station on road safety. The community team represented GMC at the national level, which was held at AngloGold Ashanti – Tarkwa mine on the 23<sup>rd</sup> of November, 2013.

GMC's community First Aid team placed third position. In summary, everything about the competition went well. See plates 29 and 30 show GMC team and GMC Community Team.



*Plate 29: shows GMC Community Team*



*Plate 30: shows GMC team*

## **6.9 Staff Development Programme**

In pursuance of the commitment of management to promote knowledge, skill and talent development of its workforce, the Company recognizes the need to develop its people so that they become fully equipped with the necessary skills and technology to deliver the Company's business objectives. Ghana Manganese Company Ltd (GMC) supported quite a number of training and development programmes in the year 2013. This commitment to training has been congruent with yearly increase in budget allocation for training activities. Under the year of review, all departments of the company benefitted from training programmes.

It is the hope of management that, beneficiaries of such training programmes will be retained over a long period of time for the company to reap the benefits of these substantial investments that have been made into developing its human capital. The 2013 report covers three (3) areas which are technical trainings, professional development programmes and industrial practical trainings. Total amount spent on training for the year under review was US\$ 196,802.

## 7.0 Technical Trainings

Below are some specific details of the various training programs that were carried out across the various departments in the year 2013.

- Reinforced Concrete Design (Jan 29- Feb 14). GMC engaged the services of a consultant from the Kwame Nkrumah University of Science and Technology, Kumasi, to conduct this particular training programme for the Civil Department. Three (3) civil engineers benefitted from this training. The consultant took the participants through the theoretical basis of calculating and designing steel works on building and constructional projects. In addition to the theories, the trainer took participants through practical sessions as well to make sure participants understood the connection between theories and practice. This particular training is in line with one of the many training programmes meant to execute the company's succession plan.

At the end of the nine (9) days training which was split into three (3) sessions, participants confirmed that the training had been useful. According to the participants, the training has helped them to appreciate how theories that explain reinforced concrete designs can be made practical in the real world of civil works. It is hoped that, the next phase of the programme will continue in 2014.

- Use of Bit Grinding Equipment Product (February 19-20). This training was organized by Atlas Copco. GMC presented three (3) candidates from the Drilling Section for this programme. The purpose was to sharpen the skills of drillers in the appropriate use of the Bit Grinding Equipment. The programme took place at the Tamso Lodge, Tarkwa. Participants were taken to the field for practical work on the second day of the programme at the Golden Star Resources Ltd, Akyempim mine site. The Drilling Supervisor, Mr. Victor Adimah, who was a participant, asserted that the training was useful. He promised to share the knowledge he had gained from the training with his subordinates as part of the company's skill management best practices.
- Slope Stability and Embankment Design Training (July 10-12). This programme was organized by a Kenyan-based consultancy firm called AMC International. The training took place at the Airport View Hotel, Accra. The Ghana Manganese Company Ltd presented three delegates to participate in this programme. The purpose of the training was to enrich participants' geological skills in designing slope stability and embankment for effective mining operations. The three participants who returned from the training indicated that the programme was insightful and that, it had built their confidence well enough to apply the knowledge gained to the work they do as geologists.
- Crusher Maintenance Training Workshop (July 24-27). The Ghana Manganese Company contracted SANDVIK Mining and Construction Ghana Ltd to train selected Carbonate Plant workers on maintenance practices. Participants were taken through the rudiments of scheduling plant maintenance and critical areas of the plant that should be given attention when planning for maintenance. The training took place at the Senior Staff Club House of GMC.

## **7.1 Training on Heavy Duty Equipment**

- The company (GMC) procured four (4) new Komatsu 875 Dump Trucks during the year 2013. To ensure efficient and effective use of these trucks, GMC arranged with Komatsu to train eight (8) Heavy Duty mechanics on how to service and repair these trucks (March 18-22).
- In a similar event, eighteen (18) Dump Truck Operators were also trained on how to handle the equipment for efficient and effective use. The overall goal was to ensure higher productivity, reduced down times and to ensure a long life span of the newly purchased equipment (March 27-28).
- During the month of April, mechanics and operators of the newly acquired PC 2000 Komatsu Excavator equipment were trained. Again, the purpose was to ensure high level productivity of the equipment, long life span and reduced down times (April 29-30).
- Machine Performance and its application training (April 15-19): CAT/MANTRAC organized a 5-day residential training for mechanics and operators at Takoradi. GMC presented a candidate (Mining Training Officer) to participate in this programme. The purpose of the training was to expose participants to new technologies that CAT is introducing unto the market. Second was to address challenges that clients face with use of CAT machines and how such problems could be avoided or fixed when they do arise. The delegate from GMC reported to management that, the training was very useful and that he would incorporate the knowledge gained from the programme into his training sessions. The direct cost of sending a candidate to participate in this programme was GHC 1,119.82.

## **7.2 Practical Drill & Blast Master Class Training (May 13-16)**

- Neoedge, a Singapore-based consultancy firm, organized a 4-day Master Class training on Drill and Blast at the Holiday Inn Hotel, Accra. The Ghana Manganese Company (GMC) presented two candidates (a Drill Supervisor and a Blast Supervisor) for this course. Participants of this programme learned new technicalities involved in drilling and blasting which hitherto, they did not know about. Specifically, the two candidates from GMC mentioned that, the training helped them to understand the kinds of calculations that must go into drilling and charging of holes that will reduce blasting vibrations and travel distance.

The drill and blast crew indicated that the newly learned technique would go a long way in solving the not too often problems (such as excessive dust pollution and vibrations) that used to occur in connection with blasting activities in the mine pit. The participants promised to apply the acquired knowledge diligently to minimise dust pollution and vibrations which usually incur the displeasure of nearby communities when they do occur. Secondly, the two candidates pledged to share the knowledge acquired with their subordinates to ensure that this valuable knowledge is well managed and retained among

the drill and blast crew. The good news is that, the company (GMC) has not yet received a complaint regarding dust pollution from any of the nearby communities ever since the two supervisors returned from this training and started putting the newly acquired skills into practice.

### **7.3 Training Workshop on Lab View Software (May 13-17).**

- The 5-day training workshop was organized by National Instrument (NI) - South Africa in collaboration with Korsika Energy Research and Services Ltd. The programme was conducted in Accra. One supervisor from the IT/Electrical department was delegated to participate in this programme. The purpose of the programme was to train participants on how to use the Lab View Software to diagnose and repair electronic faults on industrial equipment such as plants and machines. The organizers took participants through topics such as: Introduction to the Lab View hardware and software, navigating the Lab View software, parts of the Lab View and their functions, troubleshooting and debugging. One of the key lessons participants learnt from the training is on how to use the Lab View Software to design, control and monitor an interface. Specifically, the software could be used to programme a system such that, a) an operator can remain in a control room to monitor and control a plant without necessarily going to the electrical control panel, b) it makes it easier for operators to report on actual problems and c) the process reduces down times and increases productivity as well.

The GMC candidate made some recommendations to management. He indicated that, management should establish a working relationship with Korsika Energy Research and Service Ltd to facilitate onsite learning that will help develop technical workers on use of modern technologies. He also recommended to management to engage National Instrument to assess and install the Lab View software on company plants because it will reduce downtimes and also increase productivity.

### **7.4 Advanced First Aid Training For Trainers (June 2-8)**

- As part of preparations for the 2013 Safety/First Aid competitions among mining companies, St. Johns Ambulance organized a 7-day residential training programme for representatives of mining companies. The training helped the two safety reps to understand what was required for preparations towards both the zonal and national competitions.

### **7.5 SURPAC Resource Modeling Workshop (Sept 24-Nov. 5).**

- BS GEOVIA (formerly called GEMCOM) was the organization that organized this programme at Hotel de Hilda, Tarkwa. The Mining Department of GMC presented seven (7) candidates for this programme as part of developing the skill of workers in the

department in using mining software programmes. A total of US\$ 5,200.00 was spent on this programme.

- SURPAC Resource Modeling Workshop (March 25-29). This programme was organized by GEMCOM/BS GEOVIA from South Africa at the Hilda Hotel, Tarkwa. Three (3) senior officials from the mining department participated in the 5-day programme. The purpose was to train participants on how to effectively use the SURPAC software in modeling resource for planned mining operations. Participants found the training to be useful at the end of the programme because they could apply the knowledge gained to improve their work.

## **7.6 Managing HIV/AIDS in the Workplace (Oct 30-Nov 1, 2013)**

- VULTHLARI Corporate Training Academy, South Africa, organized a 3-day training programme on “essential skills on managing HIV/AIDS in the Workplace” at the Holiday Inn Airport Hotel, Accra. The Ghana Manganese Company presented three (3) delegates from the Medical Department to participate in this programme. The three persons are; Millicent Believe Asempapa (a nursing officer), Agnes Arku (Nursing officer) and Stephen Gyabaah (Lab Technologist). During the 3-day period, participants were taken through topics such as laws governing HIV/AIDS patients at the workplace, how to reduce stigmatization as well as behavior change communication interventions. Other topics are; understanding HIV/AIDS mainstreaming, communication and counselling skills, scientific and experiential basic facts of HIV/AIDS among others. As health workers of the company, the three delegates promised to monitor the health of workers and support HIV/AIDS patients with the acquired knowledge and skills. The company was provided a resource handbook for referencing purposes.

## **7.7 Professional Development Programmes**

- Training programs were designed and carried out with the aim of among other things, developing the workforce along their career path in order to gain increased expert knowledge in their fields of operation. The following are the specific training programs that took place in course of the year:
- Preparation of Shift Bosses for Mine Captaincy Certification. (March to October): Preparation of three (3) Shift Bosses for the Mine Captaincy exams which was organized by the Minerals’ Commission of Ghana continued in the year 2013. After going through the first phase of training from October to December 2012, management again approved a budget for the next phase of eight (8) months training. This lasted for the period March to October 2013. The same consultant, (Mr. J. A. Eshun), was engaged to continue with this training. Unfortunately, one of the three (3) candidates resigned mid-way the training period so only two participants successfully completed the training programme and successfully passed their exams as certified Blast Men by the Ghana Minerals’ Commission.

- National Examination Board in Occupational Safety and Health (NEBOSH) Certification programme (Oct –Dec).
- The HSE department nominated two candidates from its outfit for professional training and certification by NEBOSH, a UK based institute for Occupational Health and Safety programmes. The purpose was to beef up the number of Health & Safety professionals in the department to handle the increasing demands of health and safety activities on the mine. By end of the 2013, the two candidates had finished with the course work and are waiting to write the professional exams in the first quarter of 2014.
- Physician Assistants Annual Conference for Professionals. The Physician Assistant of the Medical Department was sponsored to participate in the annual conference for Physician Assistants in Ghana. The conference was organized by the Ghana Medical Association in collaboration with the Ghana Health Service to develop their professional knowledge on current practices and to be abreast the appropriate medication to be administered in specific situations. The program took place at the Ho in the Volta Region of Ghana from October 22-25, 2013.
- Advanced Diploma in Business Studies (June 8-Dec 12). One of the junior staff of the HR/Administration Department was sponsored by the company to pursue Advanced Diploma in Business Studies as part of its professional development programmes. The course was run by Kalf Consult as an agent for the UK based Chattered Institute of Marketing (CIM) programme. The sponsorship was granted to Gifty Ahmed on the basis of her commitment to duty and the fact that she has the potential for further development. At the moment, she has completed all the course work and all the required examination papers have also been taken. She is awaiting results by end of quarter 1 of 2014
- Annual Land Surveyors Seminar and Continuous Professional Development by the Ghana Institution of Surveyors (August 28-29).
- As part of the company's succession plan, efforts are being made to develop up-and-coming talents to assume critical positions of the company with the view to ensuring continuity in its operations. Specific example is the case of the Survey Unit of the Mining Department. GMC sponsored Mr. Isaac Ekow Anaman to pursue professional certification in Survey as prescribed and recognized by the Ghana Institution of Surveyors (GhIS). Luckily enough for company, Mr. Anaman was successful in his examinations and was certified by the GhIS in the year 2013. Mr. Anaman's success in becoming a certified Surveyor brings a lot of benefits to the company. He is in a position to certify all company survey documents as required by regulatory bodies. His ability to signed company documents will save the company the huge cost it would have incurred in outsourcing certification of such documents. The company (GMC) is proud about this achievement.

## **7.8 LEORON HR Certification workshop**

- The LEORON Professional Development Institute organized a five-day Personnel/HR certification programme in Accra from December 09-13, 2013 for HR practitioners. The HR/Administrative Manager of GMC participated in this programme and came out successfully with a certificate in Human Resource Management Professional. It is hoped that, this professional knowledge will impact on the operations of the HR/Administration Department as well as on the industrial relations terrain in the company.

## **7.9 Professional HR Certification Courses**

- Three candidates from the HR/Administration department were sponsored by GMC to pursue the Senior Professional in Human Resource (SPHR) course. This globally recognized programme is run by the Human Resource Certification Institute (HRCI) in the United States of America. The candidates are preparing to write the certification exams in 2014.
- In a similar development, another candidate from the HR department was sponsored to pursue the Professional Human Resource (PHR) certification programme. She had to postpone writing the exams because of maternity reasons. It is hoped that, she will re-organize to prepare for the exams in 2014.
- In another development, the company sponsored the registration of the four (4) candidates as members of the Society for Human Resource Management (SHRM) at an annual subscription fee.

## **8.0 HR/Administrative and Financial Literacy Trainings**

- Industrial Relations Workshop (March 20-22): The Ghana Chamber of Mines engaged the services of KOX Consult to organize a five-day non-residential workshop on Industrial Relations for its member-companies. The purpose was to ensure that senior level officials kept a very good industrial relations atmosphere at their respective work places. GMC delegated three officials who were selected from the Mining, Finance and HR departments to participate in this programme. Topics such as; the Labour Act, Workman's Compensation Law and negotiation skills among others were treated. At the end of the workshop, participants testified that, the 5-day programme had been very insightful and beneficial. The organizers awarded certificates of participation to the delegates at the end of the programme.
- Income Tax Education Forum (March 13). This programme was in response to needs that emanated from GMC workers on how income taxes are calculated on salaries and other incomes. As a result of this need, the HR and Finance Departments engaged the Ghana Revenue Authority (GRA) to educate workers on how tax laws apply to incomes such as basic salary, allowances and bonuses. Tax Officers from the GRA visited the mine site to

do a presentation on the tax laws and how those laws apply to incomes of GMC workers. To ensure spread of the knowledge gained, participants were selected from all departments as well as representatives of the Ghana Mine Workers Union (GMWU), GEMM and the Professional and Managerial Staff Union (PMSU).

The tax officers used different salary and income scenarios to explain how taxes are slapped on earned incomes of every worker. In addition, about 45 minutes time was allowed for questions and answers. The team from the GRA successfully answered all questions raised by GMC workers to the extent that participants understood why a tax deduction on their pay slips increase with incomes increase.

The impact this training has made is that, workers have stopped complaining about tax deductions they see on their monthly pay slips ever since this tax education programme was organized. Secondly, workers' trust in the Finance Department has improved as a result of this programme.

- Facilitation & Presentation Skills Training (April 10-12). Twenty-three (23) participants comprised of eight (8) First Aiders and fifteen (15) departmental safety reps were taken through the basics of facilitation and presentation skills. The Training was organized by the Training Unit of the HR/Administration department. The purpose of the training was to build the skills of participants to use facilitation and presentation skills to moderate morning safety meetings. Some of the key topics treated were adult learning principles and training methods, presentation and facilitation skills, mobilization skills among others. The last day of the training was used for practical sessions. Participants were awarded certificates of participation at the end of the programme.
- Financial Literacy Training (May 8): The training unit of the HR/Administration department organized a day in-house training session on benefits of savings and investment towards a comfortable retirement for fifteen (15) members of Ghana Mine Workers Union (GMWU) and eleven (11) members of the General Manufacturing and Metals Workers Union (GEMM). The training was in line with management's objective of encouraging workers to save and invest rather than borrowing.

The training made some immediate impact where four of the participants after the programme made arrangements with the Data Bank, Ghana, to start investing. Some of the investment products they selected were EPACK and MFUND. The Finance Department of GMC assisted with monthly deductions into these funds. It is the hope of management that this programme will continue to run probably till end of 2014 to ensure that, the objective for which the programme was designed will be achieved to a large extent.

- Public Education on SSNIT (Nov. 6). The company selected representatives of workers from all departments and the three (3) labour unions to participate in this public education programme. The programme was facilitated by the Tarkwa-Nsuaem Municipal Branch Manager of SSNIT. Key among the issues he touched on are; the laws governing the SSNIT pension scheme, the minimum number of months one needs to contribute before one qualifies for pension claims, the kinds of preparations and documentation one requires to be able to access his/her pension claims, need for workers to continually ask

for their SSNIT statements as well as the need to constantly check the correctness of their SSNIT numbers on their pay slips. Other topics such as the 2nd and 3rd Tier pension schemes were also treated. The session was very interactive to the extent that, workers got the opportunity to ask questions and answers were provided. The facilitator advised participants to call on the SSNIT office to address their concerns whenever the need arises.

### **8.1 Industrial Attachment Programme (May to August, 2013)**

- During the year under review, 25 students spread across tertiary institutions of Ghana were admitted into the company for their industrial attachment programmes (internships) which is a requirement that engineering and mining students must meet before being able to graduate. Departments such as the Carbonate Plant, Mechanical Engineering, Met/Assay, Medical, Mining and Environment were the recipients of these students and each student was assigned a supervisor to mentor and supervise their work. The three month internship programme offered the students an opportunity to experience how practical the theories they learn at school apply at the industrial field. Their supervisors rotated the students on different jobs over the three month period. The students in their end of attachment report indicated that the programme had been very useful and beneficial to them because they were able to see how practical classroom work applies on the field of work.
- The company paid each student a monthly allowance of GHC 100.00 for three months at a total cost of GHC 7,500.00 for the 25 students. The company also supplied the students with personal protective equipment (PPEs) such as safety boots; crash helmets etc. as well as gave them a meal per day.

### **8.2 National Service Programme**

- Ten (10) graduates with backgrounds in engineering and mining were permitted to do their National Service assignment at GMC from October 2012 to July 2013. During the ten (10) month period, the National Service persons (NSPs) were taken through different job orientation programmes in their respective departments. This approach gave them a feel of how things work in the real work situations. The company provided the NSPs with PPEs, one meal a day and accommodation. In addition, the company paid a monthly allowance of GHC 243.48 which amounted to a total of GHC 24, 348.00 for the ten months.

### **8.3 University of Mines and Technology (UMaT) Student's Mine Tour**

- As part of strengthening the working relationship between UMaT and GMC, students of the university are allowed to conduct a mine tour on yearly basis. This helps the students to familiarize themselves with mining equipment they learn about as well as the processes that are involved in mining. The company allowed 225 students to conduct a mine tour from October 23 to November 15, 2013 where students got the opportunity to ask practitioners questions about things they observed on their tour.