



Ministry of Energy and Mines

SUMMARY:

The following remarks highlight some of the observations that were made by each auditor:

Part One – Health and Safety Program & General Rules

Phil Pascuzzi

One of the key elements to a good Safety Management System is documentation. While conducting this follow up audit, looking for documentation to support that meetings are taking place and training has been conducted, it was a bit scattered in trying to locate some of this documentation. On a couple of occasions this auditor was told that documentation had taken place on a subject but it appeared difficult to get our hands on the documents. There are now resources in place to help coordinate and centralize this documentation. This is a work in progress and is going to take some time but will definitely help in the future in being able to track and locate this documentation when required.

Crew meetings are extremely well documented, but there is no formal process in place to ensure that critical topics that get discussed at a safety meeting get discussed with employees that may have been absent from the meeting.

The Departmental OHSCs appear to be functioning quite well; the meetings are being conducted and minutes are documented. These minutes are now being posted in their respective areas. The OHSCs are making progress in getting the day to day concerns addressed at the front line level and not waiting for the committees to correct them. The only piece missing is a clear line of communication to and from the OHSC to the Mine Manager. Since the OHSC are tools for the Mine Manager to review and monitor the success of his safety program, there should be an easy and effective way for them to communicate their concerns or input to the Mine Manager.

The OHSCs are receiving the required training, but what they are trained seems to be decided by the Safety Department with little input from the OHSC's. Since the OHSCs are more of a Departmental committee they should each be discussing what training they feel they require which may be different from the other Departments.

The Field Level Risk Assessment (FLRA) has been rolled out to most employees. This process may be a good tool with which to identify and control hazards. There needs to be a concerted effort on the part of the workers and supervisors to discuss the hazards that are present and ensure the correct control measures are in place to protect themselves. It is imperative that should the risk exposure change while the job is underway, that the worker and supervisor readdress the control measure requirements to ensure to match the exposure.

It is going to be interesting to see how this FLRA process has helped identify risk and control over the next few years.



Ministry of Energy and Mines

Part Two – Occupational Health

Caroline Nakatsuka

There has been progress in addressing the concerns raised in the initial audit. There has been improvement in housekeeping and in the storage facilities and containment of chemical compounds. There has also been work on conducting Musculoskeletal Disorder Prevention Training. Work is still needed on the Workplace Monitoring Program. The program itself is to be written by the end of the year. It will encompass the anticipation/recognition, evaluation and control of occupational health hazards. The anticipation/recognition portion will be addressed by the Field Level Risk Assessment program and training and by safety tours, and there is good ongoing work on control development and implementation. Some dust and noise samples are being taken to address the evaluation portion but this will be further improved by the completion of an overarching workplace monitoring program/policy. This overarching program will describe the objectives of the program, outline what work will be done and how it will be done, and which departments are responsible for what duties. This program is scheduled to be done by the end of the year and the Ministry looks forward to reviewing it at that time.

Part Three – Personnel Safety and Emergency Preparedness

Steve Rothman

Section 3.1.4 Tampering with Safety Devices and Equipment

At the time of the audit the information was not yet complete, to be completed by August 31, 2011.

Section 3.2.3 Working Alone

When I asked for a written procedure from the Environmental Dept, there was nothing in writing only verbal.

When I asked the Services Dept for a written procedure on working alone, the only one that they could produce was from a contractor, but nothing for the department.

Part Four – Building, Machinery and Equipment

Greg McLean

During this follow up audit, only those sections of part four of the Code that were scored at three or less were reviewed, with the exception of those parts, that scored higher and where Highland Valley Copper mine officials indicated remedial actions had been taken place.

Generally, improvement was observed in most areas. Those areas of greatest improvement are: portable ladders, lockout compliance and maintenance of the hand railings on the mining shovels. Other areas showed improvement as well as indicated by the increase in the overall score for part four.

Some areas did not show the same improvement and will need further efforts to bring up to a score above three. These areas would include the storage of aerosol spray cans, the adjusting of rests on grinders and equipping of grinders with the required exhaust systems, the marking of lines that supply WHMIS



Ministry of Energy and Mines

products to dispensing locations (lube racks, cutting torch assemblies, etc...) and ensuring that pressure vessels are suitable certified.

In conclusion, I would like to commend Highland Valley Copper in their efforts and progress with regards to moving closer to full compliance with part four the Code and providing a safe workplace for all of the people who work on this mine site.

Thank you for your hospitality and the willing help provided to me during this follow up audit.

Part Five – Electrical

Terry Paterson

There is recognition that good progress is being made with respect to adopting and implementing the best practices defined in the CSA standard Z-462 (Workplace Electrical Safety). Along with HVC's developing Electricity Management Program workers now are much more aware of the hazards and control measures in place to prevent serious electrical incidents.

There is still significant work to be done with respect to handling and protecting mobile equipment trailing cable. This has been identified repeatedly over the years as deficient and now must be made a priority. There also remains considerable work to be done with respect to making "quick connect cable couplers" and "pit dewatering submersible pumping installations" compliant. Both these issues require priority scheduling as there are a significant number of these property wide. The condition of Electrical equipment rooms is noted as being much improved from the initial audit.

Part Six – Mine Design and Procedures

Rolly Thorpe

Since the initial audit in 2010, record keeping has improved in the shift boss log and the mishole log.

The dumping procedure has been revised to include a procedure for restricting access to the toe of active dumps.

Two run away lanes require straightening of their entrances and a new run away lane needs to be built on the ramp coming from the gravel stockpile.

The York Egress System (YES) was observed on a 345 excavator. This is a practical solution to a common hazard and should be promoted in industry.

Generally, mine design and procedures are effective and well done.



Ministry of Energy and Mines

Part Eight – Explosives

Steve Rothman

All issues identified in the audit have been addressed and the documentation supplied.
An additional item was identified during the audit and it was rectified immediately.
It was a pleasure to work with Blasting Group and a positive attitude was demonstrated.

Part Ten – Reclamation

Part Ten of the Initial Audit had a score of 100% which is well done.
In light of that scoring Part Ten was not reviewed during this Follow Up audit.



Ministry of Natural Resource Operations

AUDITOR'S SUMMARY:

Part One – Health and Safety Program & General Rules

Richard Booth

These comments are drawn from my reading of the information provided and discussing issues with the inspectors. The documentation was excellent and openly provided. There was however a feeling that things could be better and that is what I have tried to express here.

The mine had excellent training records that could only be improved by all being in one place. Each department had their own set of records, and the Safety Department also had some, they need to be in one database.

Crew meetings were extremely well documented, but we had some concerns that it was not mandatory to attend. There were also many negative comments from the field that not all supervisors welcomed questions and worker input.

The OHSC had multiple meetings and worked well. The monthly inspections took place and they were discussed and follow up was organised. The main concern was that the inspection picked up the day to day ongoing maintenance items that supervision should already be addressing. Workers commented to the auditors that it was often best to tell the black hat to get things done. Is this a case of supervision letting the black hat and OHSC do their work for them?

The OHSC requires better training, they are all eager to have the best mine and to work with HVC to be better yet we did hear comments about being treated as equals. More training of workers and management may assist with these issues.

The contractors that we contacted had their OHSC \tailgate meetings documented.

The move to the distribution of the OHSC minutes and policies and procedures in a paperless form is a concern to the auditors. Not everyone has access to a computer and whilst it is a good idea and keeps things current; how is the information communicated to the truck drivers and other workers in the field? They can ask their supervisor but that is time and money and leads to dissatisfaction if they do not get the information immediately or even at all, then they may feel that the mine has something to hide or that they do not matter. If the worker is



Ministry of Natural Resource Operations

Part One – continued

going to a job site and needs the procedure he should be able to access it so that they can discuss it with their supervisor, not relying on the supervisor to find it. This communication strategy may need rethinking.

Part Two – Occupational Health

Cheryl Pocklington

Generally all whom I spoke with are very impressed with s.22 and what he brings to the table. Most feel, however that HVC has a way to go before what upper management is trying to do will make a difference at the incident level and culture shift.

Here are some reasons:

No or few repercussions for poor safety behaviour, i.e. no follow-up to ensure safety acts such as housekeeping in areas like the shop are complete. (Lack of follow-up was also noted in the documentation of incidents) This was thought to be due to new superintendents who had minimal experience who didn't value something such as housekeeping due to lack of experience.

There could be more positive reinforcement for good acts of safety this used to be the case in the past with some superintendents.

More support needed for ideas expressed by workers at safety meetings. Instead of being told they are whining or complaining, workers felt more group discussion versus park and bark safety meetings would engage people and let their ideas from experience be heard.

Need more sharing of information at safety meetings. For example, the crews are not hearing about some incidents until weeks later. They want to hear about what's happening at other mines in terms of incidents too so that they can learn from it.

It was generally felt that old school employees were hindering progress of safety as they are less adaptive to change and don't value the new ideas. They don't recognize the benefits of this new way of thinking as they have 'always done it this way', and don't have any other experience from other workplaces as a comparison. They almost sabotage the efforts being made by upper management.

Modified Work Centre

The Modified Work Centre continues to be a success in offering opportunities to assist workers to return to work following occupational or non-occupational related medical conditions. Please continue the innovation and individualized return to work plans for those involved as they are essential to ensure a safe and early return to duties. Encourage the ideas of those participating to help tailor meaningful and safe activities.



Ministry of Natural Resource Operations

Part Two continued

Medical Aids and Incident Reporting

Thirty-six medical aids from 2010 were reviewed. Twenty-seven were incomplete due to a lack of documentation of action items and their completion. There was no evidence of follow-up to ensure control measures implemented had been effective. Without appropriate documentation and follow-up, there is a limited ability to meet Code requirements 1.9.1, 2.9.1 and 3.3.5 where the manager can demonstrate he has controlled for hazards to workers.

Musculoskeletal Disorder Prevention

Musculoskeletal Disorder (MSD) Prevention training for the OHSC, as per Code requirement 1.6.9(1)(h), was not met. Training has not occurred since 2005. An inspection order was written in December 2009 and was not complied with. Without this training, the OHSC does not have the skills to assist mine management in investigations involving MSD as per Code section 1.7.1 (4) and 2.9.1, evaluating hazards associated with MSD in safety tours as per Code sections 1.9.1 and 3.3.5, and evaluating jobs for hazard information to educate workers regarding safe work practices as per Code section 1.11.1.

An order will be forthcoming from the regional inspector to complete this training within 3 months.

Following this training the mine should next evaluate how the workforce will be educated in safe work practices related to the prevention of MSD as it pertains to their work.

Part Two – Occupational Health

Caroline Nakataska

A workplace monitoring program is implemented however it does require some review to ensure that it fully encompasses the anticipation/recognition, evaluation and control of all applicable occupational health hazards. HVC's program direction for dust and sampling equipment will be reviewed and should be restarted by the end of the year. A large dust sampling project in conjunction with Golder and Associates was done through 2008 and 2009 but little sampling has been done since. On the control portion of the program lots of work is being done on dust control like the domes however in the interim there is reliance on respiratory protection without fit testing employees for this personal protective equipment.

Medical surveillance programs are required for dust, noise and lead exposed workers. Hearing tests are being offered for noise exposed workers however an equivalent program offering lung function testing and/or x rays has not been implemented for dust exposed workers.

Worker training on the hazards related to their work needs to be reviewed to ensure that workers are aware of the occupational health hazards, their potential health effects, the safe work procedures and the control measures. One worker interviewed who works with



Ministry of Natural Resource Operations

hazardous products was not adequately advised on the health hazards associated with his work and the use and limitations of his personal protective equipment.

Part Three – Personnel Safety and Emergency Preparedness

Bruce Milligan

Mine rescue records, equipment and systems are well established and there is a pride of ownership present. The mine has 83 employees who are required to regularly participate in practices. Typical responses to emergencies have approximately 15 members attending.

All employees receive basic firefighting training using the BullEx Fire Simulator.

No policy is available for working around water. All employees who are required to work in the boats used in the tailings storage facility receive training and a licence to operate boats. The mine has several in pit ponds that have associated pumps. The Lornex pit sump was inspected and while lifejackets and a heaving ring were present they were hard to find and displayed obvious signs that inspections were not carried out regarding their readiness.

No policy is available for training personnel not to tamper with safety devices. One instance of a specific tampering issue was discussed in a safety meeting however a policy should be developed and reviewed with all personnel.

No policy is available regarding working alone. Supervisors and employees require guidance in this Health, Safety and Reclamation Code requirement.

Review and management of the confined space policy is required. In two deep well locations the lock hasps had been rendered inoperable.

Part Four – Building, Machinery and Equipment

Garry MacDonald

Greg McLean

The overall percentage achieved by HVC on part four of this audit, indicates an adequate compliance effort, it also indicates that improvement is possible and needed.

The fact that it was deemed necessary to issue three inspection orders from this auditor indicates that there are some items that need attention right away; these orders included wheel chock compliance, WHMIS compliance and CRN certification and the displaying of the CRNs on pressure vessels.



Ministry of Natural Resource Operations

Part Four continued

There is room for improvement in the area of supervising and monitoring of contractors working on the mine site, such as a contractor's machine being found in the mill/plant area that did not have the required auxiliary steering. When the contract administrator was asked about this deficiency, he did not understand this requirement and the Inspector had to explain what was required. This would indicate a need to train supervisors in the requirements of the contract jobs that they are supervising.

In the shop expansion area two jobs had to be interrupted by the Inspector, due to immediate hazards to workers. The contract administrator in charge of the area was not addressing the issues of; two workers working at height without their fall arrest devices being attached to an anchor and the operator of a rough terrain fork lift leaving the controls of his machine when he had a load suspended.

There is room for improvement in the implementation and enforcement of policies already in place at the mine, for example, several locks were found that did not have tags on them, other locks were found that had not been locked or still had their keys in the locks, the lockout/tag-out policy as written is not being enforced with workers.

In conclusion the required policies and procedures are in place, but there is a need for further education of supervisors, workers and contractors and enforcement of the existing policies and procedures.

Part Five – Electrical

Terry Paterson

Emmanuel Padley

Highland Valley Copper has a highly skilled and educated electrical work force. They are in the process of developing an electrical safety program that includes, but is not limited to, policies, procedures, and training. From the surface their progress is very commendable.

When probed further an auditor cannot help but notice that the electrical safety program is being developed very slowly and does not seem to have buy in from frontline supervision and or workers on the floor. There is some very low hanging fruit that is easily gathered such as; plugging or covering unused openings in electrical gear, routine maintenance of switch rooms and substations, developing procedures for routine work, training with regards to M421-00 and Z462, and reinforcing this training with follow-up sessions. The procedures developed are in no particular format and do not always have dates as to revision etc.



Ministry of Natural Resource Operations

Part Five continued

Workers such as shift electricians continue to work alone racking in and out breakers with no safety procedures. Oddly enough these workers do their Field Level Hazard Assessments then come up with some sort of conclusion and carry on. The hazard assessments are a very complex document that does not seem to address electrical concerns. Perhaps their field level assessments should be more pointed to electrical concerns for the electrical workers.

It appears that for whatever reason (work load, size of the operation, experience, training, etc;) supervision is struggling with being proactive and involved with workers on a day to day basis to ensure the safe electrical operation of HVC is continuously improving.

Part six – Mine Design and Procedures

Rolly Thorpe

Steve Rothman

In general, mine design is comprehensive and well done. Amendments to the plan are submitted to the Chief Inspector.

Procedures are written for many mine operations and employees are trained in these procedures. The dumping procedure should be edited for clarification.

The shift boss log has very few entries of unusual conditions or dangerous occurrences. This is questionable.

Several relief foremen do not have current first aid or shift boss tickets.

Some runaway lanes require rehabilitation. A written procedure is needed for controlling access to the potential run-out zones below dumps.

Part Eight - Explosives

Bruce Milligan

Highland Valley Copper has a well documented training/review system for blasting procedures (tests of the employee's competencies are conducted routinely). Well structured/organized system for the use of explosives.

All equipment and magazines inspected are free of trash and dirt.



Ministry of Natural Resource Operations

Part Eight continued

A review of the blasting magazine indicates that the distances separating the magazines do not meet the NRC table of distances. An order to rectify this deficiency was issued by the Inspector of Record.

A review of the contents of the blasting magazine indicated that the explosives products boxes are not marked with HVC magazine numbers. Subsequent discussions regarding the markings indicate that the product boxes are marked with a tag similar to the ones used in grocery stores. A discussion regarding the adequacy of such marking is required.

Part Ten – Reclamation

The mine permit is in place. Mine plans are comprehensive and complete.

Dams and impoundments are designed, built and monitored under engineering control. Monitoring reports are submitted annually.

Reclamation plans are professionally designed and implemented. An annual reclamation report is submitted to the Chief Inspector.