



TASEKO MINES LTD.
VANCOUVER, BC

GIBRALTAR MINE
McLEESE LAKE, BC

Full Scale Exercise “TORRENT”

After Action Report

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Executive Summary

On October 23, 2014, Taseko Mines Ltd. conducted a full scale exercise at the Gibraltar Mine Site. The exercise simulated the breach of a tailings pond having both an on and off-site impact. The exercise required both the site Local Crisis Management Team and the Corporate Crisis Management Team, located in Vancouver, BC to participate in the response and management of the incident. Some of the external agencies that would have been engaged participated in the exercise by receiving notifications. The majority of off-site engagements were simulated by a simulation centre managed by ERM in Edmonton, AB.

As an integrated response to a significant emergency, the Taseko Mines Emergency Response Organization performed to a very good standard. Issues were addressed in a controlled manner and the various control centres handled their responsibilities in a competent manner.

Leading up to the exercise Taseko Mines Ltd. Gibraltar Mine had been diligently enhancing their site emergency preparedness including the update of their Emergency Preparedness Response Plan and Dam Inundation Plan. Both plans were activated as part of this exercise, in addition to the Corporate Crisis Management Plan.

In general, the objectives for this exercise were achieved. Details on the achievement of the objectives can be found in Section 5.0 – Exercise Objectives Outcomes. The LCMT comfort level with the roles/responsibilities and resources in the Emergency Operations Centre (EOC) and the inter-relationships among the members were demonstrated throughout the exercise. The Corporate Crisis Management Team in Vancouver also did well in providing tactical support to the site, dealing with corporate-level issues and leading the communications strategy.

Based on the emergency preparedness enhancements recently completed, and the professionalism and competence demonstrated by Taseko Mines Ltd. personnel involved in the exercise it is clear that Taseko Mines Ltd., Gibraltar Mine has established a solid emergency management foundation.

Key Observations and Recommendations

The general observations captured in the post exercise debrief and the e-survey are clearly indicative of a successful exercise. General comments and feedback provided by the respondents were referenced in the development of the specific findings and recommendations.

The e-survey was sent out to the participants and an 87% response provided some key indicators as follows:

1. Question #1a: Evaluation of the overall exercise
Response #1a: 100% of the respondents rated the exercise as *Above Average to Great*.
2. Question #1b: Assessment of the pacing of the exercise
Response #1b: 81% of the respondents rated the pacing as *Above Average to Great*.
3. Question #1c: Assessment on relevance of exercise to respective functional position
Response #1c: 80% of the respondents assessed the relevancy of the exercise to their functional role as *Above Average to Great*.
4. Question #1d: Rating effectiveness of skills practiced during the exercise
Response #1d: 88% of the participants rated their skills effectiveness as *Above Average to Great*.
5. Question #1e: Exercise as opportunity to enable participants to be better prepared in response to LCMT and CCMT activation.
Response #1e: 100% of the participants rated this question as *Above Average to Great*.
6. Question #1f: Comfort level of participant skills during LCMT and CCMT activation.
Response #1f: 85% of the participants rated their skill comfort level as *Average to Above Average*.

It is important to acknowledge that the actions of the participants and the goals and priorities established were consistent with what would be expected by an organization with a good emergency management foundation. It was clear that preservation of life, the protection of environment, timely communications with affected stakeholders and the need to take swift action to mitigate and respond to the incident were goals that guided the participants at both the site and corporate levels of the organization.

The vast majority of the findings focus on processes, and the ability of the organization to follow a logical, repeatable and structured approach to responding to and managing a significant incident. The following key observations and recommendations are focussed on the LCMT centre. Specific findings and recommendations for the LCMT can be found in Section 5.0

Local Crisis Management Team (LCMT)



As a group the LCMT functioned effectively. The team was engaged and focussed on ensuring the incident was promptly responded to and managed from a site perspective. All LCMT staff took their responsibilities serious and demonstrated a commitment to working well together. Problem solving and forward thinking were amply demonstrated by all staff during the exercise. There were seven key LCMT observations. They are as follows:

1. Role identification as per ICS Principles.

Work stations were not designated or identified in any manner. Personnel working at each station did not wear anything that identified the role that they filled. LCMT personnel were not always fully aware of what functions and responsibilities were required and activated.

Recommendations:

- a. Organization of the work space is recommended to make the room more functional.
- b. The use of identification (ID) tags and/or vests colour-coded to ICS Best Practices identifiers (Green for Command, Red for Command Staff, Orange for Operations, Blue for Planning, Yellow for Logistics, Grey for Finance/Admin) is recommended.
- c. The addition of an organizational chart posted on wall of EOC to identify the operational functions in the EOC is recommended.

2. Action Planning as per ICS Principles.

The LCMT Chair communicated the overall response goals to the team and did a good job of establishing priorities and assigning tasks following the initial briefing. Tasks were reviewed and communicated at the follow-up briefings as well; however a written action plan was not developed. An action plan should be the foundation of an organization's response to an incident. Conducting a situational assessment and determining the issues and the priorities are the first step and as mentioned above this was done. The next step should have been the establishment of objectives. Objectives are the milestones that the organization must achieve while working towards meeting the overall goals and priorities. The assigned tasks are the ground level activities that are assigned to ensure the objectives are met. For an event of this magnitude and duration, a written action plan would be expected.

Recommendation:

Follow the intent of Principles of Incident Action Planning and Management by Objectives. As a minimum form ICS 201 and ICS 202 should be utilized in the preparation of an incident action plan.

3. Documentation Management.

The importance of administration was demonstrated throughout the exercise by capturing task assignments and recording them for follow-up and review. Information was documented utilizing a task assignment recording sheet.

Recommendation:

In addition to item #2 above, the use of a Master Event Log and Personal Event Logs will create consistency and clarity by providing a chronology of the incident and identifying key decisions made and actions taken, by whom, in mitigation of the incident. This documentation is invaluable in providing the necessary foundation and facts for briefings and.

4. Information Management. Communication between the LCMT and the CCMT was scheduled and consistent but this kept the EOC Leader out of the EOC for extended periods of time. While the EOC Leader was outside the EOC room no one was delegated responsibility to manage the site EOC. As would be expected some people left the EOC to carry out their responsibilities without advising where they were going or knowing when they should be back. The end result is that there were some gaps in regards to the incident status and actions being taken by the team members.

Recommendation: Posting an incident status board and keeping it updated will provide current information for the EOC members. Similarly, distributing the incident action plan and posting the incident objectives on a status board will help keep team members apprised of the objectives and actions being taken to accomplish these. The EOC Leader must discuss and announce the process that the EOC will use in determining objectives, task assignments, timings of briefings and general EOC conduct.

5. Managing Emergency Operations Process. The LCMT gathered key and vital information about the incident and focussed their tasks appropriately. More training on how the EOC can function more effectively and efficiently is recommended so that all participants have a common baseline. Having solid repeatable processes will serve to position staff for success.

Recommendation: Training on the following is recommended:

☞ activation (informing all command centres of LCMT functional status)

- ✎ command centre set up (workstations, sign in, role assignment, status boards for incident status, stakeholder notifications, link to Incident Command Post)
- ✎ action planning (immediate actions, short/long term planning and documentation)
- ✎ briefings (incident status update, objective update, new information, what if)
- ✎ individual time & event logs (use of template forms for consistency)
- ✎ media relations (what needs to be said, by whom and how is it approved and delivered)

6. Interaction with stakeholders.

The LCMT were aware of the notifications required to regulatory agencies and most affected stakeholders and demonstrated a strong working relationship. Communications to the residential stakeholders was not as efficient or prompt.

Recommendation: Enhance the Dam Inundation Plan to identify downstream residents and stakeholders and keep this plan up-to-date (contacts to be updated twice/year).

7. Interaction with simulated media and First Nations representative at gate. Gibraltar Mine personnel were very diligent in their interaction with the media and the First Nations representative. Mine personnel were cordial and pleasant when addressing the groups at the gate. They only presented minimal information and referred the media and First Nations representative to the site website and call centre. When questioned about obtaining public information details, site personnel contacted the LCMT a few times and asked for guidance. A (simulated) communications person from Gibraltar Mine was eventually dispatched by LCMT (30 minutes later) to speak with the First Nations representative and shared Taseko Mines Ltd.'s media release.

Recommendation: Continue the practice of keeping the outside media and other perceived stakeholders at roadblocks for their own protection and until further direction is provided by the LCMT. It is important to share timely and factual information with these people as it must be expected that the longer these people are kept waiting the greater the opportunity to solicit unapproved information or even make up perceived information that may not reflect favourably on Taseko Mines Ltd. operations.

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1.0 INTRODUCTION

Taseko Mines Ltd. - Gibraltar Mine retained the services of Emergency Response Management Consulting Ltd. (ERMC) of Edmonton, AB to develop, conduct and report on a full scale exercise which was held at the Gibraltar Mine site and Taseko Mines Ltd.’s Corporate office on October 23rd, 2014. For reference purposes the exercise name was ‘Torrent.’

The purpose of this exercise was to provide participants with the opportunity to learn about their specific “*emergency*” roles, responsibilities and actions in response to a significant emergency at the Gibraltar Mine site in a simulated environment.

The specific objectives of the exercise are as follows:

1. Comply with Senior Inspector of Mines directive, as of Aug 18th, 2014.
2. Practice activation and operation of local crisis management team (LCMT).
3. Practice activation and operation of corporate crisis management team (CCMT).
4. Practice developing an action plan for dealing with an emergency/crisis situation.’
5. Practice managing communications between Taseko Mines Ltd. and:
 - a. External stakeholders – residents, municipalities, government regulators, media.
 - b. Internal stakeholders - Gibraltar Mine staff and families, Taseko Mines Ltd. head office, other Taseko Mines Ltd. Operations.

The exercise scenario focused on the response to a Tailings Dam full breach.

This report provides ERMC’s summary of the planning process, exercise findings, and recommendations for improvement.

2.0 PROJECT SCOPE

The scope of Exercise “Torrent” included staff from the Gibraltar Mine site. The Taseko Mines Ltd. Corporate Crisis Management Team (CCMT) supported the incident from Vancouver.

For this exercise, ERMIC provided four personnel: Marcel Adamkewicz (Senior Consultant) who was the lead exercise controller at the Gibraltar Mine site, Kim Irving (ERMIC CEO) who simulated roles as an exercise media participant and First Nations activist, Ed Wendlandt (ERMIC President) who was the Vancouver CCMT exercise controller/evaluator and Doug McLeod (ERMIC Subcontractor) who simulated a role as Media interacting with the Taseko Mines Ltd. corporate office.

Participants/Observers at the Gibraltar Mine site included:

Name	Role/Position
Richard Tremblay	Local Chair
Kelly Parker	Chair Alternate
Pat Gannon	Chair Alternate
Dale Lawson	Local Crisis Coordinator
Zoli Lukacs	Reliability
Daniel Ross	Local HR Coordinator
Gord Simms	Engineering
Cory Forcier	Supply Chain
Katherine Gizikoff	Environment & Governmental Relations
Todd Wambolt	Environment & Governmental Relations Alt.
Krista Murray	Finance
Tim Potter	Projects
Kelly McKelvie	Administrative Support Coordinator
Frankie Kirk	ERT Captain
Janice Ebenau	Loss Prevention Coordinator
Steve Ohara	Environmental Coordinator
Kris Waters	Senior Mill Supervisor
Carly Van Soest	HR Admin (Communications)
Wayne Hanet	Finance Alternate
Claudette Cavanagh	Mine Maint. Admin (Communications)
John Purdy	Mill Ops. GF (Field Support)

3.0 METHODOLOGY

The 'Torrent scenario was used to create an incident that would challenge the participants with an emergency that necessitated the collaborative efforts of all the participants. The exercise was designed collaboratively by Taseko Mines Ltd. - Gibraltar Mine and ERMC. To initiate the exercise, a hypothetical emergency situation was presented to the Gibraltar Mine site, Tailings Operator at the East Saddle Dam and the response ensued.

The exercise followed the following schedule:

TIME	ACTIVITY	NOTE
0630	Exercise set-up & briefing	<ul style="list-style-type: none"> • Test communication equipment & conduct briefing to all exercise participants
0730	Exercise begins	<ul style="list-style-type: none"> • Initial notification as per scenario
0745	LCMT assemble in boardroom Begin Phase 1	<ul style="list-style-type: none"> • Ex control briefs LCMT personnel. • Corporate Crisis Management team activated
0945	End of Phase 1	<ul style="list-style-type: none"> • Begin one hour break. • Brief personnel on next Phase 2
1045	Begin Phase 2	<ul style="list-style-type: none"> • Phase 2 simulates 24hr. time jump. • Time is now 1045 on day 2 of the emergency
1400	End of Phase 2	Put away supplies, biology break, etc.
1430	Begin hot debrief	Hot debrief at mine site Hot debrief at Head Office
1530	Hot debrief ends	
1535	Joint debrief begins	Telecon between mine site and head office to discuss common issues.
1615	Joint debrief concludes	

In addition to information collected at the debrief sessions, an on-line survey was sent to 30 participants after the exercise, on October 27th, to capture any thoughts and recommendations, which allowed for structured and thoughtful feedback. There were 31 participants from the exercise that provided feedback anonymously via the survey by November 17th, 2014.

4.0 SPECIFIC FINDINGS, COMMENTS AND RECOMMENDATIONS

4.1 LCMT Findings, Comments and Recommendations

NO.	Finding	Opportunities for Improvement	Assigned To	Date Completed
1.	LCMT participants not fully familiar with contents of ERP.	<p>Comment: Understanding of roles, responsibilities and emergency procedures will greatly increase the efficiency of the response organization</p> <p>Recommendation: Ensure further and future training includes familiarity with the site ERP and specifically the roles and responsibilities of the response organization. EOC drills and tabletop exercises can be useful tools for this type of awareness training.</p>		
2.	No formal Incident Action Planning was discussed or documented	<p>Comment: Consistent focus on task assignments and status of such during briefings and updates did not allow for members to catch their breath and look at the big picture perspective.</p> <p>Recommendation: Increase awareness of Principles of ICS in regards to Action Planning and management by Objectives. Introduce EOC to the Planning "P" for further understanding of the informational management process in the EOC.</p>		
3.	EOC functions not readily identifiable.	<p>Comment: By identifying all functions required in the EOC, assigning responsibility and posting org chart or sign in will increase EOC members awareness of the required functions during this type of incident</p> <p>Recommendation: Establish primary role/responsibilities for required functions,</p>		

NO.	Finding	Opportunities for Improvement	Assigned To	Date Completed
		assign them and indicate on organizational chart or sign in sheet for all to have access to. Provide awareness training to all EOC members on the ERP and specifically on their roles.		
4.	Core messaging was slow in development and delivery	<p>Comment: It is very important that key messages are delivered to the key stakeholders in an informative and timely manner.</p> <p>Recommendation: Develop key initial message templates, obtain approval from corporate communications and establish ownership for delivery for both site and head office</p>		
5.	Exercise tested knowledge and experience of all participants and provided understanding of required efforts for this type of incident.	<p>Comment: The entire team committed themselves to the exercise from start to finish. The exercise allowed team to demonstrate their effectiveness and cohesiveness as a team in the EOC.</p> <p>Recommendation: Continue delivering and participating in similar exercises.</p>		
6.	Access to EOC resources was limited.	<p>Comment: Access to resources, checklists, clock, phone, tools, maps, pictures, charts, plans will increase efficiency of EOC team.</p> <p>Recommendation: Establish location for primary EOC, identify the required access to resources, provide as necessary and available and ensure EOC members are familiar with their use/function.</p>		
7.	Call takers overwhelmed by volume of calls at switchboard.	<p>Comment: Stakeholders will always have inquiries during events such as this and response readiness is important.</p> <p>Recommendation: Ensure adequate resources (people, phones, forms, and</p>		

NO.	Finding	Opportunities for Improvement	Assigned To	Date Completed
		messages) are available for handling incoming calls to reduce fatigue, stress and miscommunications.		
8.	Call takers not fully aware of what information they were allowed to provide to the multitude of callers.	<p>Comment: see #7 Recommendation: See #7. Provide additional training to call takers to be able to effectively handle stress related issues identified by the callers.</p>		
9.	Headcount process worked well on site however information on downstream residents was not readily available for complete accountability.	<p>Comment: Accountability is a key ICS Principle, whether it involves only the responders or the entire site and the impacted stakeholders. Recommendation: Continue practice of this site headcount process and enhance Dam inundation plan to include identifying and documenting of potential residents impacted by a dam failure of this type and magnitude.</p>		
10.	Information provided to the outside public (media/First Nations) took a long time to get out into the field.	<p>Comment: It is recognized that it took some time for the LCMT to be convinced that there actually was a real person simulating media and First Nations at the roadblock. Recommendation: In a simulation exercise such as this it is important for all participants to treat events and activities as if they were real unless otherwise instructed or confirmed through facilitation.</p>		

5.0 EXERCISE OBJECTIVES - OUTCOMES

NO.	Objective Statement	Comment
1.	Comply with Senior Inspector of Mines Orders (#9), as of Aug 18 th , 2014.	This objective was met; the exercise was conducted on October 23, 2014 as scheduled. The Dam Break Inundation Study and the Emergency Preparedness and Response Plan were visible, referenced and utilized in the conduct of the exercise.
2.	Practice activation and operation of local crisis management team (LCMT).	This objective was met; the site followed protocol for notification and activation of the Local Crisis Management Team and the team was functional within minutes of being notified. Activities continued until the exercise was halted as per schedule.
3.	Practice activation and operation of corporate crisis management team (CCMT).	This objective was met; once the LCMT was functional, immediate actions discussed and tasks assigned, notification was made for request of CCMT activation in Vancouver Corporate Office for support and guidance.
4.	Practice developing an action plan for dealing with an emergency/crisis situation.'	This objective was met, elements of an action plan were discussed and tasks assigned; however, opportunities for improvement exist in the area of developing a formal, written action plan.
5.	Practice managing communications between Taseko Mines Ltd. and: <ul style="list-style-type: none"> a. External stakeholders – residents, municipalities, government regulators, media. b. Internal stakeholders - Gibraltar Mine staff and families, Taseko Mines Ltd. head office, other Taseko Mines Ltd. operations. 	This objective was met; through shared discussions and planning, communications were prepared, approved and delivered to stakeholders (internal and external). The LCMT and CCMT interacted with all stakeholders via real time initial calls to regulatory agencies and then conducted follow-up and additional interactions as simulated by the ERM Simulation Control Centre (SCC) participants in Edmonton office. Media real time interactions were conducted live at both sites and also via SCC communications.

6.0 SUMMARY AND NEXT STEPS

It should be first reemphasized that the Taseko Mines Ltd. Corporate Crisis Management Team and the Gibraltar Mine Local Crisis Management Team showed a great deal of professionalism and dedication to demonstrating their emergency response and management capabilities during the exercise.

The exercise highlighted the fact that the Gibraltar Mine has made good progress in developing their emergency management system. Participants improved their understanding of how a collaborative approach can provide better outcomes for emergency incidents.

As with any emergency management system, continuous improvements can be made by taking the lessons learned during exercises and incidents and turning them into recommendations that are acted upon.

The 'Next Steps' for Gibraltar Mine can be summarized in the following steps:

1. Review and meet to discuss the after action report
2. Determine items to be addressed and assign responsibility for follow-up actions

The vast majority of comments from the participants in this exercise were positive, and there were many things that were done correctly and that worked well. However, the majority of observations listed in this report must, of necessity, focus on lessons learned and areas for improvement. ERMC would be pleased to assist Gibraltar Mine with implementation of any recommendations presented in this report.

ERMC would like to thank Kevin Ernst, Dale Lawson, Ainsley Hallbauer and the Taseko Mines Ltd. Gibraltar Mine planning team support members for their contributions to the success of this exercise. We look forward to working with Taseko Mines Ltd. Gibraltar Mine in furthering their emergency preparedness capabilities.