

Teck Resources Limited
Sullivan Mine
Tailings Management Facility
Tabletop Exercise
14 November 2014

Summary Report

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Introduction

On 14 November 201, Teck Resources Limited Sullivan Mine Tailings Management Facility conducted a tabletop exercise to review company emergency preparedness and response plans. Just Like Real Exercises Inc. was contracted to design and facilitate the exercise and to prepare this Summary Report.

Purpose

The purpose of this Summary Report is to record the observations and recommendations of the exercise participants and the facilitator with respect to emergency preparedness and response plan deficiencies and opportunities for improvement.

Exercise Details

Purpose

The purpose of this exercise was to subject the Teck Resources Limited Sullivan Mine Tailings Management Facility to a review of the following tailings pond functions...

- Inspection
- Warning
- Assessment
- Response
- Escalation

By involving the...

- Senior management and operations staff

In a...

- Simulated tailings incident.

Time, Place and Participants

Exercise play took place from 0800 to 1130 on 14 November 2014 at the Kimberley Main Office and involved site management personnel.

Overarching Objectives

The overarching objective of the exercise was to review the Tailings Management Facility Emergency Preparedness Plan (EPP) incorporated in the Operation,

Maintenance and Surveillance (OMS) manual for the TMF and the Environmental Emergency Response Procedures (ERP).

Concept of Operations

Exercise play was structured around standardized Incident Management System process and procedures for incident site and site support initial operational periods.

Initial Scenario

The fall of 2014 had been marked with extensive rain. The ground in the vicinity of the Tailings Management Facility has become saturated and run-off is more apparent. With the water ponding on the Active Iron Dyke, surveillance has been stepped up. This morning the forecast is for 40 millimeters of rain over the next 12 hours.

The latest inspection reveals deformation on the crest and seepage at the toe. The inspector prepares to take action to mitigate the situation.

Site Discussion

Incident Site Initial Action Plan: Operational Period #1			
Step 1: Establish incident Command			
Expected Actions	<ul style="list-style-type: none"> Confirm command with agency dispatch 	Tasks	1. Describe the types of situations found during inspection that would cause the activation of the emergency plan.
	<ul style="list-style-type: none"> Confirm command on scene <ul style="list-style-type: none"> Inform all incoming resources and personnel of command structure 		2. Describe the notification process once it is determined a response is necessary.
	<ul style="list-style-type: none"> Initiate and maintain control of communications (command and tactical nets) 		3. Describe the communications systems available to manage the incident at the site.
	<ul style="list-style-type: none"> Complete a scene size-up <ul style="list-style-type: none"> Determine the nature of the incident Area affected Hazards present and impact to responders and personnel/animals/property in the area Means of isolating the area Determine initial assistance and resources required 		4. Identify the essential elements of information determined in the scene

	<ul style="list-style-type: none"> ○ Identify a staging area ○ Identify access/egress/safe routes for the flow of response personnel, equipment and, when necessary, evacuees 		<p>size-up that need to be communicated to management.</p> <p>5. Identify the hazards and contingencies that must be considered in this type of incident.</p>
	<ul style="list-style-type: none"> • Broadcast command location, hazards to responders, direction of approach and staging area 		
	<ul style="list-style-type: none"> • Begin contingency planning 		

Step 2: Determine initial incident objectives, strategies and tactics

Expected Actions	<ul style="list-style-type: none"> • Know and apply agency incident response policies (limits to authority, spending and public information release) 	Tasks	<ol style="list-style-type: none"> 1. Demonstrate your process for developing an action plan to deal with the incident. 2. Create the action plan.
	<ul style="list-style-type: none"> • Establish incident objectives <ul style="list-style-type: none"> ○ What must be done 		
	<ul style="list-style-type: none"> • Develop appropriate strategy(s) <ul style="list-style-type: none"> ○ Ways to achieve the objectives 		
	<ul style="list-style-type: none"> • Develop tactical direction <ul style="list-style-type: none"> ○ Establish tactics ○ Assign resources ○ Monitor performance 		
	<ul style="list-style-type: none"> • Brief the action plan 		

Step 3: Organize the site

Expected Actions	<ul style="list-style-type: none"> • Set up an Incident Command Post (ICP) 	Tasks	<ol style="list-style-type: none"> 1. Using a map of the Active Iron Dyke facility, identify the facilities, zones and routes required to safely manage the incident.
	<ul style="list-style-type: none"> • Set up staging area(s) 		
	<ul style="list-style-type: none"> • Isolate the area <ul style="list-style-type: none"> ○ Hot, warm, cold zones 		
	<ul style="list-style-type: none"> • Set up access, egress and safe 		

	routes		
	<ul style="list-style-type: none">• Issue warnings<ul style="list-style-type: none">○ On-site risks to responders○ External warnings to citizens		
Step 4: Manage resources			
Expected Actions	<ul style="list-style-type: none">• Organize current resources<ul style="list-style-type: none">○ Single resource○ Strike team(s)○ Task force(s)	Tasks	<ol style="list-style-type: none">1. Identify resources on scene and resources required to manage the incident.2. Describe the process for ordering resources.
	<ul style="list-style-type: none">• Order resources		
	<ul style="list-style-type: none">• Track resources assigned/ordered		

Step 5: Develop an appropriate organization			
Expected Actions	<ul style="list-style-type: none"> • Determine best way to fulfill the incident command function <ul style="list-style-type: none"> ○ Single command ○ Unified command 	Tasks	<ol style="list-style-type: none"> 1. Create the organizational chart for this incident. 2. Discuss the possibility of additional agencies having a jurisdictional responsibility in the incident and how the organization might accommodate.
	<ul style="list-style-type: none"> • Delegate responsibilities for management staff and general staff functions as dictated by the incident and personnel available 		

Site Support Discussion

Emergency Operations Centre (EOC) Initial Action Plan: Operational Period #1			
1. Activate EOC			
Expected Actions	Notification(s)	Tasks	<ol style="list-style-type: none">1. Describe the process for notifying management of a dam incident.2. Determine the level of response for the incident.3. Identify the staff required in the EOC and the process by which they are notified.4. Describe the resources required and available in the EOC facility.5. Develop an organizational chart for the EOC.
	Implement staffing plan		
	Complete sign-in procedures		
	Assign functions		
	Set up facility		
	Organize situation displays		
	Establish financial controls		
	Review functional responsibilities		
	Initiate position logs		
Scenario Update			
<ul style="list-style-type: none">When the Incident Commander is contacted by the Operations Section Chief, it is reported that the geotechnical engineer who happened to be on site for a meeting, has advised that a dam failure is clearly possible.			
2. Establish contacts and gather information			
Expected Actions	Contact Incident Commander for a situation report <ul style="list-style-type: none">Determine what requires immediate action	Tasks	<ol style="list-style-type: none">1. Identify the essential elements of information required from the incident commander.2. Identify site immediate action needs and who should be tasked to provide.
	Contact applicable Dispatchers for update		
	Contact/advise stakeholders and gather information		

	Identify and contact assisting and cooperating agency Information Officers to coordinate messaging		<div>3. Identify all the stakeholders that need to be notified</div> <div>4. Describe the Teck Resources media policy and procedures.</div>
3. Develop situational awareness			
Expected Actions	Post relevant information on Situation Displays	Tasks	<div>1. Describe your process for developing situational awareness.</div>
	Analyse information for human, environmental and financial consequences and develop proposed courses of action		<div>2. Identify the possible consequences of the incident and discuss mitigation possibilities.</div>
	Prepare key public information messaging		<div>3. Create the key public information messages.</div>
4. Prepare EOC Action Plan			
Expected Actions	Conduct a management team briefing	Tasks	<div>1. Describe your process for identifying EOC priorities in response to this incident.</div>
	Identify priorities		<div>2. Create the EOC action plan.</div>
	Prepare Action Plan		
	Approve Action Plan		
	Execute plan and monitor for effectiveness		

Observations and Recommendations

Observations

During the post-exercise discussion, participants agreed that the Operation, Maintenance and Surveillance (OMS) manual, currently a work in progress, provides the required OMS direction with one exception: an incident management system.

It was also agreed the Environmental Emergency Response Procedures (ERP) effectively operationalizes the OMS manual though additions are required. Specifically, direction on implementing an incident management system to ensure a comprehensive response to a TMF incident needs to be included. That incident management system should be based on the Incident Command System and involve a site (Incident Command) and site support (Emergency Operations Centre) structure.

It was decided incidents contained within the TMF boundary would primarily be managed at the site level by an incident commander. An Emergency Operations Centre would only be activated at the direction of the Incident Commander to provide resource support. For incidents extending beyond the TMF boundary, an Emergency Operations Centre would automatically be activated to manage the consequences of the incident through contingency planning and providing communications/coordination with external agencies.

It was noted that the OMS manual states Teck must hold a meeting every two years with provincial and local emergency management officials, with description of simulated events and discussion among the participants to evaluate the EPP and its procedures and to resolve any concerns regarding coordination and responsibilities. It was agreed this should become a priority action. It was noted by the facilitator that a tabletop exercise is an effective way to identify and resolve coordination and responsibilities in response to an incident extending beyond the TMF boundary.

Recommendations

1. A statement directing the use of an incident management system to be included in Section 7 of the OMS manual.
2. The ERP be updated to include direction on implementing an incident management system at the site and site support level and that system be based on the incident command system as outline in the following two tables:

Table A: Site (ICP)

Incident Site Initial Action Plan - Operational Period #1	
Step 1: Establish incident Command	
Tasks	<ul style="list-style-type: none"> • Confirm command with agency dispatch
	<ul style="list-style-type: none"> • Confirm command on scene <ul style="list-style-type: none"> ○ Inform all incoming resources and personnel of command structure
	<ul style="list-style-type: none"> • Initiate and maintain control of communications (command and tactical nets)
	<ul style="list-style-type: none"> • Complete a scene size-up <ul style="list-style-type: none"> ○ Determine the nature of the incident ○ Area affected ○ Hazards present and impact to responders and personnel/animals/property in the area ○ Means of isolating the area ○ Determine initial assistance and resources required ○ Identify a staging area ○ Identify access/egress/safe routes for the flow of response personnel, equipment and, when necessary, evacuees
	<ul style="list-style-type: none"> • Broadcast command location, hazards to responders, direction of approach and staging area
	<ul style="list-style-type: none"> • Begin contingency planning
Step 2: Determine initial incident objectives, strategies and tactics	
Tasks	<ul style="list-style-type: none"> • Know and apply agency incident response policies (limits to authority, spending and public information release)
	<ul style="list-style-type: none"> • Establish incident objectives <ul style="list-style-type: none"> ○ What must be done
	<ul style="list-style-type: none"> • Develop appropriate strategy(s) <ul style="list-style-type: none"> ○ Ways to achieve the objectives
	<ul style="list-style-type: none"> • Develop tactical direction <ul style="list-style-type: none"> ○ Establish tactics ○ Assign resources

	<ul style="list-style-type: none"> ○ Monitor performance
	<ul style="list-style-type: none"> ● Brief the action plan
Step 3: Organize the site	
Tasks	<ul style="list-style-type: none"> ● Set up an Incident Command Post (ICP)
	<ul style="list-style-type: none"> ● Set up staging area(s)
	<ul style="list-style-type: none"> ● Isolate the area <ul style="list-style-type: none"> ○ Hot, warm, cold zones
	<ul style="list-style-type: none"> ● Set up access, egress and safe routes
	<ul style="list-style-type: none"> ● Issue warnings <ul style="list-style-type: none"> ○ On-site risks to responders ○ External warnings to citizens
Step 4: Manage resources	
Tasks	<ul style="list-style-type: none"> ● Organize current resources <ul style="list-style-type: none"> ○ Single resource ○ Strike team(s) ○ Task force(s)
	<ul style="list-style-type: none"> ● Order resources
	<ul style="list-style-type: none"> ● Track resources assigned/ordered
Step 5: Develop an appropriate organization	
Tasks	<ul style="list-style-type: none"> ● Determine best way to fulfill the incident command function <ul style="list-style-type: none"> ○ Single command ○ Unified command
	<ul style="list-style-type: none"> ● Delegate responsibilities for management staff and general staff functions as dictated by the incident and personnel available

Table B: Site Support (EOC)

Initial Action Plan Operational Period #1			
Priorities/Objectives			
1. Activate EOC			
Tasks	Implement staffing plan	Responsible	EOC Director
	Complete sign-in procedures		All
	Assign functions		EOC Director
	Set up facility		Logistics
	Organize situation displays		Planning
	Review functional responsibilities		All
	Initiate position logs		All
	Establish financial controls		Finance
2. Establish contacts and gather information			
Tasks	Contact Incident Commander for a situation report	Responsible	Operations
	Contact applicable Dispatchers for update <ul style="list-style-type: none">Determine what requires immediate action		Operations
	Contact/advise stakeholders and gather information		Liaison
	Identify and contact assisting and cooperating agency Information Officers to coordinate messaging		Information Officer
3. Develop situational awareness			
Tasks	Post relevant information on Situation Displays	Responsible	Planning
	Analyse information for human, environmental and financial consequences and develop proposed courses of action		Planning
	Prepare key public information messaging		Information Officer
4. Prepare EOC Action Plan			
Tasks	Conduct a management team briefing	Responsible	Management team
	Identify priorities		EOC Director
	Prepare Action Plan		Planning
	Approve Action Plan		EOC Director
	Execute plan and monitor for effectiveness		As tasked; Planning

3. Provide Incident Management System training to all TMF staff expected to respond to an incident.
4. Update the ERP to include policy direction on activating the site support EOC.
5. Conduct a tabletop exercise with the Regional District of East Kootenay and the City of Kimberley emergency management officials to coordinate responsibilities in responding to an incident that extends beyond the TMF boundary.