RAINY RIVER MINE

OPERATION, MAINTENANCE AND SURVEILLANCE MANUAL

PART IV – EMERGENCY PREPAREDNESS & RESPONSE PLAN

New Gold Inc.
Rainy River Project
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Version 2024-1

Review and Revision History

The OMS Manual shall be reviewed annually and following any significant changes at the site to assess if the document is representative of the current condition and operation of the facilities at the time of the review. Revisions to the manual should be undertaken within six months of changes. It is the responsibility of the Tailings Dam Engineer to initiate the OMS review.

The review team and approval record are provided in Table 1. The version of the EPRP Manual is shown in Table 2 and a change log of the latest revision is provided in Table 3.

Table 1- Review Team

Role	Name/ Alternative	Company/ Department	Position	Signature	Date
Prepared By	Taha Nadeem	Capital Projects	Tailings Dam Planner	Taha Nadeem (Jan 31, 2024 06:31 CST)	Jan 31, 2024
Reviewed by	Travis Pastachak	Capital Projects	Capital Projects Manager	Travis Pastachak (Jan 31, 2024 07:42 CST)	Jan 31, 2024
	Garnet Cornell	Environment	Environment Manager		Jan 31, 2024
	Mohammad Taghimohammadi	Mill Operations	Mill Manager	Taghimohammadi	Jan 31, 2024
	Calvin Boese	SRK Consulting	Engineer of Record		Jan 31, 2024
	Michael Dabiri	SRK Consulting	Engineer of Record		Feb 14, 2024
Approved by	Richard Francoeur	Health & Safety	Health & Safety Manager		Feb 19, 2024

Table 2– Version Summary

Revision Number	Details of Revision	Date of Issue	Comment
Rev. A	Issued for Internal Review	2023-02-24	Richard Francoeur reviewed
Rev. B	Issued for EOR Review	2023-03-27	Received on May 4, 2023
Rev. 0	Issue for Use	2023-05-23	
Rev. 1	2024 Updates	2024-01-24	MAC TSM Audit and Operational Criteria Updates

Table 3: Change Log

Section Number	Section Title	New Sections	Comments
4.2	Table 4-2: Training Log		Updated OMS and EPRP training dates for 2023
Appendix A	Table 2- 1: RRM Dam Features		Updated TMA Dam Height and Dam Length to End of Stage 5 construction.

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Emergency Response Plan

1. Purpose and Scope

This Emergency Preparedness and Response Plan (EPRP) defines responsibilities and provides procedures designed to identify unusual and unlikely conditions that may endanger Rainy River Mine (RRM) dams (tailings dam, water management dam, and water diversion structures) in time to take mitigating action and to notify the appropriate emergency management authorities of possible, impending, or actual failure of the dams. This EPRP links the operation, maintenance, and surveillance manual (OMS) with the general EPRP that has been developed for the New Gold Inc. (NGI) Rainy River Mine.

This EPRP is only about the dam-safety-related emergency preparedness and response plan. Other emergency conditions, such as personnel injury, fire, incident spill, high wind, security, electrical power outage, site access and security etc. are all covered in the RRM site-wide Emergency Preparedness and Response Plan. An independent Environment Risk and Response Plan has also been prepared for dam breach inundation by NG Environment from the environmental perspective.

The EPRP includes two parts.

- Part A: ERP, Emergency Response Plan, for RRM emergency use
- Part B: EPP, Emergency Preparedness Plan, for RRM COI emergency use.

2. Roles and Responsibilities

RRM has a site emergency response team (ERT) responsible for side-wide emergencies. This section describes the roles and responsibility of RRM teams specific to the emergency conditions occurring at tailings and water management facilities, i.e., Dam Safety Events.

2.1 General Manager

General Manager is the Incident Commander (IC) responsible for overall emergency response and preparedness at the RRM. The IC's responsibilities specific to the Dam Safety Events are the following.

- Oversight the assessment of the dam safety events carried out by RRM managers, TDE, water management engineer and EOR.
- Approve and declare the Dam Alert and Dam Breach events based on the suggestions made by RRM managers, TDE, water management engineer and EOR.
- Lead the response actions following the declaration of Dam Alert and Dam Breach events.
- Responsible for work with government agencies and making sure that RRM's response to Dam Safety Events satisfies legal and regulatory requirements.

2.2 Department Managers

RRM department managers responding to Dam Safety Event are Capital Projects Manager, Environment Manager, and Mill Managers. As a designated RP(Responsible Person according to MAC), the Capital Projects Manager takes lead.

- Lead the assessment of the Dam Safety Events together with IC, TDE, water management engineer and EOR.
- Provide suggestions to IC to determine Dam Safety Events.

- Asist the IC and ERT in the response actions following declaration of Dam Alert and Dam Breach events.

2.3 NG Engineers and EOR

NG Engineers responding to Dam Safety Events are the TDE and Water Management Engineer. The EOR is SRK Consulting.

- The TDE/ representative responds to unusual conditions and abnormal performance observed at all the RRM dams. When the TDE is off site, this responsibility is that of The Capital Projects Manager or the designated representative.
- Water Resource Engineer/ representative responds to unusual conditions and abnormal performance observed at all the RRM ponds.
- TDE lead the TARP assessment and Dam Safety Events evaluation with the assistance of RRM managers and EOR.
- EOR supports the RRM Engineers and Managers to conduct the assessment of Dam Safety Events.
- Asist the IC and ERT in the response actions following declaration of Dam Alert and Dam Breach events.

2.4 ERT

- Send out internal and external notification once a Dam Alert or Dam Breach event is declared.
- Responsible for the response actions following declaration of Dam Alert and Dam Breach events.
- Coordinates response team activity.

2.5 Contact Info

RRM ERT maintains the contact info of communities in the dam breach inundation zones.

Environment Manager is the point of contact between RRM and government agencies in terms of Dam Safety Events.

People listed in Table 2- 1 form the dam safety emergency operation team of the RRM.

Table 2- 1: Dam Safety Events Contact Info

Position		Name	Contact Information	Alternate
Incident Commander/ General Manager		Gordon Simms	(807)-707-5308 Gord.Simms@newgold.com	See Site Duty Manager Schedule
RRM Managers	Capital Projects Manager	Travis Pastachak	(M) 306 250 3500 Travis.Pastachak@newgold.com	See Site Duty Manager Schedule
	Mill Manager	Mohammad Taghimohammadi	(M) 807 707 1050 Mohammad.Taghimohammadi@newgold.com	Brad Simms – (807) 708-6367 Jody Roussy – (807) 707-7341
	Environmental Superintendent	Garnet Cornell	(M) 807 276 0106 Garnet.Cornell@newgold.com	See Site Duty Manager Schedule
ERT	Operations Sector	ERT Captain	Radio	See Response Capability Schedule
	Safety Officer	Richard Francoeur	(M) 807 708 2524 Richard.Francoeur@newgold.com	See Site Duty Manager Schedule
	Emergency Services Coordinator	Jarid Sandelovich	(M) 807 708 4852 Jarid.Sandelovich@newgold.com	See Response Capability Schedule
TDE		- Vacant (RP in Interim)	-	Travis Pastachak (M) 306 250 3500
Acting Water Management Engineer		Emily O'Hara	(M) 778 694 2423 Emily.O'Hara@newgold.com	Garnet Cornell (M) 807 276 0106
EOR		Calvin Boese/ Kyle Scale	(M) 306 370 0549 cboese@srk.com	(M) 306 715 2549 Kyle Scale
		Michael Dabiri/Samantha Barnes	(M) 604 868 9953 mdabiri@srk.com	(M) 778 866 7022 Samantha Barnes

3. Emergency Response Process and Procedure

3.1 Emergency Response Plan

This document is to be read in conjunction with the RRM Emergency Response Plan (SAF-PLN-0052) which provides further detail on site emergency response processes and procedures including crisis management and communications.

3.2 Dam Safety Hazards and Failure Modes

Dam safety hazards include external hazards and internal hazards.

External hazards originate outside the boundary of the dam and reservoir system and are beyond the control of the dam owner. Those specific to TAM dams and water management dams are:

- Meteorological events, such as floods, intense rainstorms (causing local erosion or landslides), temperature extremes, ice, lightning strikes, and windstorms.
- Seismic events, either natural, or caused by economic activity such as mining.
- Vandalism and security threats.

Internal hazards may arise from the ageing process or from errors and omissions in the design, construction, operation, and maintenance of the dam and water structures. Those specific to TMA dams and water management dams can be subdivided by source:

- Human-related failure:
    - omissions and errors in design, construction, and operation of the dams, spillway and or culverts.
    - omissions and errors in plans, such as OMS strategies and procedures, emergency plans, inflow forecasts, water balance model etc.
- Failure of infrastructure such as mechanical, electrical, and control subsystems, access road, bridges, and instruments.

A failure mode describes how a component failure occurs to cause loss of the system function. In any analysis, the failure characteristics, including extent and rate of development, should be determined to an appropriate level of detail. At a general level, there are two dam failure modes resulted from water up and or dam down:

- Overtopping – Inadequate freeboard leading to the flow of water over the crest of the dams in a manner not intended or provided for in the design, construction, maintenance, and operation of the dams.
- Collapse – Inadequate internal resistance to the hydraulic, seismic, and other forces applied to the dams, foundations and abutments while being hydraulically operated in accordance with the design intent.

NGI is working together with the EOR to conduct PFMA (potential failure mode analysis) for the TMA dams and water management dams.

3.3 Incident Detection and TARPs

Incidents are the unusual condition or abnormal performance of dam. After an unusual condition or incident is detected and confirmed, NG will conduct the TARPs to categorize the condition of incident into one of the established risk levels.

A trigger action response plan (TARP) defining trigger levels for performance indicators has been developed according to MAC (2021) as shown in Appendix A.

A series of escalating qualitative risk levels assessed for each performance indicator. For each performance indicator and each risk level there are pre-defined risk management actions. The number of risk levels are dependent upon the performance indicator, the risk management plan, and the associated critical control.

Surveillance response plans (SRPs) corresponding to the performance indicators are as the following:

- SRP for High Pond:
  - Rainfall
  - Tailings Facility Freeboard
  - Water Facility Freeboard
- SRP for Increase Seepage through Dam
  - Sinkhole in Dam Crest or DS Slope if seepage is observed.
  - Internal Erosion
  - Seepage through Dam
  - Standing Water at DS Toe
- SRP for Observation of Dam Deformation
  - Displacement, Sloughing, Crack, Bulging of Crest or DS Slope
  - Sinkhole in Dam Crest or DS Slope if dam deformation is observed.
  - Surface Erosion
- SRP for Post-EQ
  - Earthquake
- SRP for Special Event
  - Snowmelt
- Instrument Threshold Exceedance Responsibilities Workflow
  - Slope Indicator
  - Piezometers
  - Dam Settlement

SRPs are the enhanced surveillance plans. See Appendix B in Part 2 and 3 for the details of SRPs applicable to TMA and water management facilities.

3.4 Post-Incident Analysis

TMA nonconformances, un-anticipated upset conditions, or an emergency are followed up with a post-incident analysis, as soon as possible after the incident. The post-incident analysis captures and considers the following:

- Methodologies are in place to mitigate similar incidents from happening in the future.
- Were mistakes made that led to the incident, or in responding to the incident? Provide guidance to avoid mistakes in the future.
- What can be done to improve the response if similar incident occurs in the future?
- Any recommendations for change within the TMA or OMS manual as an outcome of the post-incident analysis?

Post-incident analysis is conducted by the TDE with consult from the EoR. Results of the analysis should be documented and reported to the Responsible Person, Accountable Executive Officer, and Board of Directors, as appropriate.

3.5 Emergency Levels

An emergency is defined by the Mining Association of Canada (MAC, 2021) as:

"… a situation that poses an impending or immediate risk to health, life, property, or the environment and which requires urgent intervention to prevent or limit the expected adverse outcomes."

More specifically, CDA (2021) defines emergency as:

"*A present or imminent threat, either natural or manmade, created by a release of water or other retained fluid from a dam, that requires prompt coordination of actions to protect the health, safety or welfare of people, or to limit damage to property or environment."*

MAC (2021) suggests a Four Risk-Level Framework which has similarity to Emergency Activation Levels suggested by CDA (2021). Two guidelines are grouped together as shown in Table 3- 1.

Table 3- 1: Risk and Emergency Levels

MAC (2021)		CDA (2021)	
Risk Level	Definition and Actions	Emergency Level	Definition
Green – Acceptable	• Performance is in line with performance objectives.	Normal River Condition	• River conditions are normal, no Flood Situation. • Dam is being operated within the specified operating limits and no adverse events are forecast.
Yellow – Minor Risk	• There may be a pre-defined risk management action that can be taken, or • the pre-defined action may be to increase the frequency of surveillance and analysis. • Other surveillance activities may be undertaken. • Surveillance results and corresponding actions are documented and reported.	Flood Situation (1)	• High river flows that may not threaten the safety of the dam but will cause (or are forecasted to cause) local flooding. • The province is typically responsible for flood management and flood warning. However, as a dam will need to pass or release the flow, the dam owner should be involved in the coordination of flood management.
		Dam Alert (2)	• Abnormal condition that poses a threat. • The hazard or incident does not pose an immediate danger but could develop into one. • Maximum operating water level has been exceeded and is expected to continue to rise. • Unexpected release of water or other retained fluid.
Orange – Moderate Risk	• Pre-defined risk management actions are implemented. • Surveillance activities may be intensified to monitor the performance indicator in question. • Related performance criteria, and the effectiveness of the risk management action implemented. • Expert advice may be sought as appropriate, including from the EOR. Risk management actions are implemented, and results of follow-up surveillance activities are documented and reported. • The accumulation or combination of moderate risk situations could lead to a high-risk situation and threshold values will need to be assessed accordingly.	Potential Dam Emergency (3)	• Potential dam failure is developing. • Downstream agencies or communities may need to take steps to mitigate damage or prepare for evacuation. • Maximum operating water level has been exceeded, and potential for dam overtopping has been identified
Red – High Risk	• An imminent loss of control or a loss of control has occurred. • Depending on the potential consequence, this may trigger a significant pre-defined risk management action (e.g., ceasing ore processing operations) or it may trigger the implementation of the ERP. • The accumulation or combination of moderate risk situations could lead to a high-risk situation and threshold values will need to be assessed accordingly.	Dam Failure	• Dam failure is imminent or occurring. • Evacuation of the affected population is appropriate. • Control of water levels and flows has been lost and overtopping is expected to result in failure.

(1) The risk of flooding can range from low to high.
(2) Dam Alert should be better named Dam Incident. If a dam is designed to store IDF with spillway, operating above MOWL is just an incident and does not pose immediate dam safety concern. It is more an environmental issue for mining dams.
(3) Potential Dam Emergency should be better defined as IDFL is reached which implies potential overtopping. It is a Dam Alert.

All is about dam safety. By combining MAC (2021) and CDA (2021), a three-level of emergency response called Dam Safety Event, is created for RRM TMA and water management facilities. The TDE led by the Capital Projects Manager will discuss the safety status of the dams and declare one of the three Dam Safety Events, together with the Mill Manager, Environment Manager, General Manager, ERT and EOR of RRM.

The Dam Safety Events are defined as:

- Incident

  An abnormal condition or performance of the dam with the potential to jeopardize the safety of the dam but that, at the present time, is not expected to lead to a breach of the dam.

  It is not considered an emergency.

- Alert

  An abnormal condition or performance of the dam that, without swift and effective intervention, could further degenerate with time and lead to a breach of the dam.

- Breach

  An actual breach or abnormal condition or performance of the dam that has a significant probability of leading to a breach of the dam.

Pond water level exceeding the NOWL (Normal Operating Water Level) is considered a High Pond. Exceeding MOWL (Max. Operating Water Level), i.e., overspill through spillway of TMA pond or water management facilities except for WMP, and freshwater diversions and ponds, is an environmental emergency, but not a dam safety emergency. However, if water level is at the IDFL Inflow Design Flood Level) or higher, it is considered a dam safety emergency, triggering an Alert or Breach event, depending on the development of the situation.

3.6 Flowchart for Dam Safety Assessment

Once any unusual condition or abnormal performance is observed at any of the RRM dams, the Capital Project Manager or TDE or their delegate must:

- Refer to TARP in Appendix A to identify the risk level for an unusual condition or abnormal performance of the RRM dam.
- Follow Figure 3-1, the decision analysis preprocess, actions for each type of Dam Safety Events.
- Refer to inundation maps.
- Follow the notification process and reporting requirements.

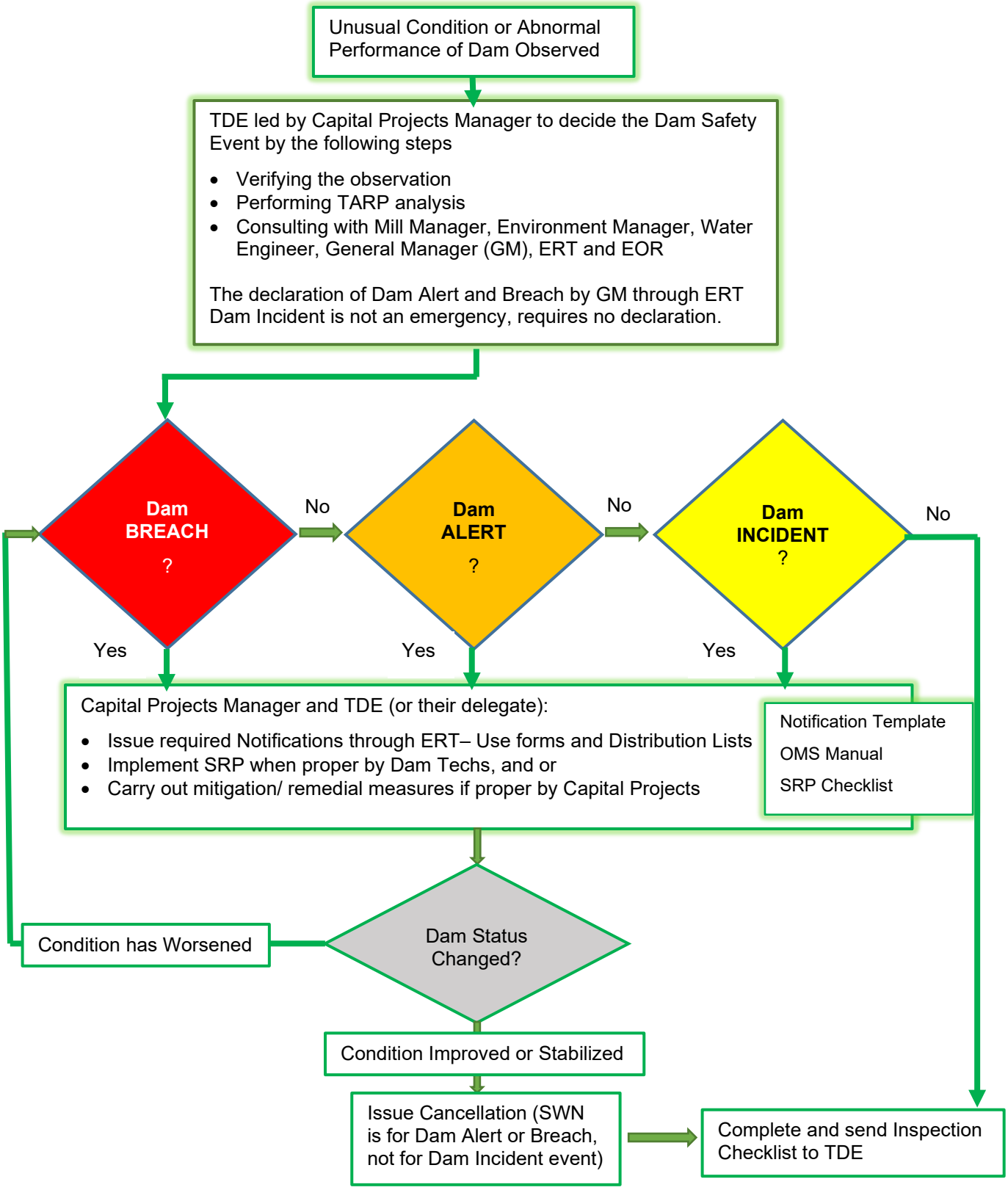

Figure 3- 1: Flow Chart of Dam Safety Events

3.7 Notification and Responsibility

3.5.1 Dam Incident Notification

If a dam incident condition is identified, notifications must be issued. Capital Project Manager or delegate is to prepare the Dam Incident notification form (Table 3- 2) outlining the conditions and actions RRM is taking, and contact information.

3.5.2 Dam Alert / Breach Notification

In the event of a dam alert/breach condition is identified, it is the responsibility of the General

Manager (IC, or his delegate) to instruct ERT to initiate notifications through Send Word Now (SWN), RRM's mass notification tool (to be developed, template is shown in Table 3-3 and Table 3-4. SWN notifications are sent to internal personnel, government agencies, consultants, and COI etc. in the forms of Telephone, Email, and text. Recipients are asked to confirm receipt of the message. All delivery and confirmations are logged in SWN.

Additional alerts and Cancellation alerts are continued to issue notifications every 12 hours until the condition stops, at which time issue a cancellation notification.

3.5.3 Notification Flowchart and Responsibility

The Notification Chart as shown in Figure 3-2 includes appropriate contact information such as names, positions, and telephone numbers.

Dam incident is not an emergency. The notification of dam incident is generally limited to RRM and EOR, possibly regulators. The Notification chart applies to Dam Alert and Dam Breach event.

IC declares the dam safety event as shown in Figure 3-1. After the declaration, the notification should be sent out by RRM to all stakeholders as shown in Figure 3-2.

3.8 Emergency Actions

After the initial notifications have been made, NGI will continue acting to save the dam and minimize impacts to life, property, and the environment by taking following actions,

- Assess the status of the situation as shown in Figure 3-1,
- Keep others informed through communication channels established during the initial notifications as shown in Figure 3-2.
- Secure the affected operational areas at the dam to protect operations personnel and the public.

3.9 Termination and Post-Emergency Follow-up

The Environment Manager and ERT Manager, on behalf of IC, are responsible for notifying the authorities that the condition of the dam has been stabilized. Government officials are responsible for declaring an end to the public emergency response. Examples are shown in Table 3-3 and Table 3-4.

Following the termination of an incident, NGI, in coordination with emergency management authorities, would conduct an evaluation that includes all affected participants. At a minimum, the following should be discussed and evaluated in an after-action review:

- Events or conditions leading up to, during, and following the incident.
- Significant actions taken by each participant and improvements for future emergencies.
- All strengths and deficiencies found in the incident management process, materials, equipment, staffing levels, and leadership.
- Corrective actions identified and a planned course of action to implement recommendations.

The results of the after-action review should be documented and used as a basis for revising the ERP.

All dam safety events should be logged in Table 3-5.

Table 3- 2: Dam Safety Incident Notice Form

NAME OF DAM: _____

Date: _____ Time: _____	**Distribution** To: Capital Projects Manager, TDE, Environment Manager, Mill Manager, General Manager. Optional: EOR, and related government agencies
A DAM INCIDENT is an abnormal condition or performance of the dam that has the potential to jeopardize the safety of the dam, but that is NOT expected to lead to a breach of the dam. **THIS IS NOT AN EMERGENCY SITUATION**	
Description of condition and events: ,	
Outlook for the next 24 hours Present conditions are favorable, and flows are expected to decrease. Discharge may increase if conditions worsen.	
Signed:	Position/Title
Date:	Time:

Table 3- 3: Dam Safety Alert Notice Form

Distribution
To: Capital Projects Manager, TDE, Environment Manager, Mill Manager, General Manager, Accountable Executive Officer, EOR, ITRB and related federal and provincial government agencies, local township, police, and COI

DAM ALERT INITIATION

SUBJECT: INITIATION - RRM EMERGENCY NOTIFICATION - DAM ALERT

This is an emergency notification from RRM. This is Alert # RRM_**XX**

A dam alert is being issued for the RRM.

RRM has observed an abnormal condition at the XXX Dam and is actively investigating the situation. As a precaution, local agencies may need to activate emergency response procedures.

Please check the attached inundation map in case evacuation is needed.

This RRM Dam Alert is in effect and resent every 12 hours until rescinded.

Did you receive this Alert?

Distribution
To: Capital Projects Manager, TDE, Environment Manager, Mill Manager, General Manager, Accountable Executive Officer, EOR, ITRB and related federal and provincial government agencies, local township, police, and COI

DAM ALERT CANCELLATION

SUBJECT: CANCELLATION - RRM EMERGENCY NOTIFICATION - DAM ALERT

This is a cancellation of the emergency notification from RRM. This is Alert # RRM_**XX**

The previously declared Dam Alert # RRM_XX in effect for the XXX Dam has been rescinded.

Did you receive this Alert?

Table 3- 4: Dam Safety Breach Notice Form

Distribution

To: Capital Projects Manager, TDE, Environment Manager, Mill Manager, General Manager, Accountable Executive Officer, EOR, ITRB and related federal and provincial government agencies, local township, police, and COI

DAM BREACH INITIATION

SUBJECT: INITIATION - RRM EMERGENCY NOTIFICATION - DAM BREACH

This is an emergency notification from RRM. This is Alert # **RRM_XX**

The **XXX** Dam has failed.

Implement your emergency evacuation plan immediately.

This RRM Dam Alert is in effect and resent every 12 hours until rescinded.

Did you receive this Alert?

Distribution

To: Capital Projects Manager, TDE, Environment Manager, Mill Manager, General Manager, Accountable Executive Officer, EOR, ITRB and related federal and provincial government agencies, local township, police, and COI

DAM BREACH CANCELLATION

SUBJECT: CANCELLATION - RRM EMERGENCY NOTIFICATION - DAM BREACH

This is a cancellation of the emergency notification from RRM. This is Alert # RRM_**XX**

The previously declared Dam Breach # RRM_**XX** **at** **XXX** Dam has been rescinded.

Did you receive this Alert?

Table 3-5: Dam Emergency Event Log

DATE	TIME	EVENT #	Category	DESCRIPTION	ACTION TAKEN	ACTION OWNER	REMARKS
1/1/2022		1	Incident	Stage 2 tailings discharge exceeding the Max. elevation at Sta….	Immediately ceased discharge at those stations and moved to east of Y junction	Site Service	Report to regulator

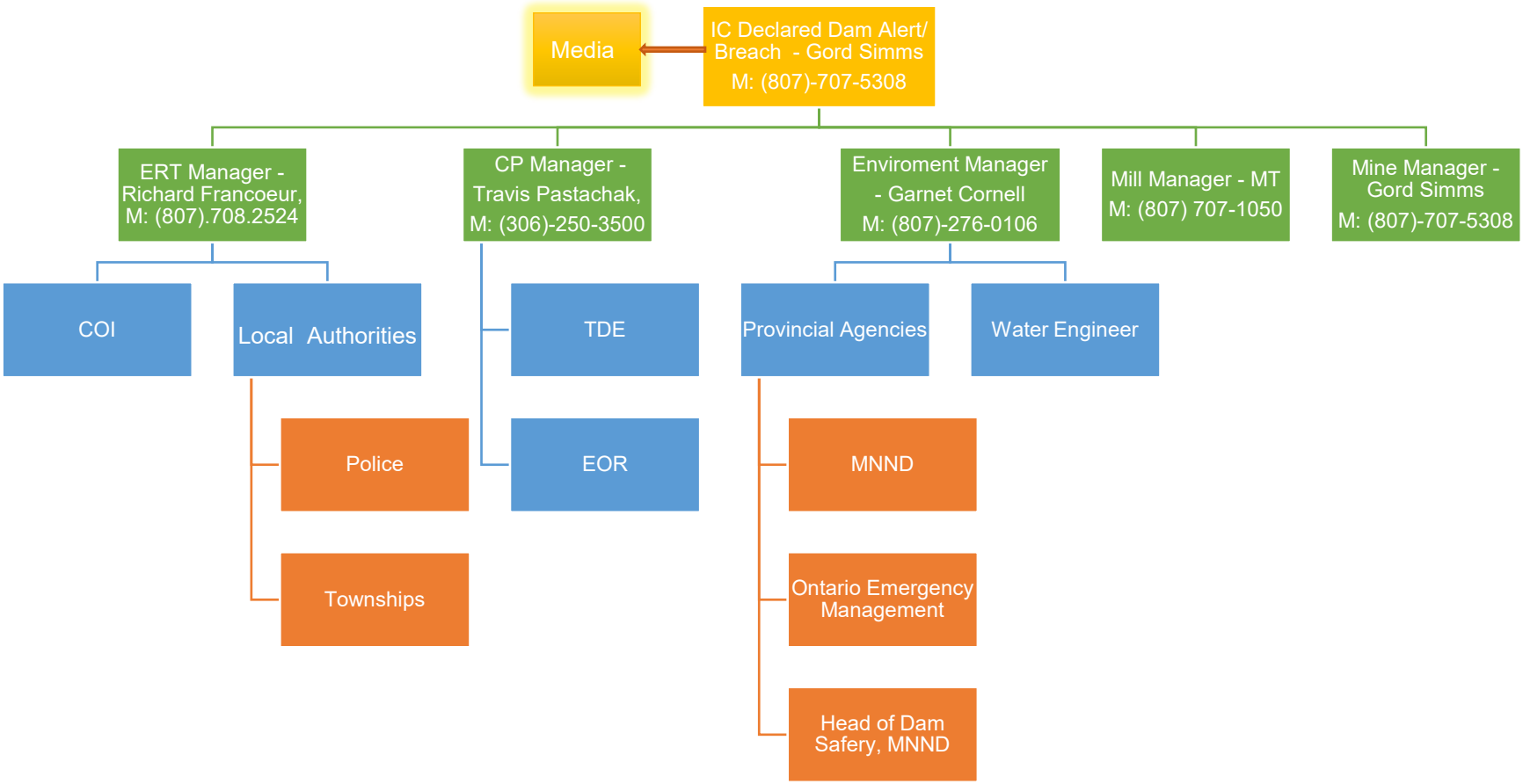

Figure 3- 2: Dam Alert and Dam Breach Notification Flow Chart

4. Maintenance, Training and Testing of Dam Emergency Plan

4.1 Maintenance

EPRP for dam safety is developed and maintained by TDE with assistance from various RRM teams.

EPRP is scheduled to update every year and or major changes to RRM.

4.2 Training, Exercise and Drills

Dam safety ERP training as shown in Table 4-1:

- TDE and Capital Projects Manager are jointly responsible for training people involved in the emergency response to ensure that they are thoroughly familiar with its elements and their responsibilities and duties under the plan.
- Community Manager and ERT are jointly responsible for training the COI in preparing emergency preparedness plan, and evacuation actions.

Training records are maintained by the Capital Projects team and ERT for internal and external training, separately. An example is shown in Table 4-2.

Table 4- 1: Types of Training, Drills and Exercises

EXERCISE TYPE	FREQUENCY	DESCRIPTION	PARTICIPANTS
Internal Training and Annual Refresher	Annual - Change in 50% of key personnel, or replaced by an actual event	Understand the contents and procedures.	• Capital Project Team • ERT • Mill, Environment managers and supervisors
External Awareness	Every two years	• Prepare the emergency preparedness plan • Evacuation process	• COI • ERT • Community
Send Word Now Test Alert (external)	Every two year	Send Word Now Test Alert for all externals listed in plan	• COI • ERT • Community
Drill	When proper, or replaced by an actual event	• Understand the contents, and • Practice the procedures.	• Capital Project Team • ERT • Mill, Environment managers and supervisors

Table 4-2: Training Log

EXERCISE TYPE	DATE	PARTICIPANTS	DESCRIPTION
OMS and EPRP Annual Refresh	May 2, 2022	CP, Environnent, Site Service, Mill	First OMS online training introducing the new OMS manual, dam inspection and EPRP
TMA Mock	Nov. 25, 2022	CP, ERT	Internal exercise of a presumed borrow pit berm failure.
OMS and EPRP Annual Refresh	May 16, 2023	CP, Environnent, Site Service, Mill	Online training revising OMS manual, dam inspection, and EPRP

OMS and EPRP Annual Refresh	Nov. 19, 2023	CP, Environnent, Site Service, Mill	In-person training revising OMS manual, dam inspection and EPRP to all SS, CP, and Mill Crews

Appendix A: TARPS

Hazard	Indicator	Risk Level	Action to be Taken
Rainfall	Rainfall < a 5-day-70 mm Event	**Acceptable**	Surveillance activities and frequencies according to the OMS manual
	EDF> Rainfall > a 5-day-70 mm Event EDF: • For TMA, MRP, WMP: 320 mm in 30 days • For SED 1, 2 and 3, 110 mm in 24 hours without pumping, or 24 mm in 30 days with pumping. • For WDP and freshwater diversion dams, no EDF was defined	**Low Risk**	• Initiate SRP for High Pond if needed. • Surveillance results to be provided to EoR for review. • EoR to visit site to assess the situation when necessary. • Document location, photograph, and survey area of concern • Take appropriate mitigation measures with engineering review
	IDF>Rainfall>EDF IDF: • For TMA: 476 mm in 24 Hours (PMP) • For MRP and WMP: 476 mm in 24 Hours (PMP) • For Clark Diversion and SED: 127 mm in 24 hours (Rainfall) • For West Creek Diversion: 476 mm in 24 Hours (PMP) • For other facilities: Not specified	**Moderate Risk**	• Initiate SRP for High Pond • Surveillance results to be immediately provided to EoR for review. • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Take appropriate mitigation measures with engineering review. • Suspend activities in area of concern. • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	> IDF (Rainfall, or PMP)	**High Risk**	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP & EPP
Snowmelt	• Snowpack is less than 170 cm (i.e., 120% normal snowfall at Barwick). • Rainfall is less than 53 mm in 24 hours which is equal to a 1:2-year, 24-hour, 53 mm rainfall	**Acceptable**	Surveillance activities and frequencies according to the OMS manual
	• Extreme cumulative snowpack (greater than 170cm). • Rapid snowmelt and/or heavy rainstorms exceeding a 1:2-year, 24-hour rainfall, or • A combination of 42 cm snowpack plus forecasted temperature of below freezing to above 18°C within the next two weeks	**Low Risk**	• Initiate SRP for High Pond if pond level is high (DSN/MOWL) • Surveillance results to be provided to EOR for review. • EoR to visit site to assess the situation when necessary. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review

Hazard	Indicator	Risk Level	Action to be Taken
Earthquake (BGC Dam Classification, to be updated according to SRK Dam Classification)	For TMA perimeter dams, SPD, WCD, MRP, and WMP: • M 6.0 for the design earthquake at a site-to-source distance of approximately 174 km or farther (Correspond to Dam Class: Low). • Displacement criteria unclear. For Clark Creek Dam, Teeple Pond Dam, WDP and SRP Dam: • No earthquake activity, or • M 6.0 for the design earthquake at a site-to-source distance of approximately 174 km or farther Greater magnitude EQ is unlikely to occur and not considered. Table 4-2 in BGC-4910-DT00-RPT-0004.001	**Acceptable**	Surveillance activities and frequencies according to the OMS manual
	For TMA perimeter dams, SPD, WCD, MRP, and WMP: • M 6.0 for the design earthquake at a site-to-source distance of approximately 126 km or closer (Correspond to Dam Class: Significant). • Displacement criteria unclear. Table 4-2 in BGC-4910-DT00-RPT-0004.001	**Low Risk**	• Initiate SRP for EQ • Surveillance results to be immediately provided to EoR for review • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review
	For TMA perimeter dams, SPD, WCD, MRP, and WMP: • M 6.0 for the design earthquake at a site-to-source distance of approximately 86 km or closer (Correspond to Dam Class: High and Very High). • Displacement criteria unclear. Table 4-2 in BGC-4910-DT00-RPT-0004.001 or • Earthquake resulted in visible damage to the dam or appurtenances	**Moderate Risk**	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	For TMA perimeter dams, SPD, WCD, MRP, and WMP: • M 6.0 for the design earthquake at a site-to-source distance of approximately 50 km or closer. (Correspond to Dam Class: Extreme) • The maximum allowable permanent seismic displacement: 0.3 m. For Clark Creek Dam, Teeple Pond Dam, WDP and SRP Dam • M 6.0 for the design earthquake at a site-to-source distance of approximately 174 km or closer (Correspond to Dam Class: Low), or • Displacement criteria unclear. Table 4-2 in BGC-4910-DT00-RPT-0004.001 or • Earthquake resulted in uncontrolled release of water from the dam	**High Risk**	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP and EPP

Hazard	Indicator	Risk Level	Action to be Taken
Tailings Facility Freeboard	Water level stable and below normal operating level (NOWL). Stage 5 NOWL: 372.8 m.	**Acceptable**	Surveillance activities and frequencies according to the OMS manual
	Spillway invert (MOWL) > Water level > NOWL Stage 5 MOWL: 373.3 m	**Low Risk**	• Initiate SRP for High Pond when needed. • Surveillance results to be provided to EoR for review. • EoR to visit site to assess the situation when necessary. • Document location, photograph, and survey area of concern • Implement engineering review. • Take appropriate mitigation measures with engineering review.
	IDFL > Water level > MOWL It is already an Environment Incident (exceeds EIL). See Spillway Flow as well. Stage 5 IDFL: 374.3 m	**Moderate Risk**	All items from previous situation plus: • Suspend activities in area of concern. • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Water levels exceed or expected to exceed the IDF level. See Spillway Flow as well	**High Risk**	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP and EPP
Water Facility Freeboard (1,2,3)	Water level stable and below NOWL. See Table 4-3 in Part 3	**Acceptable**	Surveillance activities and frequencies according to the OMS manual
	Water level exceeds NOWL but below spillway invert (MOWL). See Table 4-3 in Part 3	**Low Risk**	• Initiate SRP for High Pond • Surveillance results to be immediately provided to EoR for review • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review
	Water level exceeds the spillway Invert (MOWL) but below IDF level (IDFL). It is already an Environment Incident (exceeds EIL). See Table 4-3 in Part 3 See Spillway Flow as well	**Moderate Risk**	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Water levels exceed or expected to exceed the IDF level. See Table 4-3 in Part 1 See Spillway Flow as well	**High Risk**	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP &EPP

(1) Excluding MRP Dam, Clark Creek Dam, and Teeple Pond Dam. Those are designed for overtopping.
(2) IDFL not specified for WDP, SED 2 and South Runoff Pond, Stockpile Pond Dam.
(3) MOWL, if different from spill invert, not specified for the four freshwater dams.

Hazard	Indicator	Risk Level	Action to be Taken
Spillway Flow	Reservoir water surface elevation at spillway crest or spillway is flowing with no active erosion	Acceptable	Surveillance activities and frequencies according to the OMS manual
	Spillway flowing with active gully erosion	Low Risk	• Initiate SRP for High Pond when needed. • Surveillance results to be immediately provided to EoR for review • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review
	Spillway flow that could result in flood of people downstream if the reservoir level continues to rise	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Spillway flowing with an advancing head cut that is threatening the control section	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP and possibly EPP
Displacement – Sloughing, – Crack, – Bulging – Alignment – Depressions	• Surveillance results within design limits and range of historic trends • Nonvisible.	Acceptable	Surveillance activities and frequencies according to the OMS manual

	• Visible displacement
	• Condition new, but no sign of continued progression or worsening condition.
		Low Risk	• Initiate SRP for Dam Deformation when needed.
			• Surveillance results to be immediately provided to EoR for review.
			• EoR to visit site to assess the situation when necessary.
			• Document location, photograph, and survey area of concern.
			• Implement engineering review.
			• Take appropriate mitigation/monitoring measures with engineering review, such as.
			  ○ Conduct frequent survey.
			  ○ Place buttress.
			  ○ Place sandbags as necessary around crack area to divert any storm water runoff from flowing into crack(s).

	• Signs of continued progression or worsening condition (crack elongating, scarp height increasing, new scarps forming, dam crest settling, downstream slope or toe area bulging). • loss of freeboard (crest dropped). • Surveillance results continuously increasing from range of historic results.	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern. • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	• Toe displacement related to sloughing >3 m from original location. • Bulging of downstream slope >2 m in height	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP

Hazard	Indicator	Risk Level	Action to be Taken
Sinkhole	Observation of new sinkhole in reservoir area or on embankment. See Seepage and Internal Erosion as well	Moderate Risk	• Initiate SRP for Increase Seepage through Dam • Suspend activities in area of concern. • Carefully observe dam for signs of depressions, seepage, sinkholes, cracking, or movement. • Stockpile additional fill. • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Rapidly enlarging sinkhole	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP
Internal Erosion	• Not happened • No visible seepage • No wet spots at downstream dam toe	Acceptable	Surveillance activities and frequencies according to the OMS manual
	• Seepage is clear. • Seepage rate not increasing. • New appearance of wet or soft areas on dam's toe area	Low Risk	• Initiate SRP for Increase Seepage through Dam • Surveillance results to be immediately provided to EoR for review • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review
	• Seepage water cloudy or turbid. • Seepage rate increasing • No visible whirlpool in pond • Boils with deposits of fines appear in downstream toe area • Sinkholes/settlement appear on dam surface or toe area but not visibly enlarging (requires engineering assessment)	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	• Emerging water is muddy with significant amount of material being displaced or washed away. • Rate of flow is increasing. • Whirlpool visible in pond. • Sinkholes/settlement visibly enlarging on dam surface or toe area. • Boils with deposits of fines growing in downstream toe area	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP
Overtopping (1,2,3)	For central core dam, TMA dams, MRP, SPD, WCD, and homogenous clay fill dams: Teeple and Clark Dam • Pond water levels rising and will exceed dam crest elevation, • Wind-generated waves are running over and eroding dam crest so that pond water level will exceed eroded crest level.	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	For homogenous clay fill dams: WMP, WDP, SRP, Sediment 2, • Pond water levels rising and will exceed dam crest elevation, • Wind-generated waves are running over and eroding dam crest so that pond water level will exceed eroded crest level.	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP and EPP

(1) Excluding MRP Dam, Clark Creek Dam, and Teeple Pond Dam. Those are designed for overtopping.
(2) IDFL not specified for WDP, SED 2 and South Runoff Pond, Stockpile Pond Dam.
(3) MOWL, if different from spill invert, not specified for the four freshwater dams.

Hazard	Indicator	Risk Level	Action to be Taken
Seepage through Dam	• Seepage is clear. • Seepage in location of historic locations. • Seepage rate is within design limits and range of historic trends	Acceptable	Surveillance activities and frequencies according to the OMS manual
	• Seepage is turbid. • Seepage is new area relative to historic performance. • Seepage rate is higher than historic trends.	Low Risk	• Initiate SRP for Increase Seepage through Dam • Surveillance results to be immediately provided to EoR for review • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review
	Same as previous situation plus • Ongoing increased seepage rate from historic trends. • Sand boils observed in downstream toes area. See Internal Erosion.	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Same as previous situation plus • Whirlpool visible in the pond, See Internal Erosion	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP
Standing Water at Dam Toe	• Small volume • No increasing volume or area • If it is from rainfall or snowmelt • No signs of sand boiling at dam toe • Water is clear	Acceptable	Surveillance activities and frequencies according to the OMS manual
	If it is seepage through dam, see Seepage	Low Risk	• Initiate SRP for Increase Seepage through Dam if it is • Surveillance results to be immediately provided to EoR for review • EoR to visit site to assess the situation. • Document location, photograph, and survey area of concern • Implement engineering review • Take appropriate mitigation measures with engineering review
	• Water is muddy. • Sand boiling observed. • If it is caused by internal erosion, see Internal Erosion	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
Surface/ External Erosion	Surface material removed by snow ploughing, intensive rainfall, wave action.	Low Risk	• Initiate SRP for Dam Deformation • Surveillance results to be immediately provided to EoR for review • Document location, photograph, and survey area of concern • Take appropriate mitigation measures with engineering review
	Core or underlying material exposed and being eroded.	Moderate Risk	All items from previous situation plus: • EoR to visit site to assess the situation. • Implement engineering review • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items

Hazard	Indicator	Risk Level	Action to be Taken
Tailings Line Leak/Rupture	Tailings is contained in pipeline ditch or TMA	Low Risk	• Document location, photograph, and survey area of concern • Take appropriate mitigation measures with engineering review
	• Tailings spilled out of pipeline ditch or TMA. • Spilled tailings slurry erodes the dam. • Leaked tailings reported to WDP, WMP, and SED 1	Moderate Risk	All items from previous situation plus: • EoR to visit site to assess the situation • Suspend activities in area of concern • Implement engineering review • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Same as previous situation plus • Leaked tailings reported to freshwater diversions. • Leaked tailings reported to Pinewood River	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP
Tailings near Dam Crest Elevation	Tailings elevation below Max. Elevation,	Acceptable	Surveillance activities and frequencies according to the OMS manual
	Tailings elevation exceeds Max. Elevation but below Dam Crest	Low Risk	• Document location, photograph, and survey area of concern • Take appropriate mitigation measures with engineering review
	Tailings elevation exceeds Dam Crest and spill out of TMA.	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
Dam Settlement	• Annual (TMA) or total (settlement of dam crest, and spillway invert < 0.10 m. • Reduction of a crest to invert vertical elevation difference < 0.05 m. See Table 5-1 and 5-2 in Stage 5 Threshold Report (CRW3295-4910-DT00-MEM-0008.001) for details	Acceptable	Surveillance activities and frequencies according to the OMS manual
	• Annual settlement of dam crest, and spillway invert > 0.10 m but <0.2 m • Reduction of a crest to invert vertical elevation difference > 0.05 m but less than 0.1 m. See Table 5-1 and 5-2 in Stage 5 Threshold Report (CRW3295-4910-DT00-MEM-0008.001) for details	Low Risk	• Document location, photograph, and survey area of concern • Implement engineering review
	• Annual settlement of dam crest, and spillway invert > 0.2 m • Reduction of a crest to invert vertical elevation difference > 0.1 m. See Table 5-1 and 5-2 in Stage 5 Threshold Report (CRW3295-4910-DT00-MEM-0008.001) for details	Moderate Risk	All items from previous situation plus: • Suspend activities in area of concern • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items • Take appropriate mitigation measures with engineering review
	Same as previous situation plus • Pond elevation reaches IDFL	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP

Hazard	Indicator	Risk Level	Action to be Taken
Slope Inclinometer / Shape Accelerometer Array	Rates of displacement < 0.2 mm/day measured in a discrete deformation zone.	Acceptable	• Surveillance activities and frequencies according to the OMS manual
	Rates of displacement > 0.2 mm/day measured in a discrete deformation zone.	Low Risk	• Document location, photograph, and survey area of concern • Implement engineering review. • Take appropriate mitigation measures with engineering review
	One or more SI's or SAA's • Accelerating rates of displacement > 0.2 mm/day, or blockage of the slope inclinometer casing. • Evidence of movement continuation between slope inclinometers. • Unusual visual observations, including toe bulging, cracks, or other signs of instability.	Moderate Risk	All items from previous situation plus: • EoR to visit site to assess the situation. • Suspend activities in area of concern. • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Same as previous situation plus • Nearby VWPs exceed the alert level. • Nearby SI's or SAA's exceed alert level.	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP
Piezometers	• Measured PWP below TMA Stage 5 design PWP at tip location (PWP below PWP corresponding to design FOS) • TMA Ultimate Pre-loading Design Trigger: measured PWP below TMA Ultimate Pre-loading design PWP at tip location (PWP below PWP corresponding to design FOS) • Water Management Dams Trigger: measured PWP below maximum fill elevation at tip location. See Table A-1 in Stage 5 Threshold Report (CRW3295-4910-DT00-MEM-0008.001) for details.	Acceptable	• Surveillance activities and frequencies according to the OMS manual
	• Measured PWP exceeds TMA Stage 5 design PWP at tip location (PWP exceeds PWP corresponding to design FOS) • TMA Ultimate Pre-loading Design Trigger: measured PWP exceeds TMA Ultimate Pre-loading design PWP at tip location (PWP exceeds PWP corresponding to design FOS) • Water Management Dams Trigger: measured PWP exceeds maximum fill elevation at tip location. See Table A-1 in Stage 5 Threshold Report (CRW3295-4910-DT00-MEM-0008.001) for details.	Low Risk	• Document location, photograph, and survey area of concern • Implement engineering review. • Take appropriate mitigation measures with engineering review
	• Significantly exceeds TMA Stage 5 design PWP at tip location (PWP exceeds PWP corresponding to FOS of 1.3 or lower) for WML and BRE CH. See Table A-1 in Stage 5 Threshold Report (CRW3295-4910-DT00-MEM-0008.001) for details.	Moderate Risk	All items from previous situation plus: • EoR to visit site to assess the situation. • Suspend activities in area of concern. • Reassess thresholds and conditions for high-risk situation considering the observed conditions and interactions of various items
	Same as previous situation plus • Nearby VWPs exceed the alert level. • Nearby SI's exceed alert level	High Risk	All items from previous situation plus: • Temporary evacuation of non-essential personnel from the facilities • Prepare to initialize the ERP
Weeds, Plants, Shrubs	• Sparse and low • Shrubs < 1 m tall.	Acceptable	• Surveillance activities and frequencies according to the OMS manual
	• Dense and tall • Invisible ground due to weeds coverage • Shrubs >1.0 m tall	Low Risk	• Document location, photograph, and survey area of concern • Implement engineering review. • Take appropriate mitigation measures with engineering review

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Emergency Preparedness Plan

1. GENERAL

The emergency preparedness plan is to:

- Describes the RRM's emergency management system and roles/responsibilities.
- Provides details of the RRM Dams.
- Defines conditions as they relate to RRM dam operations and describes the notification processes that RRM will follow for these conditions.
- Provides contact information, maintenance, and distribution of this Plan.
- Is to be used in conjunction with inundation maps that we issue.

Upon receipt of this Plan, we recommend that you take the following actions:

- Review the Plan with those people in your organization involved in emergency management.
    - Advise RRM ERT if there have been changes in your agency or organization that impact information in this Plan.
- Use the information to inform your emergency planning ensuring that it:
    - Reflects the hazards identified in this Plan.
    - Aligns/relates to roles and responsibilities defined in this Plan.
    - Identifies notifications that could be issued, their meaning and appropriate response.
    - Links, or refers to inundation maps that we have shared with you.
- Provide training and ensure personnel are prepared to respond to notifications that RRM issues.
- Contact RRM to clarify information. We are available to provide additional information and discuss ways to improve emergency planning and response.

2. FACILITY DESCRIPTION

RRM currently operates 17 dams enclosing 12 ponds as shown in Figure 2-1. Four out of 17 dams are freshwater dams; six are sediment control dams, four tailings dams, and the rest three are treated-water dams. The dam feature is summarized in Table 2-1.

Except for the TMA dams which have been raised annually, the other 13 dams enclosing 11 ponds were constructed a few years ago. 11 out of the 17 dams could potentially result in loss of life, irreparable environmental damage, or destruction of critical infrastructure if one of them is failed. Those dams are highlighted in green.

Dams are designed, constructed, and operated to contain tailings and water. Failure to do it results in the contained tailings and or water spreading to the Pinewood River and affecting the downstream communities.

RRM is committed to safe operation of the mine and safety of local communities. RRM is therefore working together with those communities and local authorities to develop emergency preparedness plans and guide your preparedness for the emergency in case it occurs.

Figure 2- 1: RRM Dams and Ponds

Table 2- 1: RRM Dam Features

Purpose & Facility	Dam Name	Type of Dam	Construction Stage	Max. Dam Height (m)	Dam Length (m)
Tailings Dams	North Dam	Central Core + Rockfill	Under Construction	20.9	2450
	South Dam		Under Construction	26.0	3580
	West Dam 4		Under Construction	19.5	910
	West Dam 5		Under Construction	17.9	695
Process Water Dams	WMP Dam 1	Clay Fill	Final	4.2	850
	WMP Dam 2			9.5	800
	WMP Dam 3			13.3	750
	Mine Rock Pond Dam	Central Core + Rockfill	Final	13.0	1655
	Water Discharge Pond Dam	Clay Fill	Final	2.2	350
Sediment Control Dams	Sediment Pond #1 Dam	Central Core + Rockfill	Final	3.8	1750
	Sediment Pond #2 Dam	Clay Fill	Final	5.2	1460
	Sediment Pond #3 Dam	Central Core + Rockfill	Final	1.0	344
	South Runoff Pond Dam	Clay Fill	Final	6.5	420
Freshwater Dams	Clark Creek Dam	Clay Fill	Final	4.0	285
	Teeple Road Dam	Clay Fill	Final	7.0	465
	Stockpile Pond Dam	Central Core + Rockfill	Final	9.8	380
	West Creek Dam	Central Core + Rockfill	Final	8.9	750

3. RRM EMERGENCY MANAGEMENT

RRM's typical procedure of handling dam safety incidents/ events are the following.

- Detection of an abnormal condition at the dam(s).
- Decision-making and actions within RRM teams and EOR regarding the severity of the problem and appropriate response to the situation.
- Notification by RRM ERT to agencies responsible for public emergencies and safety, given the nature and potential effects of the situation.
- Coordinated response with government agencies and stakeholders.

Most incidents/events will be addressed through regular points of contact for routine operations, community relations and emergency management. When necessary, RRM will activate our response structure to manage and support the response to an emergency.

For the conditions identified in this Plan, we will issue initial notifications following the process described. Further response coordination and liaison between all parties impacted will be determined at the onset of the event and depend on the nature of the event and response.

4. INNUNDATION STUDY AND MAPS

Extensive and intensive rainfall could cause flood situations to the community nearby RRM. The area flooding situation is managed by local authorities.

Hydrodynamic modelling of inundation scenarios for the RRM dams was conducted in 2019 (SRK-STY-0001) and inundation maps were prepared to show the results of the modeling. Those maps show the approximate area(s) flooded, and details such as water arrival locations and times.

Three scenarios were modelled:

- Dam breach at WMP Dam 2 associated with TMA dam failure.
- Dam breach at WMP Dam 1 associated with TMA dam failure, and
- Dam breach at MRP Dam.

Other structures are expected to remain contained within the site.

The modelling is considered a sunny day case. The results of the analysis showed the following.

TMA and WMP Facility:

- The inundation mapping shows that there are in the order of 10 farms and approximately 5 km of highway (over 5 segments) within the inundation zone. Approximately 16 km of local roads may also be inundated. See Figure 4-
- The breach flood wave is contained within natural riverbanks by the time it reaches Rainy River (approximately 30 km downstream).
- It is expected that a plume of fine sediments will continue to be carried downstream by Rainy River toward Lake of the Woods. It is estimated that the plume will reach the mouth 1 to 2 days once it enters the river (or 2 to 3 days post-failure).
- The flood arrival time to the farms and highway segments ranges from less than half hours to over five hours as shown in Figure 4- 2.

MRP:

- The inundation mapping shows that there are in the order of 3 farms and approximately 0.3 km of highway (over 1 segment) within the inundation zone. Approximately 3 km of local roads may also be inundated.
- The breach flood wave is fully contained within the natural riverbanks of Pinewood River well before it reaches the confluence with Rainy River.
- The flood arrival time to the farms and highway segments ranges from a few minutes to one hour (incorrect data between the table and figures in the report) as shown in Figure 4- .

Among the 12 farms, three of them (labelled 1, 2 and 3) are owned by NG. NG's Health and Safety team keeps the civic address, owner's name, and phone number of the farms for emergency contact.

RRM plans to update the inundation study in late 2023 to account for the ultimate dam design and closure plan.

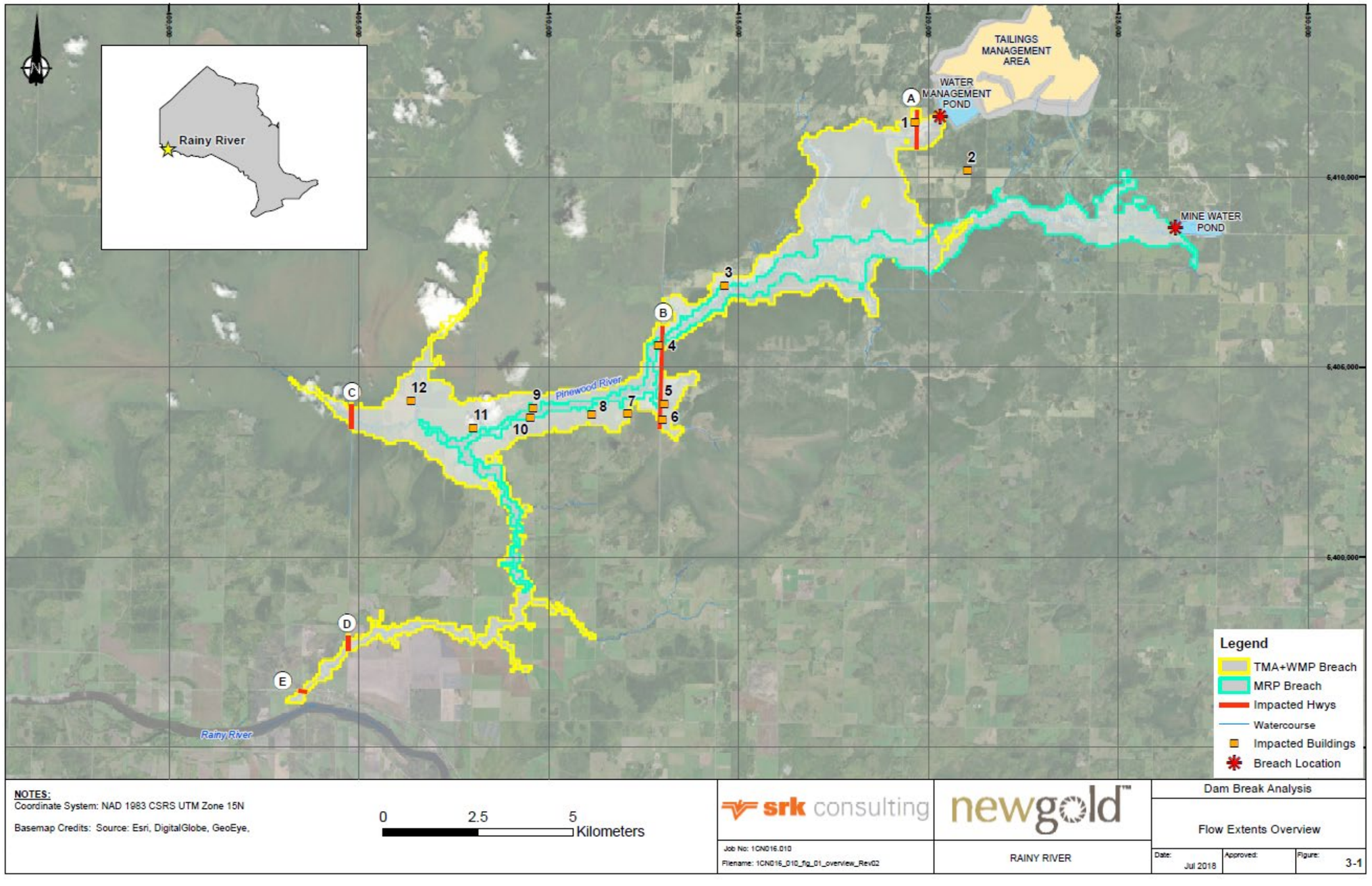

Figure 4- 1: Inundation Map

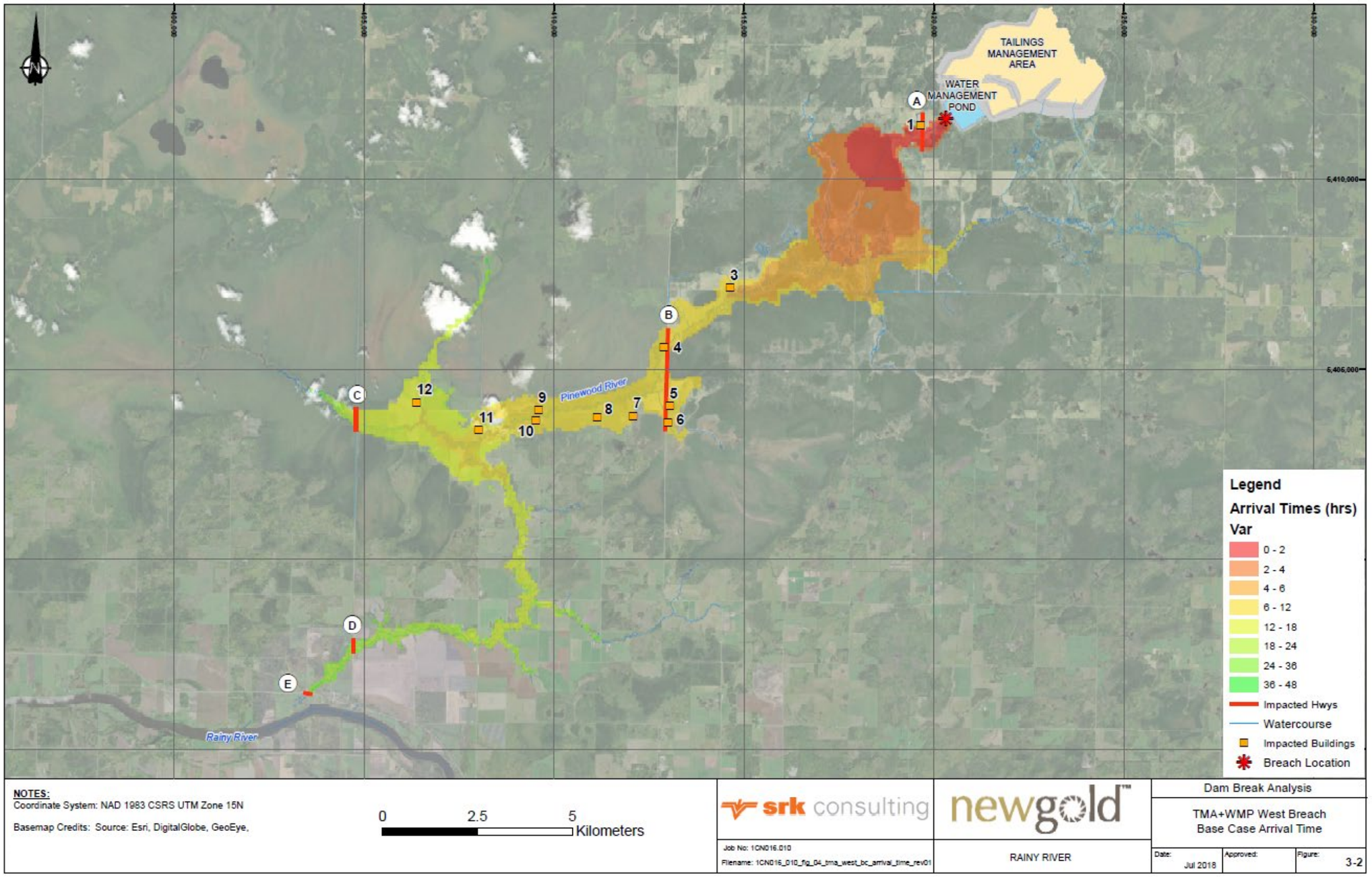

Figure 4- 2: Arrival Time of TMA and WMP Breach

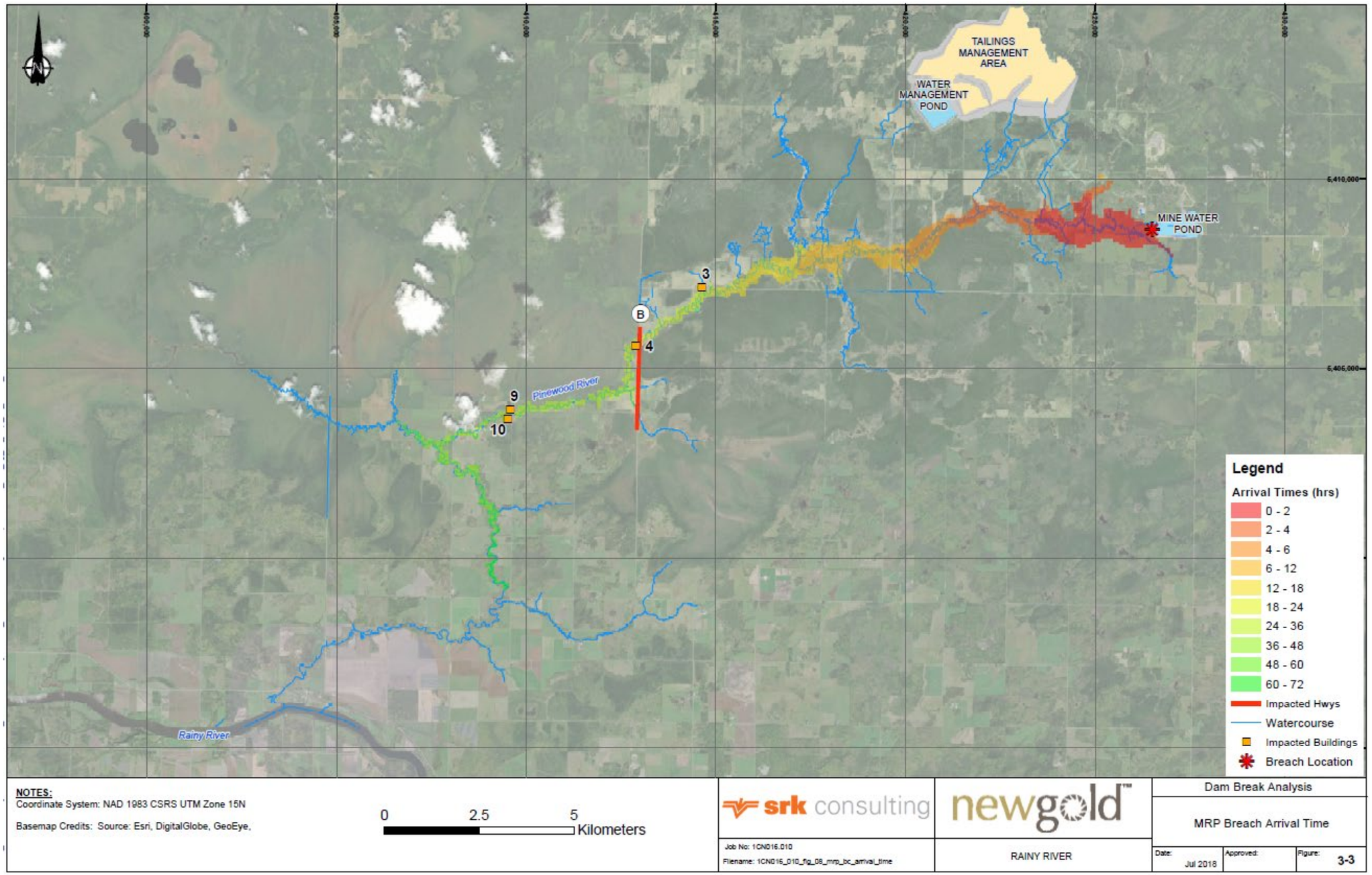

Figure 4- *3*: Arrival Time of MRP Breach

5. EMERGENCY NOTIFICATION AND PROCEDURES

5.1 Notification

All RRM dams have dam safety and water management programs that are aligned and integrated with our communications and emergency management. Under the following two specific operating conditions, RRM will issue notifications to describe the conditions and actions we are taking:

Dam Alert

An abnormal condition is observed at the dams, or the dam performs abnormally, and, without swift and effective intervention, the condition could deteriorate and lead to failure of the dam.

Dam Breach

The dam has breached or is visibly breaching.

5.2 Notification Processes

If a dam alert/breach condition exists or is forecast at the dam covered in this Plan, RRM will take the following actions.

- An emergency notification will be issued through Send Word Now, RRM's mass notification tool.
- Notifications will be sent on three communication channels to government agencies, COI, and external stakeholders. Communication channels that messages will be sent on are:
  - Telephone
  - Email
  - Text
- People will be asked to confirm receipt of the message and all message delivery and confirmations will be logged.

Examples of typical messaging are provided in Table 3-3 and Table 3-4 in Section 3 ERP.

5.3 SWN Frequently Asked Questions

What is Send Word Now?

- Send Word Now is RRM's emergency communications tool. It will be used to alert you to an emergency condition.
- Alerts will be sent to the contact details provided to us (email and phone numbers, including mobile phones where provided). This means you will receive alerts via:
  - Phone call
  - Email
  - Text Message
- Send Word Now allows for two-way communication. Upon receiving an alert, you may be prompted to reply.

How can I reply to Send Word Now alerts?

The alert may ask you to reply to a question and pre-defined responses will be given. To reply, enter the exact corresponding number of your response on the keypad of your phone or your keyboard. Do not reply to the voicemail as a response cannot be made from the voicemail message. To reply, refer to your email or text.

- Important: enter only the number from the options given.
- Do not type in anything other than the number given. If you enter additional text, your reply will not get registered in Send Word Now.
- Do not call or text the phone number associated with the alert.
- Emails or texts that are forwarded cannot be responded to. Only the intended recipient of the message can reply with a response.
- Call this name, number, and email for questions.
- You only need to send a reply from one device.

The instructions on how to reply will be supplied in the alert.

Who administers Send Word Now?

RRM ERT manages and administers Send Word Now.

I already got a lot of emails. How often will I get RRM alerts through Send Word Now?

You will only get an RRM alert under those conditions described in this Emergency Preparedness Plan. RRM may arrange practice drills and will notify you in advance.

How will I know that Send Word Now has my correct contact information and is working? What if I want to update my contact information?

Send Word Now is currently loaded with the contact information in our ERT. Please update your contact information by email. XXX@NewGold.com.

Is my personal contact information safe and private?

RRM evaluated Send Word Now's information security measures and polices and ensured they met our Protection of Privacy requirements. If you have concerns, please contact XXX@newgold.com.

Why is sending emergency alerts through Send Word Now important for RRM and what are the benefits?

- Currently, you may receive emergency information from RRM either by email, or telephones call or text message you IF you are registered in the system. By using Send Word Now timing to issue emergency notifications will be reduced and we will be able to communicate information to multiple parties instantaneously.
- You will receive information more quickly and reliably from us during an emergency.
- You will receive information instantaneously on your email and phone(s) (as provided). If your mobile phone number is in the system, you will be alerted via text message.
- You will be able to reply to alerts and let us know you received it.
- Alerts can be customized based on the impact, type, and location of the emergency.
- Emergency contact information will be kept in one place and be easier to manage.

PART IV - EPRP_Rev1

Final Audit Report 2024-02-19

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