



BRUNSWICK WEST TAILINGS STORAGE FACILITY DAM SAFETY EMERGENCY PLAN

Table of Contents

1. Introduction	5
a. Purpose	5
b. Scope	5
2. Background Information	5
a. Site Description	5
b. Site Access	6
c. Critical Dam Break Scenario	7
3. Responsibilities	7
4. Emergency Identification, Evaluation and Classification	9
a. Surveillance and Monitoring	9
b. Detection of Event	10
c. Decision Making	13
d. Roles and Responsibilities	14
5. Notification	17
6. Communication	18
7. Affected Areas	18
8. Mitigating and Emergency Actions	18
a. Surveillance and Monitoring	18
b. Mitigating Actions	19
c. Initial Response	19
d. Warning and Evacuation	20
9. Training and Review	21
a. General Training	21
b. Plan Evaluation and Maintenance	21

ADVERTISED PLAN

Table of Appendices

Appendix A – Information on TSF	22
Appendix B - General Arrangement Drawing	23
Appendix C – Embankment Section & Details	24
Appendix D – Spillway Section & Details	25
Appendix E – Eastern Embankment Inundation Maps – Maximum Depth	26

Appendix F - Eastern Embankment Inundation Maps – Maximum Velocity _____ 27

Appendix G - Eastern Embankment Inundation Maps – Arrival Time _____ 28

Appendix H – Southern Embankment Inundation Maps – Maximum Depth _____ 29

Appendix I - Southern Embankment Inundation Maps – Maximum Velocity _____ 30

Appendix J - Southern Embankment Inundation Maps – Arrival Time _____ 31

Appendix K - Western Embankment Inundation Maps – Maximum Depth _____ 32

Appendix L - Western Embankment Inundation Maps – Maximum Velocity _____ 33

Appendix M - Western Embankment Inundation Maps – Arrival Time _____ 34

Appendix N - Northern Embankment Inundation Maps – Maximum Depth _____ 35

Appendix O - Northern Embankment Inundation Maps – Maximum Velocity _____ 36

Appendix P - Northern Embankment Inundation Maps – Arrival Time _____ 37

Appendix Q - Additional Emergency Contact List _____ 38

 1. Support Agencies _____ 38

 2. Community Contacts _____ 38

Appendix R – Incident report form for DEECA _____ 39

Appendix S - Dam Breach / Dam Failure Decision Trees _____ 40

 1. Structural Failure Decision Tree _____ 40

 2. High Rainfall or Storm Event Decision Tree _____ 41

 3. Earthquake Event Decision Tree _____ 42

 4. Pipeline Failure Event Decision Tree _____ 43

Appendix T - Resource List _____ 44

 1. Earthmoving Equipment and Labour _____ 44

 2. Plant and Hire Equipment _____ 44

 3. Security _____ 44

Appendix U – Emergency Information for Population at Risk _____ 45

 1. Immediate evacuation messaging _____ 45

 2. Pre – Warned evacuation messaging _____ 45

**ADVERTISED
PLAN**

Document Revision	Author	Date	Comments
Rev A	SG	3/11/2022	Document Creation
Rev 1	SG	4/11/2022	Issued for WPV Submission
Rev 2	SG	17/03/2023	Issued for WPV Resubmission

Distribution List:

GMW, DEECA, VICSES, EPA, VICPOL, CFA

**ADVERTISED
PLAN**

1. Introduction

a. Purpose

- To identify dam safety event triggers which could place the integrity of the Brunswick West Tailings Storage Facility (TSF) at risk and require immediate action;
- Provide recommendations which should be taken by Mandalay Resources Costerfield Operations (MRCO) personnel to respond to these dam safety event triggers to mitigate any potential emergency incidents; and
- Provide timely warning to relevant emergency management agencies for their implementation of protection measures for downstream communities.

b. Scope

This Dam Safety Emergency Plan (DSEP) sets out the procedures MRCO are obligated to implement in the case of a dam safety emergency at the Brunswick West TSF. This DSEP is to be used and followed in the situation of a dam safety emergency and is to aid MRCO personnel to respond appropriately and effectively. This DSEP covers the following:

- identification of potential emergency events and incidents;
- defines those responsible for dam operation and implementation of the emergency response; and
- describes the procedures for notification, communication, and execution of the emergency response.

**ADVERTISED
PLAN**

2. Background Information

a. Site Description

The Brunswick West TSF is to be constructed in a turkey's nest configuration of approximately 7.0 Ha in size, refer to Appendix A for information regarding the TSF structure. The embankment is greater than 5 metres above natural surface level and thus the TSF is not at risk of inundation from surface water run-off. Appendices B, C and D contain drawings that illustrate the TSF general arrangement, typical embankment section as well as the spillway section.

The TSF does not contain cyanide and incidental contact with the material contained within does not pose an immediate risk to health. The Brunswick site is not a designated HAZCHEM site. Dangerous Goods are not stored within the TSF area but may be stored in adjacent operational areas.

The tailings have elevated levels of salt and metals including antimony and arsenic. Contact with flora, fauna, soils and receiving waters should be avoided.

b. Site Access

The Brunswick West TSF is located at 200 Bradleys Lane, Costerfield, Victoria. Figure 1 shows the 'Property Boundary' in with the Brunswick West TSF will be located.

The primary access to the TSF is via the MRCO Brunswick Mill site located at 1023 Heathcote-Nagambie Road, Costerfield, Victoria. The TSF can also be accessed from Bradleys Lane, Costerfield, Victoria which is accessed from Heathcote-Nagambie Road via Phillips Lane.

Access from Bradleys Lane is preferred in a dam failure scenario as this access is outside the inundation modelling for either an eastern or southern embankment failure, refer to Appendix E and H respectively.



Figure 1. Brunswick West TSF 'Property Boundary'

c. Critical Dam Break Scenario

This DSEP has been developed for the scenario of a potential failure of the Brunswick West TSF that would result in a flash flood downstream of the TSF due to a release of water and tailings solids. A dam break analysis was completed for the TSF to estimate the downstream flood inundation zone. In turn, this identified the residences and roads that are at risk downstream of the TSF. Inundation maps that are to be used for emergency preparedness planning are provided in Appendices E to P.

The critical dam break scenario was identified as a Sunny Day Failure breach of the eastern embankment, due to its proximity to the Brunswick Underground Mine entrance and Brunswick Processing Plant, and relatively sudden failure mechanism (seismic induced).

The estimated time for the flood wave, with a flow greater than 0.3 m in height, to impact the Brunswick Processing Plant would be approximately 16 minutes. The estimated time for the flood wave to migrate downstream to Heathcote-Nagambie Road is approximately 20 minutes. Both times commence following the development of a breach.

ADVERTISED
PLAN

3. Responsibilities

Table 1 outlines a summary of the roles and responsibilities of MRCO and main government emergency agencies:

Table 1. Company/Agency Roles and Responsibilities.

Company/Agency	Roles and Responsibilities
MRCO	<ul style="list-style-type: none"> • regular monitoring and visual inspection of conditions of the TSF. • reporting incidents and/or potential emergency situations. In the first instance, MRCO is to assess the situation as per the DSEP Event Detection Flowchart (Figure 2) and enact the DSEP Process Flow Chart (Refigure 3) for incidents with potential for escalation of consequences. • resolving emergency situations, as far as practicable, which may involve engaging specialist dam safety engineers for advice. • implementing initial stages of emergency procedures until, where relevant, other agencies (Emergency Management Victoria,

	<p>DEECA, Victorian Police or State Emergency Service) provide an “All Agencies” response capability.</p> <ul style="list-style-type: none"> • providing subsequent notification and preventative action recommendations, accompanied by appropriate emergency public information to the Victorian Police and/or State Emergency Service to assist them in making timely and accurate decisions regarding their warning and evacuations responsibilities. • co-ordination of internal resources to make the TSF safe and minimise impacts to the community. • training, maintenance and review of the DESP. • conduct inspections of the TSF and to identify any deficiency in the TSF’s safety. • take adequate steps to reduce the potential risk of TSF failure based on upon the results of inspections. • making TSF safety related decisions based on advice from the Dams Engineer (where appropriate). • authorising immediate expenditure so that urgent repair work will not be delayed.
Dams Engineer	<ul style="list-style-type: none"> • provide assistance, recommendations and expertise with technical issues related to the TSF, the nature of the particular emergency, and remedial measures.
Department of Energy, Environment and Climate Action (DEECA)	<ul style="list-style-type: none"> • control agency for dam safety in Victoria, as defined in the Emergency Management Manual Victoria. • management of the external agency response activities in order to minimise the impact on the community and environment from a dam safety event. • determine the strategic control priority in response to a dam safety event. • provide strategic advice for the management of the emergency response.
Victoria Police (Vicpol)	<ul style="list-style-type: none"> • effective coordination of resources or services in response to emergencies.

ADVERTISED PLAN

	<ul style="list-style-type: none"> primary agency for communications, evacuation, and public warnings.
Victoria State Emergency Service (VicSES)	<ul style="list-style-type: none"> control agency for flood, earthquake and storm damage and accredited provider of road accident and industrial accident rescue.

4. Emergency Identification, Evaluation and Classification

a. Surveillance and Monitoring

**ADVERTISED
PLAN**

Regular surveillance and monitoring of the Brunswick West TSF is to be undertaken, as this will be the primary method for the early identification of potential embankment failure. The critical items associated with identification of dam failure and the frequency of these tasks are outlined in Table 2.

Table 2. Surveillance Requirements.

Frequency	Tasks
Daily	<ul style="list-style-type: none"> Visual inspection of the decant pond, noting the approximate size, depth and location. Visual inspection of the decant structure, noting any deficiencies in the pipelines, filter geotextile or pump.
Weekly	<ul style="list-style-type: none"> Visual inspection of the embankments crest and batters, noting for any signs of erosion, cracking, wheel rutting, pooling of water, seepage or excessive vegetation growth. Visual inspection of the exposed BGM in the TSF and the RWP noting for tears or holes, or signs of distress. Visual inspection of the clean water diversion drains, noting for signs of excessive erosion, slumping/failures, excessive vegetation growth, or any other blockages which may impede the performance of the drain. Visual inspection of the emergency spillways, noting for any blockages or signs of distress. Visual inspection of the access roads and tracks, noting for signs of erosion, cracking, wheel rutting, or pooling of water.

Monthly	<ul style="list-style-type: none"> Measurement of Groundwater Monitoring bores for seepage and development of phreatic surface through foundations
Quarterly	<ul style="list-style-type: none"> Review of aerial survey for signs of embankment movement

Where routine visual inspection reveals a change or fault that threatens the safety of the structure, the observer is to report the change to the MRCO Plant Supervisor.

b. Detection of Event

IMPORTANT

- ✓ **Be alert to potential developments and maintain close vigilance during extreme events or perceived abnormal behaviour of the TSF.**
- ✓ **Maintain safety requirements at all times during response actions.**
 - ✓ **Take actions as outlined in this DSEP.**

Emergency events affecting the TSF will be detected primarily through visual observations. Observation of any of the following dam safety event triggers may indicate an increased risk of a dam safety event occurring. The triggers and corresponding alert levels are outlined in Table 3.

Table 3. Alert Levels.

Alert Level	Trigger
Green	<ul style="list-style-type: none"> No emergency situation is identified, and facility is in Normal Operating Conditions
White	<ul style="list-style-type: none"> Major mechanical or electrical equipment failure or damage; or A heavy rainfall event is underway with the dam water level within 1.5m of the spillway invert level and the level is continuing to rise; or An earthquake is felt; or Significant incident detected that does not pose immediate danger (including minor slips, cracking, seepage and/or leaking on the embankment downstream face, signs of turbidity (cloudy seepage), significant pest damage through synthetic liner, pipeline failure or leak; and <p style="text-align: center; color: red; font-weight: bold; font-size: 1.2em;">ADVERTISED PLAN</p>

	<ul style="list-style-type: none"> The emergency situation is substantially under control and likely to reduce.
Amber	<ul style="list-style-type: none"> A heavy rainfall event is underway with the decant pond level within 0.25m of the spillway invert level and the level is continuing to rise; or Dam failure is possible if structural problems are not fixed (including heave at the embankment toe, deep erosion or scouring through embankment crest and/or downstream slope, structural defects in the spillway, settlement, lateral or transverse cracking, large sinkholes, slumping or lateral movement on the embankment crest; or Dam failure is possible if mechanical problems are not fixed; and The emergency situation is uncertain.
Red	<ul style="list-style-type: none"> Water has started overtopping the embankment crest; or The dam has failed and is releasing water/tailings uncontrollably; or The dam is damaged and the risk of flooding downstream is high; or The emergency situation is substantially not under control and is unlikely to reduce.

The occurrence of any of the above dam safety event triggers will require the Event Detection Flowchart to be followed, refer to Figure 2:

**ADVERTISED
PLAN**

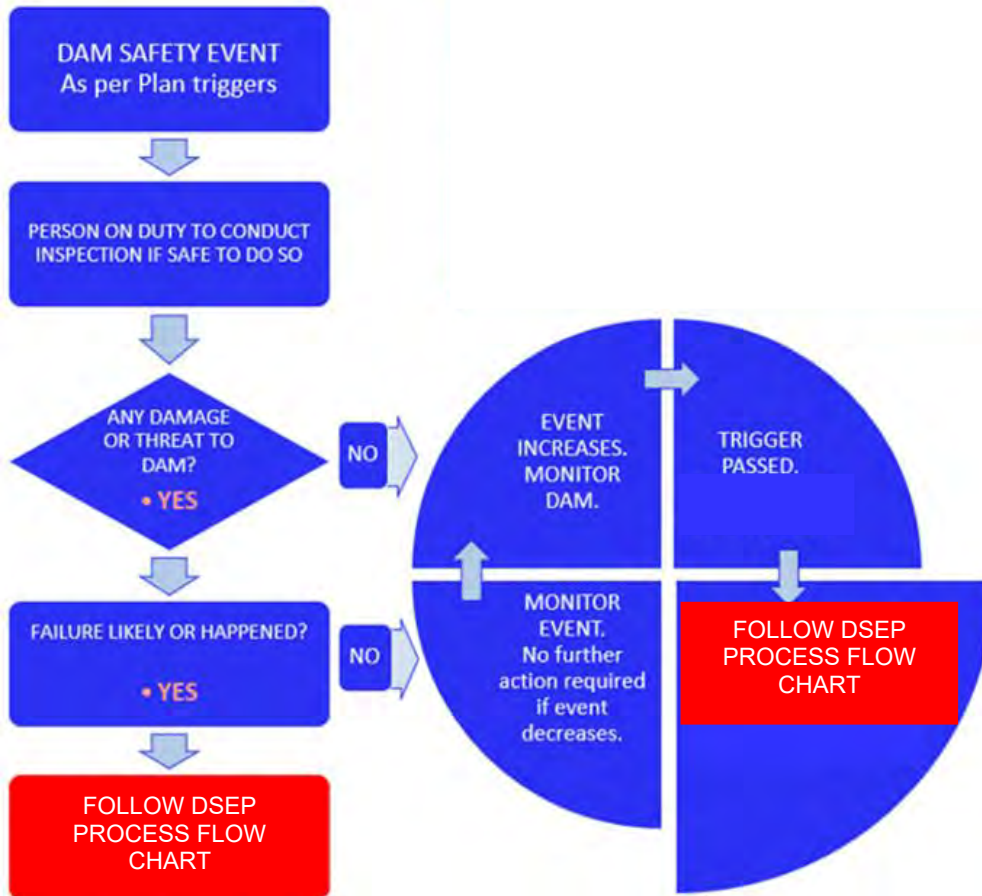


Figure 2. DSEP Event Detection Flowchart

**ADVERTISED
PLAN**

c. Decision Making

Dam safety event actions and emergency activation shall involve the necessary parties relevant to the level of risk and corresponding alert levels, as outlined in Figure 3.

The Emergency Management Plan (SD-ERT-1402-PLN) will be used as needed and external emergency response will be called upon should the dam safety event trigger warrant such a response.

MRCO is to ensure decision making in undertaken in accordance with the following priorities:

- | |
|---|
| <p style="text-align: center;"><u>Priority-of-Action:</u></p> <ol style="list-style-type: none">1. → Saving-Life2. → Saving-Property3. → Dam-Structure-Damage-Control |
|---|

The five step DESP process shall be in accordance with the flow chart should below in Figure 3:

**ADVERTISED
PLAN**

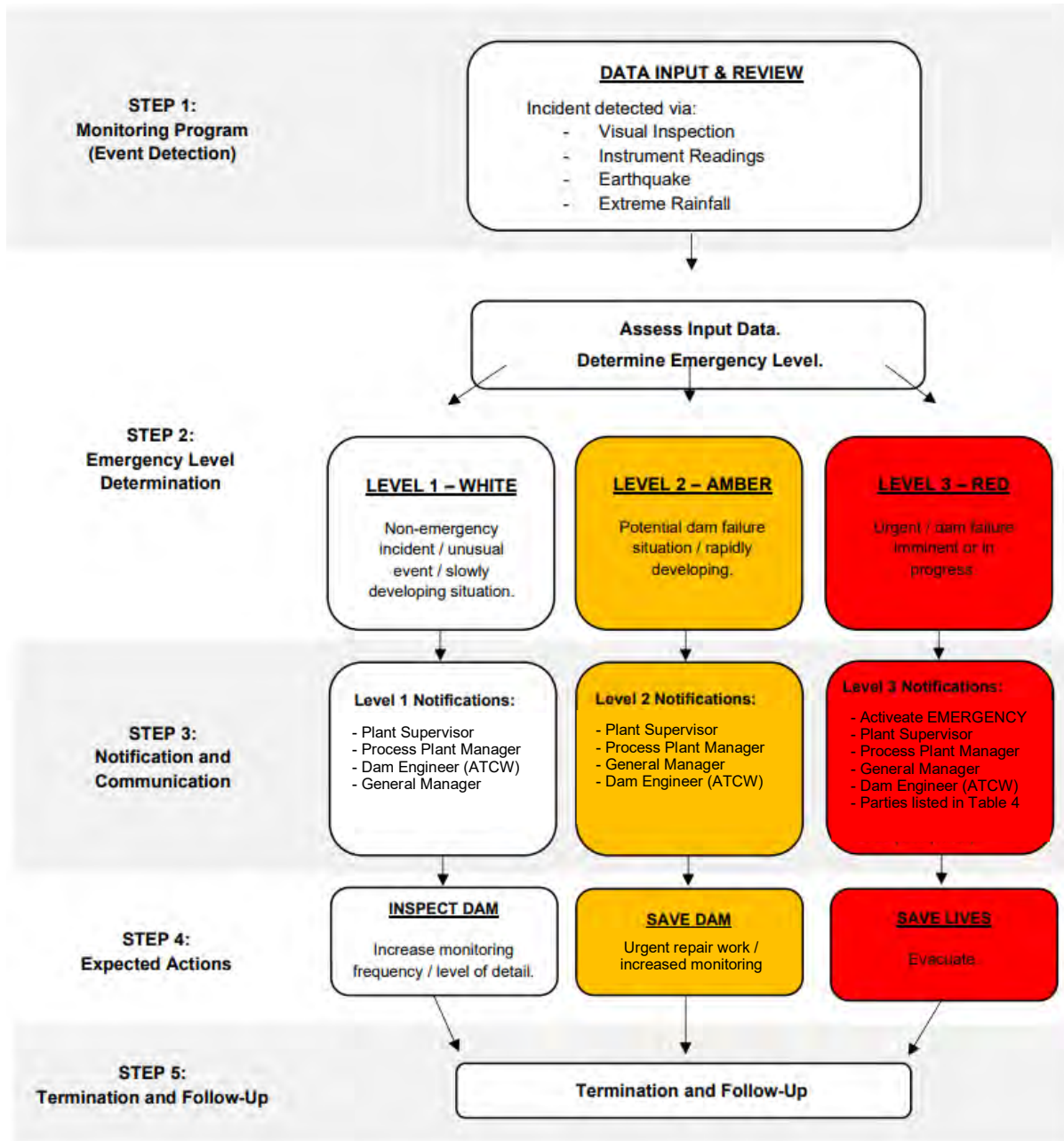


Figure 3 – DSEP Process Flow Chart

Activation of an emergency is to occur as per one of the following methods:

- Internal, dial '444';
- External, dial '03 5431 0444'
- Radio, CH1 for Augusta;
- Radio, CH3 for Brunswick.

ADVERTISED
PLAN

d. Roles and Responsibilities

The DSEP roles and responsibilities are outlined below in Table 3. In the event of the Level 3 – Red emergency level being enacted, MRCO will appoint an Emergency Management Plan Incident Controller (IC) and Emergency Management Plan Communications Officer to manage the emergency situation.

Table 3. Incident Management Roles and Responsibilities.

Key Personnel	Responsibility
Plant Supervisor	<p>Respond to information from Process Plant Operators or others on site who have observed or reported conditions, incidents or unusual events to detect if an existing or potential emergency exists.</p> <p>Communication of information to be prioritised as per the DSEP flowchart (Figure 3).</p> <p>As soon as possible, determine the emergency level:</p> <ul style="list-style-type: none"> • Level 1 (WHITE): Non-emergency incident, unusual event, slowly developing. • Level 2 (AMBER): Potential dam failure situation. Rapidly developing. • Level 3 (RED): Urgent, dam failure is imminent or in progress. <p>Activate an emergency if Level 3 (RED) exists.</p> <p>Notify the Process Plant Manager if an emergency level has been triggered.</p>
Process Plant Manager	<p>Management of the Tailings Storage Facilities and for ensuring all control measures and monitoring requirements are undertaken within the required timeframe.</p> <p>Immediately notify the personnel in the order shown on the DSEP flow chart for WHITE and AMBER emergency levels.</p> <p>When a Level 2 (AMBER) situation occurs:</p> <ul style="list-style-type: none"> - Alert emergency management personnel (including the MRCO Emergency Response Team) for possible evacuations that may be needed if a Level 3 situation occurs.

	<ul style="list-style-type: none"> - Alert all persons in the potential areas of impact, as appropriate. <p>Determine remedial actions (including clean-up) after the initial emergency response.</p> <p>Assure the DSEP is reviewed and updated annually and copies of the revised DSEP are distributed to all who received copies of the original DSEP.</p>
General Manager	Maintain communication with media and the general public, as appropriate, and in accordance with the MRCO policies and procedures.
Process Plant Operator(s)	<p>Carry out inspections and monitoring of the TSF in accordance with Section 4 above.</p> <p>Activate an emergency if Level 3 (RED) exists.</p>
Dam Engineer	Provide expert advice and/or recommendations on the severity of the incident and possible courses of action.
Emergency Management Plan Incident Controller (IC)	<p>When a Level 3 (RED) situation occurs:</p> <ul style="list-style-type: none"> - Initiate warnings and order evacuation of people at risk downstream of the TSF. - Carry out the evacuation of people and close all mine access roads within the evacuation area. - Alert the neighbouring landholders and external emergency services of the emergency. - Assess what else is at risk downstream and notify accordingly. <p>Co-ordination of incident response activities in accordance with the Emergency Management Plan (SD-ERT-1402-PLN) and in cooperation with external agencies.</p> <p>Decide an appropriate time to terminate the emergency.</p>
Emergency Management Plan Communications Officer	<p>Contacting people and agencies on the Emergency Contact List, under the guidance of the Incident Controller.</p> <p style="text-align: center;">ADVERTISED PLAN</p>

5. Notification

A dam safety event where there is risk to community members, critical infrastructure, residential properties, the environment and/or other community assets, will require involvement from state emergency agencies.

Initial notification of a dam safety event shall be made by MRCO personnel as per Figure 3. The Emergency Management Plan Communications Officer, under the guidance of the IC, is to notify the contacts listed in Table 4 as per the priority shown. In the event that positive communication cannot be achieved by the primary communication listed, the secondary communication method is to be enacted with physical attendance to the properties listed to advise of the situation and/or to confirm that no personnel are in residence.

ADVERTISED
PLAN

Table 4. Emergency Response Contact List.

Priority	Contact	Primary Communication - Phone	Secondary Communication - As stated
1	Costerfield Mine Emergency Response Team	5431 0444	
2	Neighbour: Mark Little Amie Little	0401 882 894 0408 803 881	In person - 966 Heathcote-Nagambie Rd, Costerfield
3	Neighbour: Sharon & Wayne Ettwell	0408 170 888 03 5433 2657	In person - 964 Heathcote-Nagambie Rd, Costerfield
4	Fire Brigade / Police / Ambulance/ Oscar 1	000	
5	State Control Centre	1300 13 4444	
6	Tailings Dam Engineer – (Craig Noske – ATC Williams)	0409 412 871	Phone – 03 8587 0900
7	Earth Resources Regulation Duty Officer (24 Hours)	0419 597 010	
8	City of Greater Bendigo	1300 002 642	
9	State Emergency Service	13 25 00	
10	VicRoads	13 11 70	
11	Electricity - Powercor (24 Hours)	13 24 12	

MRCO shall be responsible for maintaining continuous contact with the above parties and provide timely advice on any change of conditions.

For completeness, Appendix Q contains additional information for other support agencies and sensitive receptors who may also need to be contacted.

6. Communication

The IC shall develop a plan to respond to the dam safety event. When a Level 3 (RED) emergency level is enacted, the IC shall collate and communicate the following information to DEECA as soon as possible:

- TSF current water level;
- Type of dam, dimensions of dam and spillway, drawings of dam and spillway;
- Type of defect (ie. cracking, seepage, erosion);
- Location of defect (orientation with respect to the crest and abutments of the TSF);
- Extent of defect (ie. length and depth of cracks, quantity of seepage and whether the seepage is 'cloudy'), a photographic record should be taken where possible; and
- Spillway operation - whether there is flow in the spillway and whether there are any obstructions to the flow.

For completeness, the incident report form contained within Appendix R is to be completed and provided to DEECA.

ADVERTISED PLAN

7. Affected Areas

The inundation map shown in Appendix E reflects the modelled affected areas based on the worst-case outcome of a critical dam failure scenario. The model assumed approximately 290,000 m³ of tailings and 14,000 m³ of water would be released. The dam break outflow was conservatively modelled assuming a Newtonian (i.e. water) flow regime, with complete mobilisation of all above natural ground-stored tailings. The model did not account for the potentially reduced tailings mobilisation due to residual shear strengths or the attenuated outflow regime due the rheological properties of the mobilised tailing was included.

8. Mitigating and Emergency Actions

a. Surveillance and Monitoring

In the event of the DSEP Process Flow Chart being enacted, the IC shall nominate an experienced person (Process Plant Operator) to be present at the TSF in a safe location to monitor weather conditions and the structural integrity of the TSF. This representative shall undertake the relevant surveillance and monitoring actions listed in Section 4 above,

increasing the frequency to 6 hourly, if safe to do so. This representative shall collect photographs and detailed observations of the issue to document and understand the severity of the event.

If the condition of the embankment appears to worsen, inspections frequency shall be increased, only if safe to do so. The Dams Engineer will provide advice based on these observations, so clear and succinct information is vital.

An alternative exit route (or multiple alternatives) shall be determined before attending the TSF in emergency conditions, and regular contact by radio or phone shall be maintained with the Emergency Management Plan Communications Officer.

b. Mitigating Actions

If there is potential for dam failure, then the IC is to revert to the Dam Breach / Dam Failure decision trees contained in Appendix S.

If it is clearly identified that a dam failure is a credible risk, the following actions should be undertaken as a priority;

- Immediately cease tailings deposition.
- Dewatering the TSF as much as practicable to the external RWP, mobilising emergency standby pumps if deemed necessary by the IC.
- Engage an earthmoving contractor for equipment and labour to be on standby if the issue is determined to be structural.

Appendix T contains contact information for external resources that can aid with the undertaking mitigating actions.

The IC should also consider:

- the need for evacuation and timings required to notify the Victoria Police; and
- contact with DEECA regarding developing evacuation messages / holding statements / information to the community via Victoria Police.

c. Initial Response

The following planning options are intended to provide some level of guidance to the IC within the first hour.

Note that some of these items require expert technical and engineering knowledge before implementation and it is important that specialist dam safety advice is sought. These items can be

**ADVERTISED
PLAN**

considered while the Tailings Dam Engineer(s) is enroute to the TSF site. Following the Tailings Dam Engineer(s) assessment, their expert advice will guide the actions to be implemented.

As part of the initial response, the IC is to consider organising:

- portable pumps and generators;
- lighting;
- additional earthmoving equipment for repair works or mitigation measures, such as:
 - localised placement of earthworks/sandbags to contain flow over crest;
 - placement of erosion resistant material at location where flow over crest may occur; and/or
 - stabilise downstream slope/toe through placement of earthworks.
- organising earthfill/rockfill/bentonite/plastic sheeting to plug any piping failure;
- signage and community warnings;
- pegging width of overtopping and taking photographic evidence every 15 minutes;
- pegging piping failure and taking photographic evidence every 15 minutes; and
- pegging extent of flooding downstream and taking photographic evidence every 15 minutes.

**ADVERTISED
PLAN**

d. Warning and Evacuation

The IC must consider and if necessary, recommend evacuation of people from potential at risk areas from a dam safety event.

All evacuations can be considered under two generic categories;

- Immediate Evacuation : Where people maybe at immediate risk from a dam safety incident and it will be recommended they evacuate immediately. The nature of the dam safety emergency may provide limited or no opportunity for warnings or preparation time.
- Pre-warned Evacuation: An evacuation resulting from an event that provides adequate warning and does not unduly limit preparation time.

The primary areas of evacuation, in order of priority, are as follows:

1. Brunswick Processing Plant and Mine Offices area.
2. Brunswick Underground Portal.
3. Heathcote-Nagambie Road.
4. 964 & 966 Heathcote-Nagambie Road.

DEECA are to review this recommendation with VicSES and the Dams Engineer and is to provide an informed decision on evacuation to Vicpol.

Examples of community alert messages which could be used to warn the population at risk are provided at Appendix U.

9. Training and Review

a. General Training

MRCO staff are to be made aware of the existence of this DSEP. MRCO Brunswick and Emergency Response personnel are to be trained in the contents of this DSEP to ensure that those personnel are thoroughly familiar with all components, their responsibilities, duties and the availability of resources.

b. Plan Evaluation and Maintenance

The DSEP is to be reviewed at least annually and updated following incidents or major changes to TSF or operational practices.

Emergency evacuation drills are also to be conducted by MRCO staff on a bi-annual basis to ensure all personnel are aware of their roles, responsibilities and duties in relation to this DSEP.

MRCO, with the assistance of appropriate regulatory or government agencies (including Emergency Management Victoria, DECA, Victoria Police and Earth Resource Regulation), will host and facilitate a periodic test of the DSEP with the first test occurring prior to TSF commissioning and then once every three (3) years. MRCO will incorporate any learnings from these tests into the DSEP.

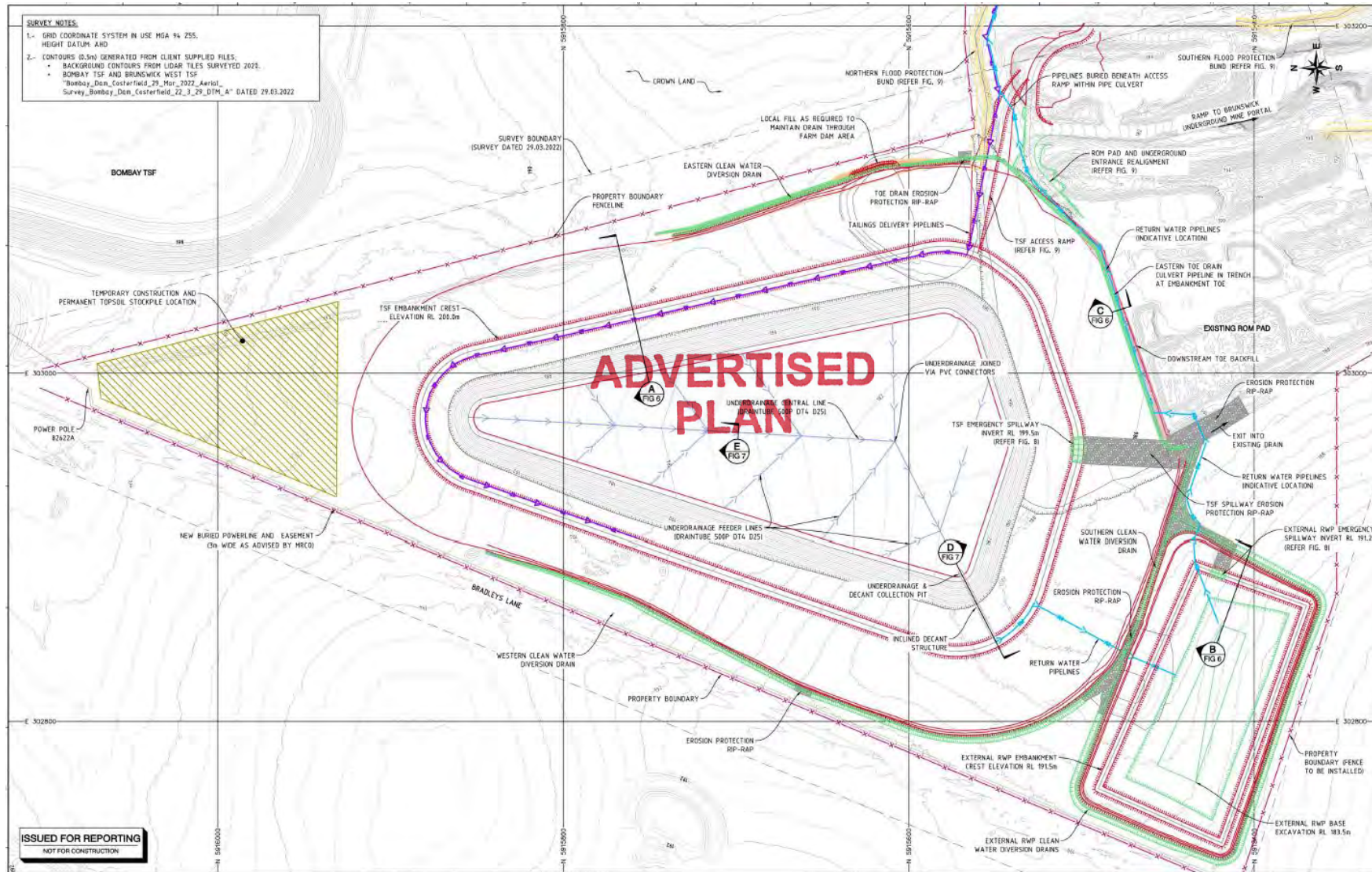
**ADVERTISED
PLAN**

Appendix A – Information on TSF

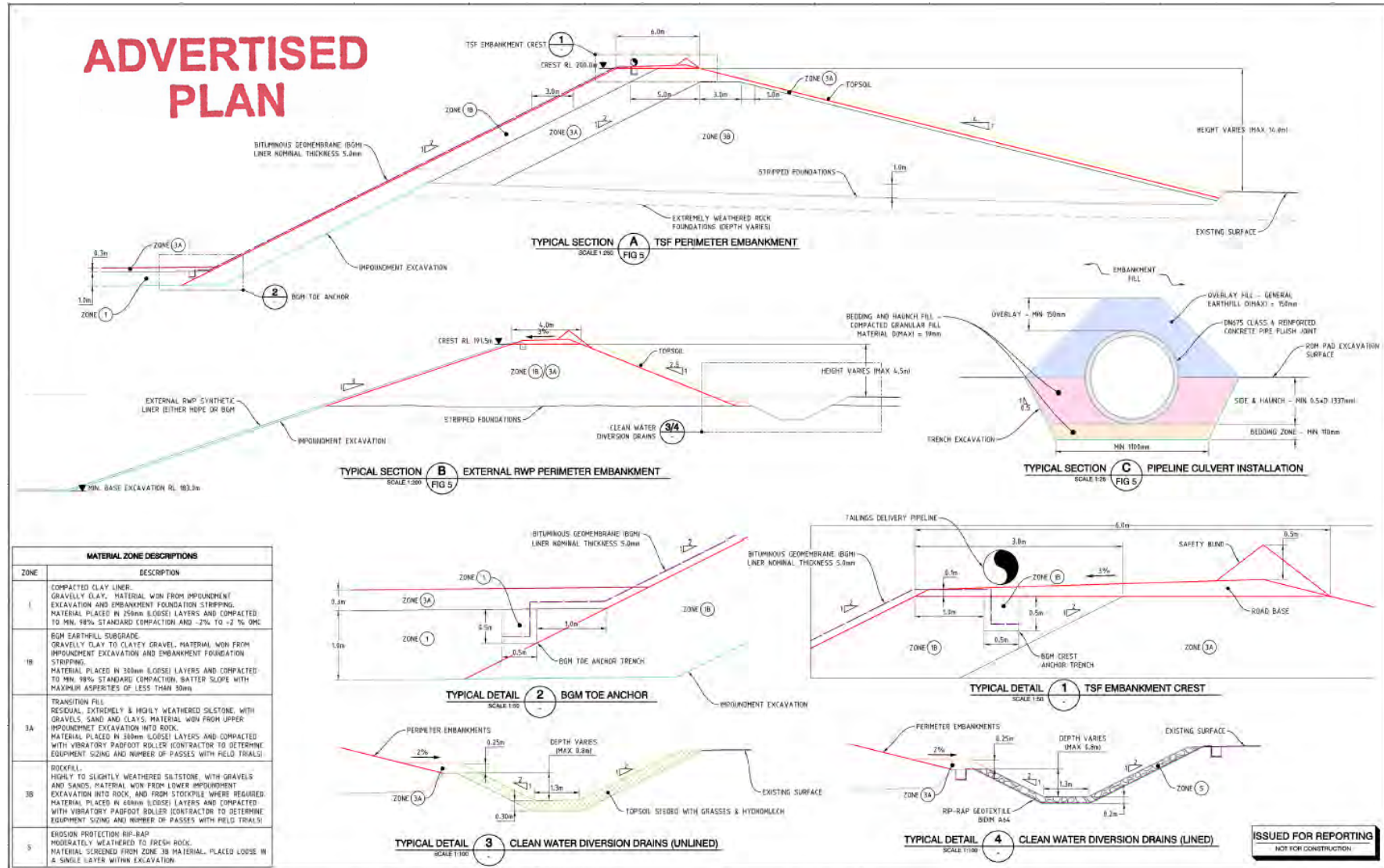
Section	Item	Description
General Information	Name of Dam	Brunswick West TSF
	Location (include road name)	200 Bradleys Lane, Costerfield VIC 3523
	Map Reference	VicRoads Ref 45 E8
	Period of Original Construction	Not yet constructed
	Water course	N/A
	Hazard Category (ANCOLD)	High B
	Population at Risk	25 people
Reservoir	Tailings Storage Capacity	584,000 m3
	Catchment Area	6.1 Ha (no waterway flows into TSF)
	Maximum Operation Pond	14,000 m3
	Extreme Storm Storage Allowance	11,000m3
	Contingency Freeboard	0.3 m
	Contingency Volume	19,000m3
	Full Supply Level (Spillway Crest Level)	199.5 mAHD
	Full Supply Volume (Spillway Crest Level)	628,000 m3
Dam/Embankment	Type of Dam (material)	Earthfill with Synthetic Liner
	Embankment Height (max)	14.5m downstream slope, 20m upstream slope
	Embankment Length	980 m
	Embankment Crest Elevation	200 mAHD
	Upstream Slope of Embankment	2 Horizontal: 1 Vertical
	Downstream Slope of Embankment	4 Horizontal: 1 Vertical
	Embankment Crest Width	6m
Spillway/Outlet Works	Description of Spillway (material etc)	Concret cut-off with rock armoured outlet
	Location of Spillway	South section of embankment
	Full Supply Level (Spillway Crest Level)	199.5 mAHD
	Width of Spillway Crest	6m
	Existing Spillway Capacity	2.19 m3/s (Peak Outflow) & 0.29m Peak Flood Height
	Dam Crest Flood	Probable Maximum Flood (PMF)
	Description of Outlet Works	Pump from decant structure to RWP
	Location	South-west embankment
	Capacity	0.015 m3/s
	Details of Operation	Operated by float controls

ADVERTISED PLAN

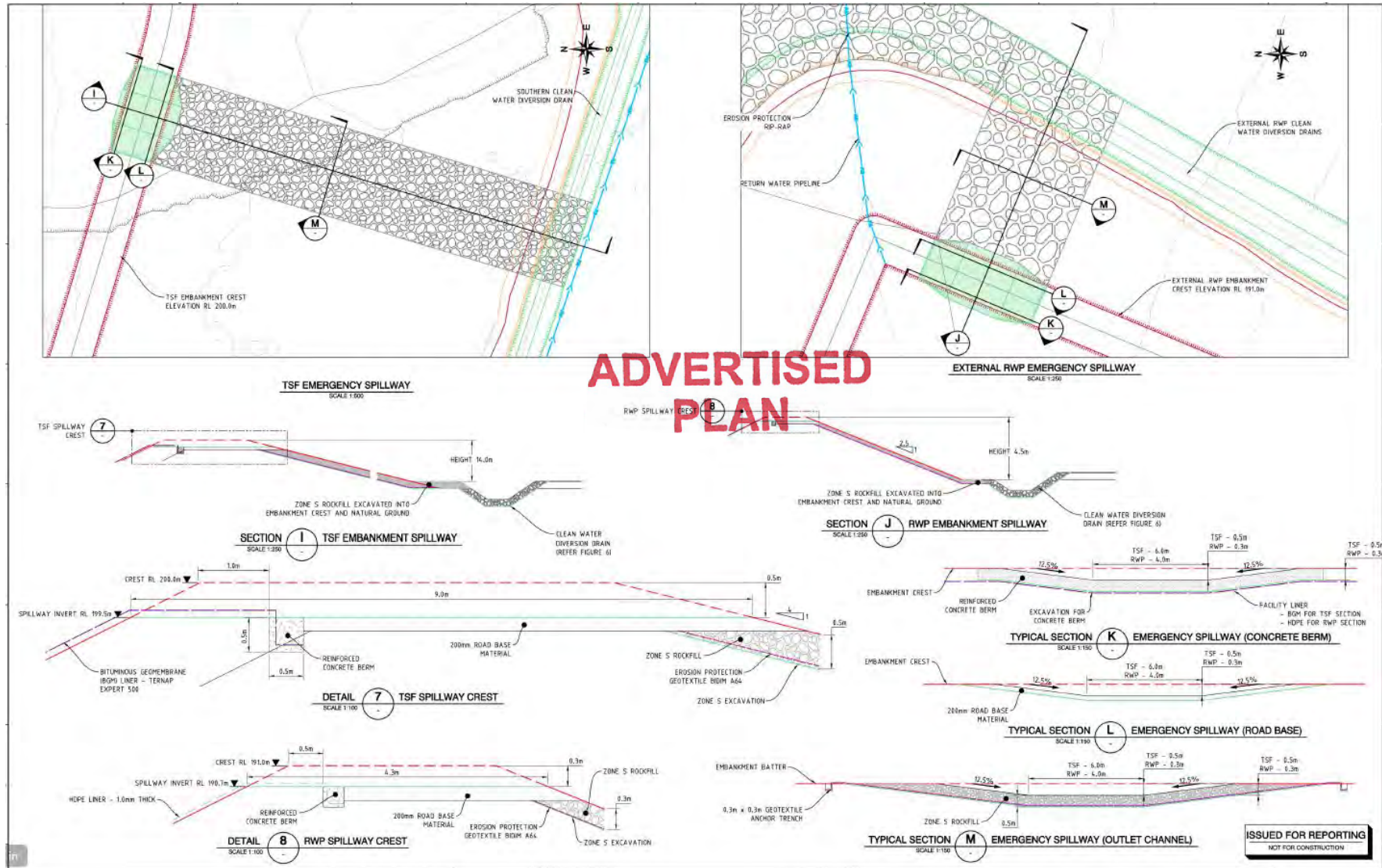
Appendix B - General Arrangement Drawing



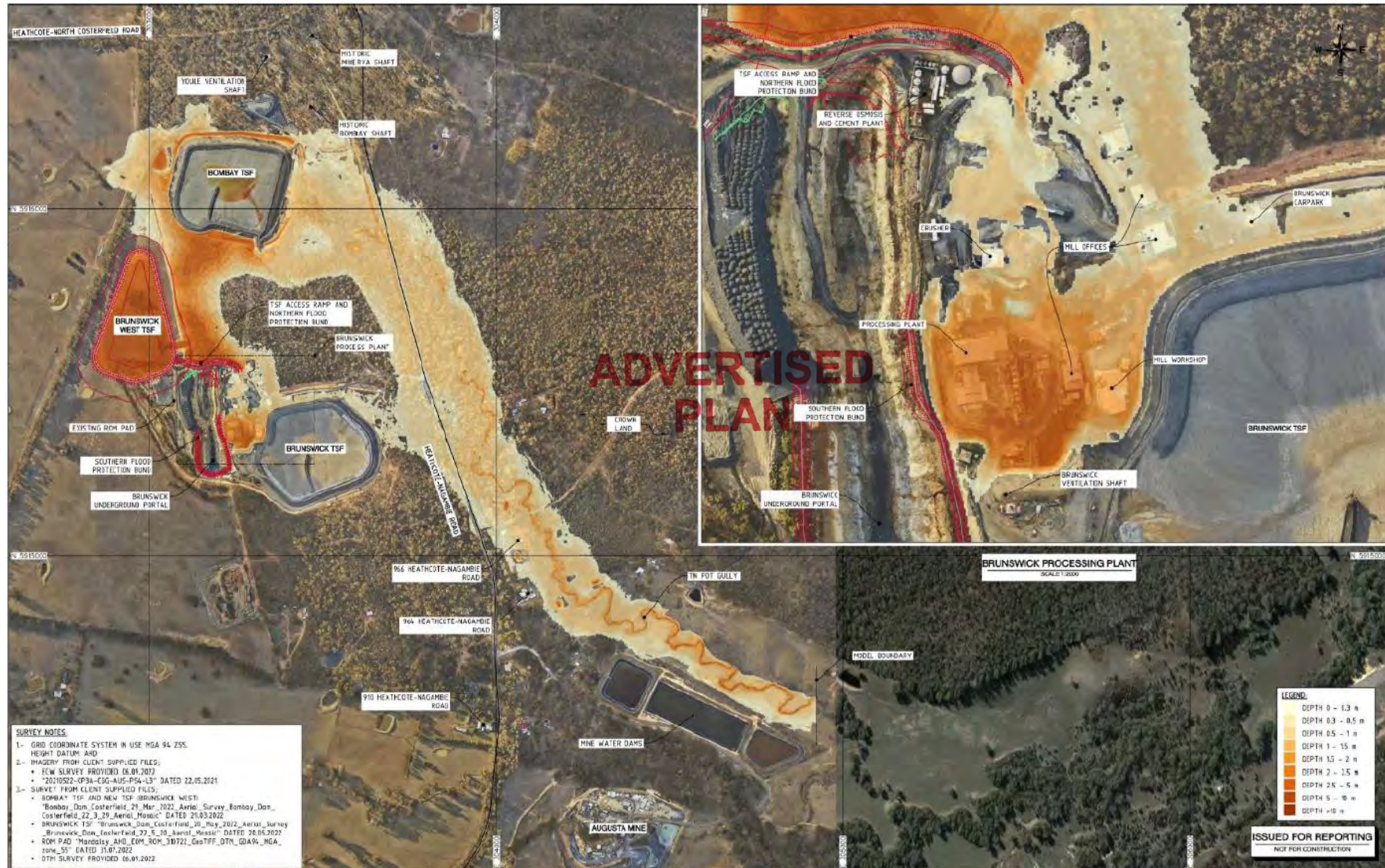
Appendix C – Embankment Section & Details



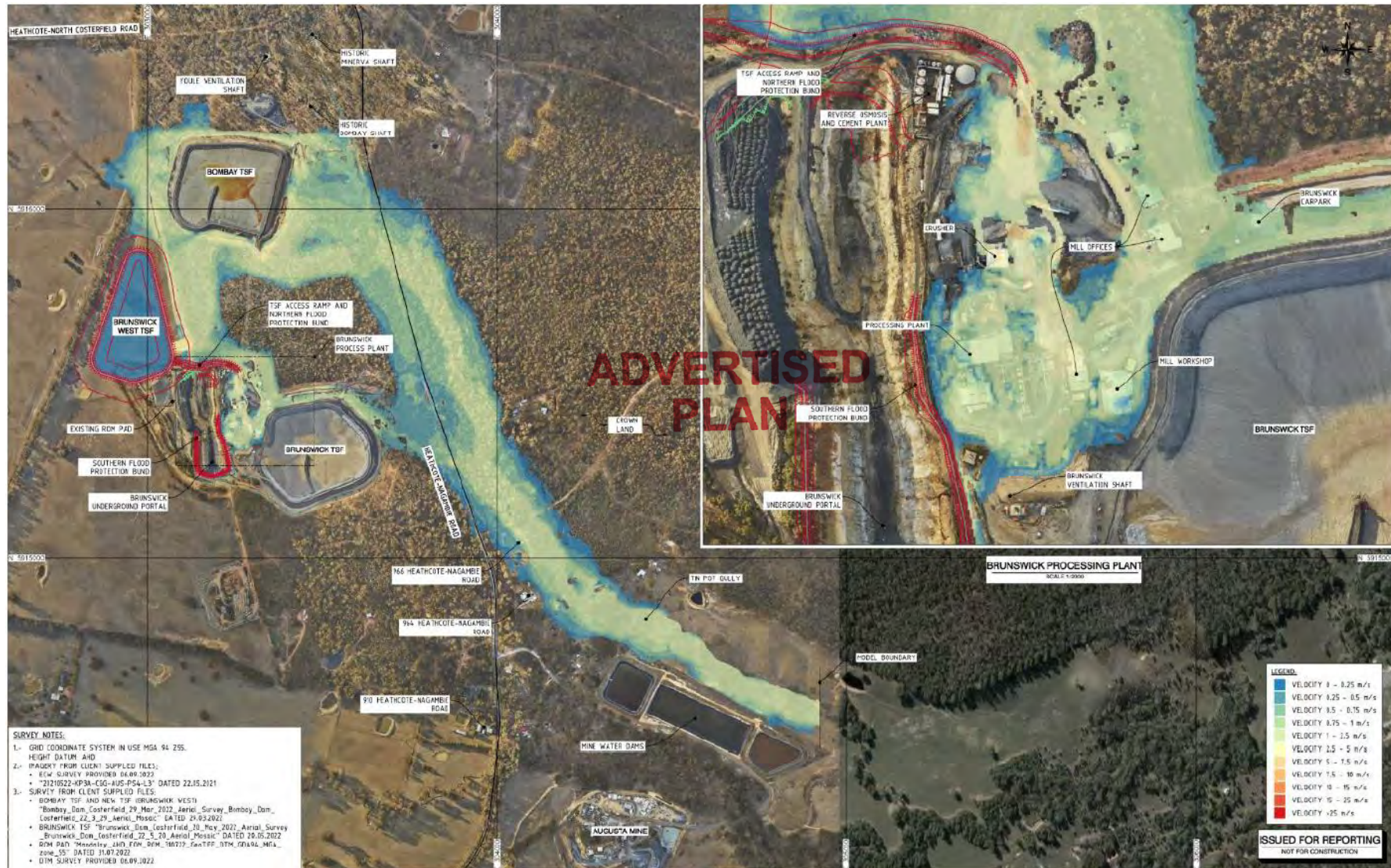
Appendix D – Spillway Section & Details



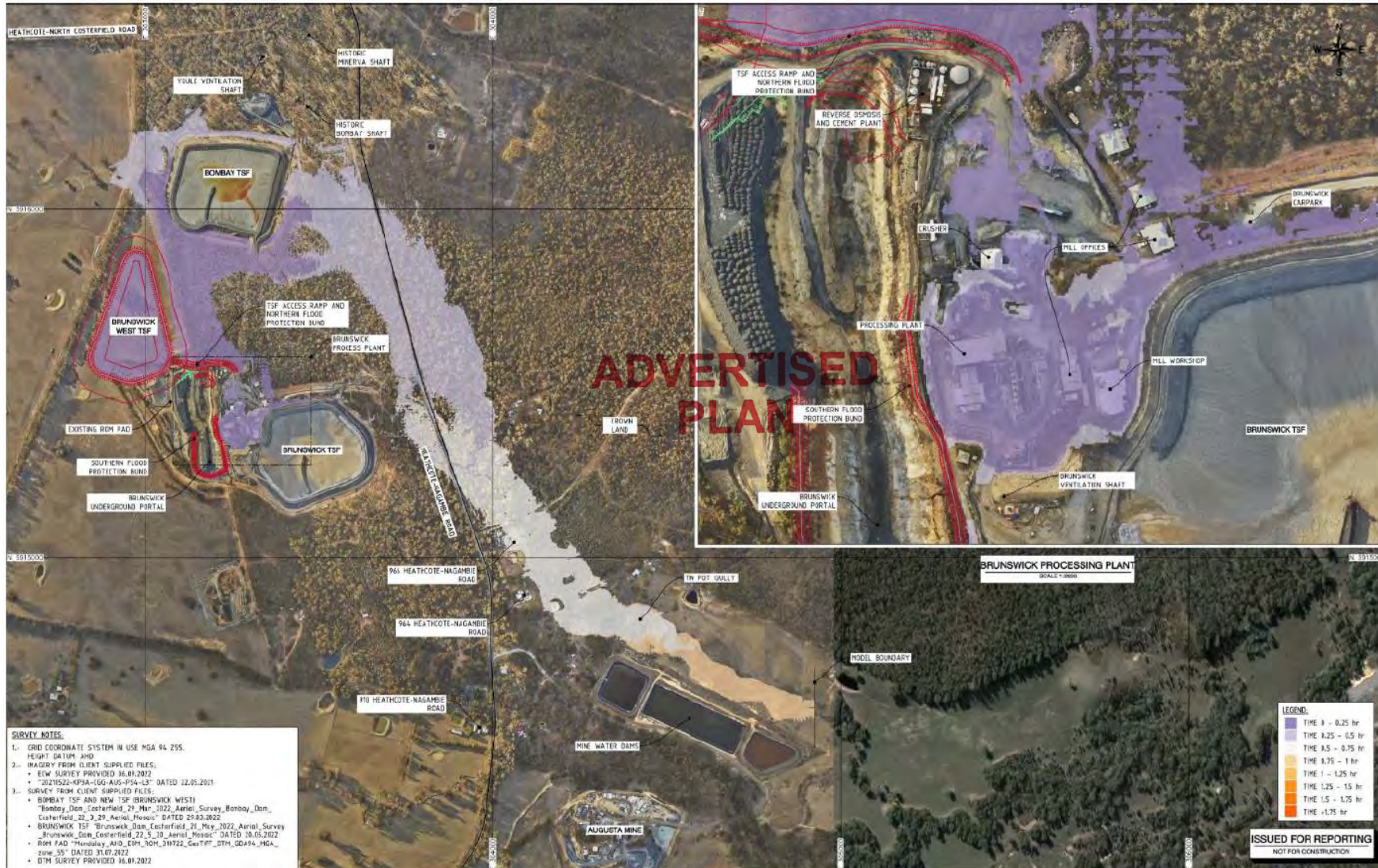
Appendix E – Eastern Embankment Inundation Maps – Maximum Depth



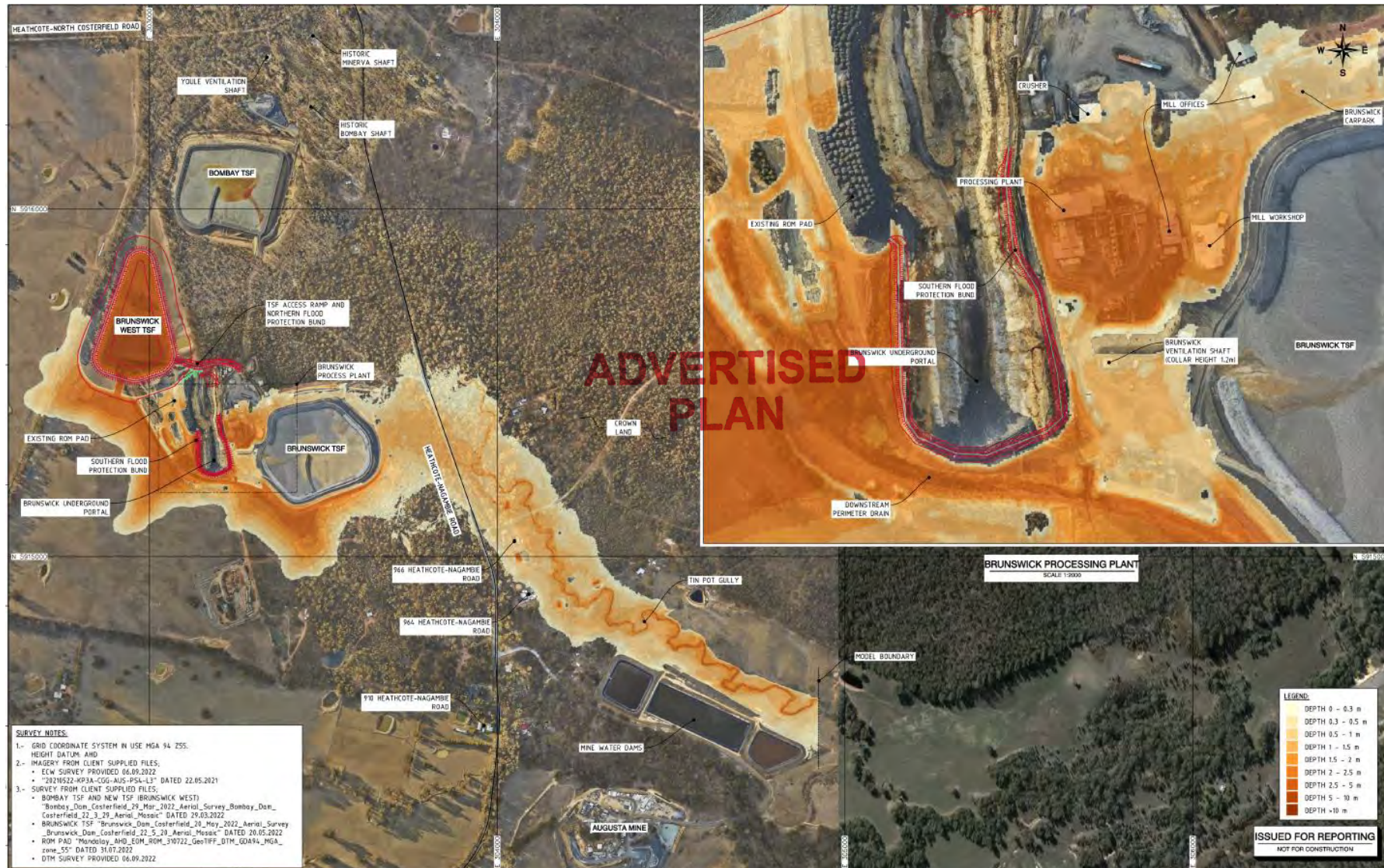
Appendix F - Eastern Embankment Inundation Maps – Maximum Velocity



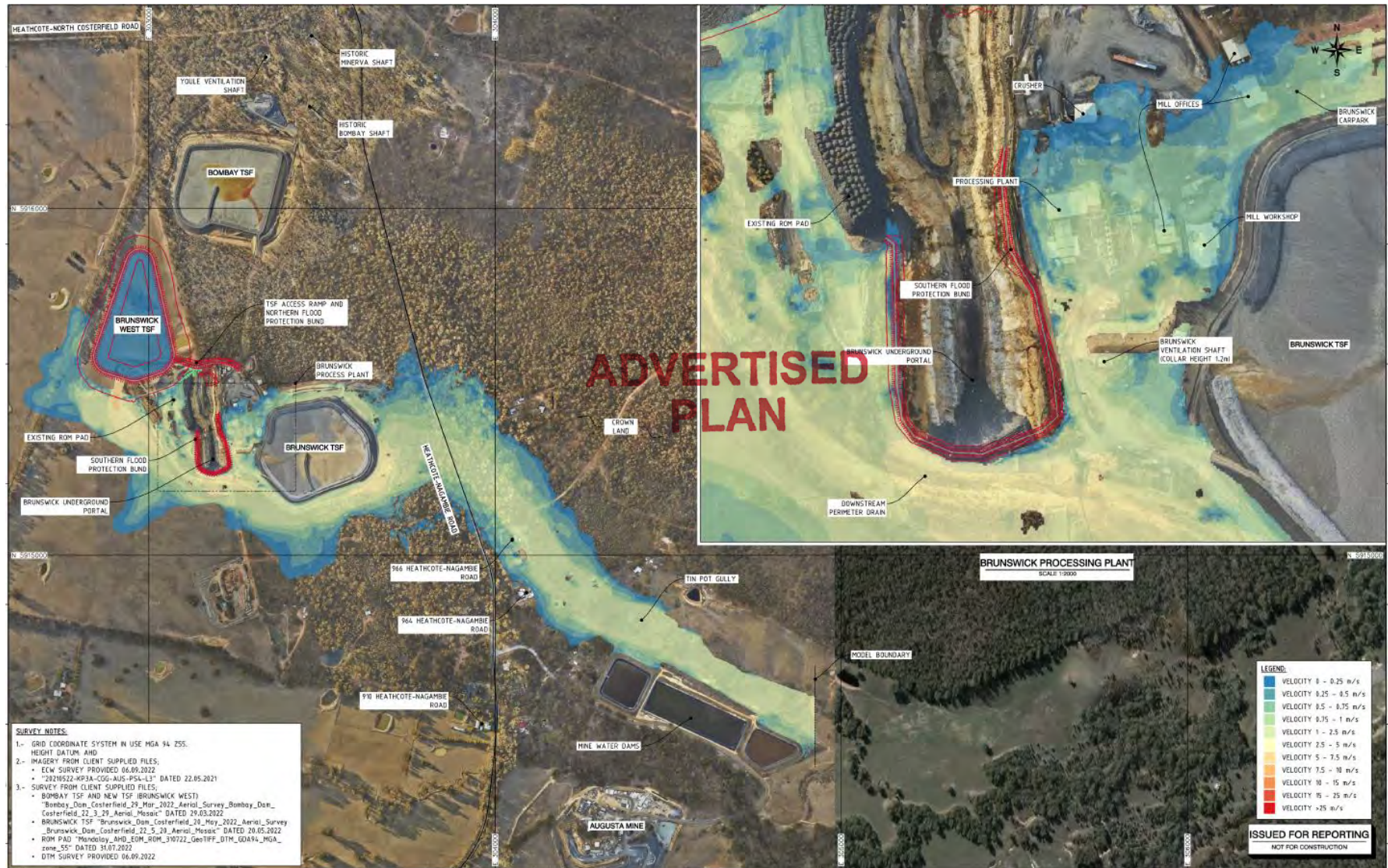
Appendix G - Eastern Embankment Inundation Maps – Arrival Time



Appendix H – Southern Embankment Inundation Maps – Maximum Depth



Appendix I - Southern Embankment Inundation Maps – Maximum Velocity



Appendix J - Southern Embankment Inundation Maps – Arrival Time



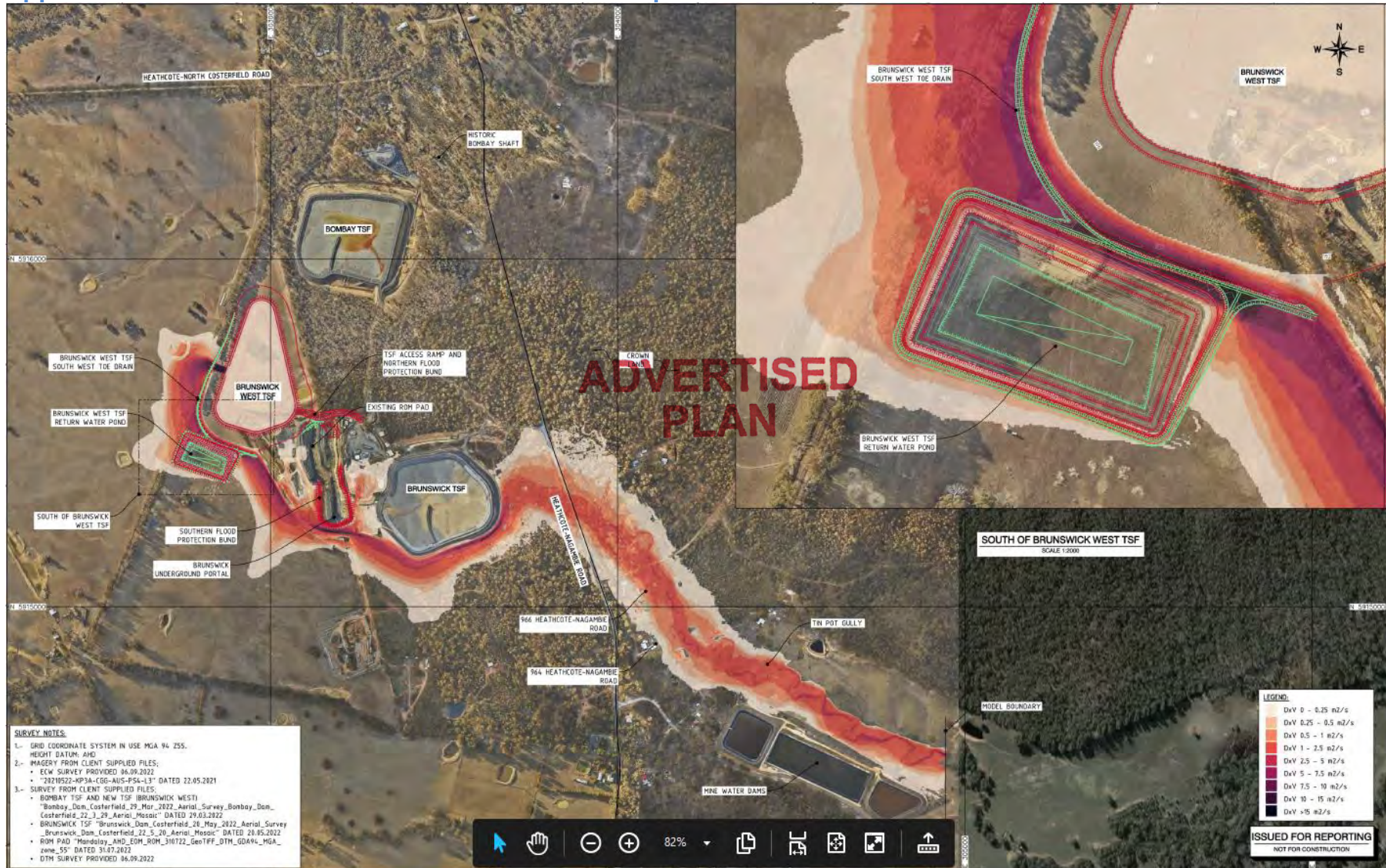
Appendix K - Western Embankment Inundation Maps – Maximum Depth



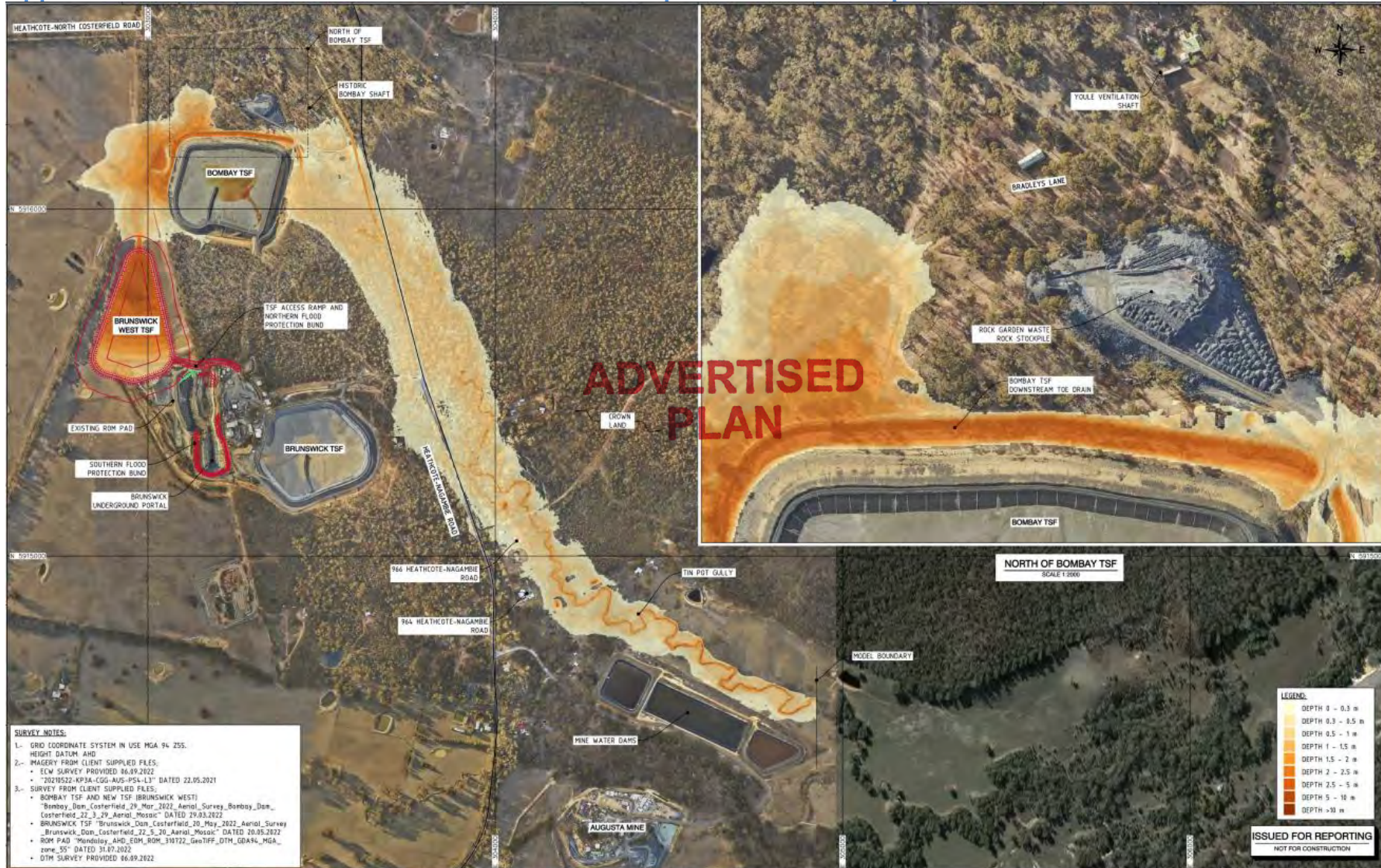
Appendix L - Western Embankment Inundation Maps – Maximum Velocity



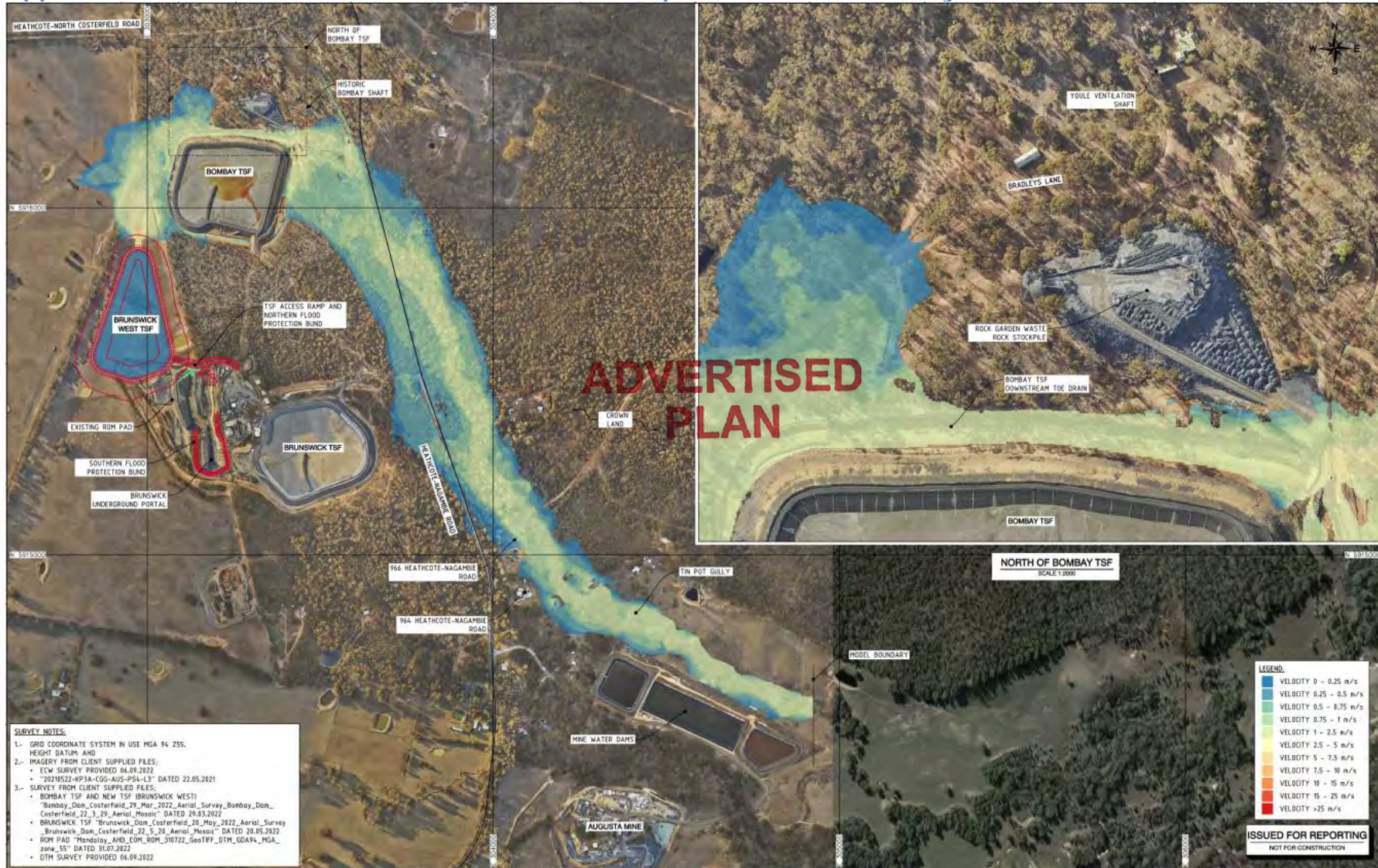
Appendix M - Western Embankment Inundation Maps – Arrival Time



Appendix N - Northern Embankment Inundation Maps – Maximum Depth



Appendix O - Northern Embankment Inundation Maps – Maximum Velocity



Appendix P - Northern Embankment Inundation Maps – Arrival Time



Appendix Q - Additional Emergency Contact List

1. Support Agencies

WorkSafe (24 Hours)	13 23 60
Environmental Protection Authority (1300 EPA VIC)	1300 372 842
Goulburn-Murray Water (24hr Emergencies)	1800 064 184
Oscar 1 Manager (Dan McMahon)	0417 082 700
Fosterville Gold Mine (Emergency)	03 5439 9034
Costerfield CFA (Graham Harris)	0428 738 597
Heathcote Hospital (Main Reception)	03 5431 0900

2. Community Contacts

Neighbour: Neil Harris	0418 960 939 03 5433 2628
Neighbour: Rev. Tom Stokes	0419 567 086 03 9873 2698
Neighbour: Morrie & Sharon Bradley	0419 259 651 03 5428 1036
Neighbour: Margaret McAfee	0409 149 710 03 5433 2924
Neighbour: Alan Moore	0412 299 530
Neighbour: Sarah & Mark Wilkins	0407 004 937
Neighbour: Brian Mears	03 5433 2620
Neighbour: Rod Dark	0417 440 270
Environment Review Committee (ERC) – Chair – David Hale	0428 135 324
Community Reference Subcommittee – Chair – Brien Connolly	0439 650 737

**ADVERTISED
PLAN**



Brunswick West Tailings Storage Facility Dam Safety Emergency Plan

Appendix R – Incident report form for DEECA

Incident Report Form for Brunswick West TSF

Date / time of report: Date __ / __ / ____ Time __ : __ hours

Incident Name: _____

Is the dam about to fail? **Yes / No**

If Yes, have the police been notified? Yes / No

Is there a population at risk or potential loss of life ? **Yes / No**

If Yes, have the police been notified? Yes / No

Have the SES been notified Yes / No

Have any warnings been issued /evacuations occurred? Yes / No

Numbers of Population at risk

Potential loss of life numbers

Details of the person sending the report:

Name _____

Contact number _____

Organisation _____

Incident details:

Date of incident _____ Time _____

Type of incident / description _____

Address of incident _____

Is it a part of a larger incident (e.g. flood or fire)? Yes / No

Incident management details (if known):

Control agency _____

Incident Controller name _____

Contact number _____

Has there been failure of critical infrastructure? **Yes / No**

If Yes, describe: _____

Expected resolution? Date __ / __ / ____ Time __ : __ hours

Time of next report: Date __ / __ / ____ Time __ : __ hours

DEECA 24hr Emergency Contact	1300 13 4444 (State Agency Commander)
Email	sccvic.reception@scc.vic.gov.au

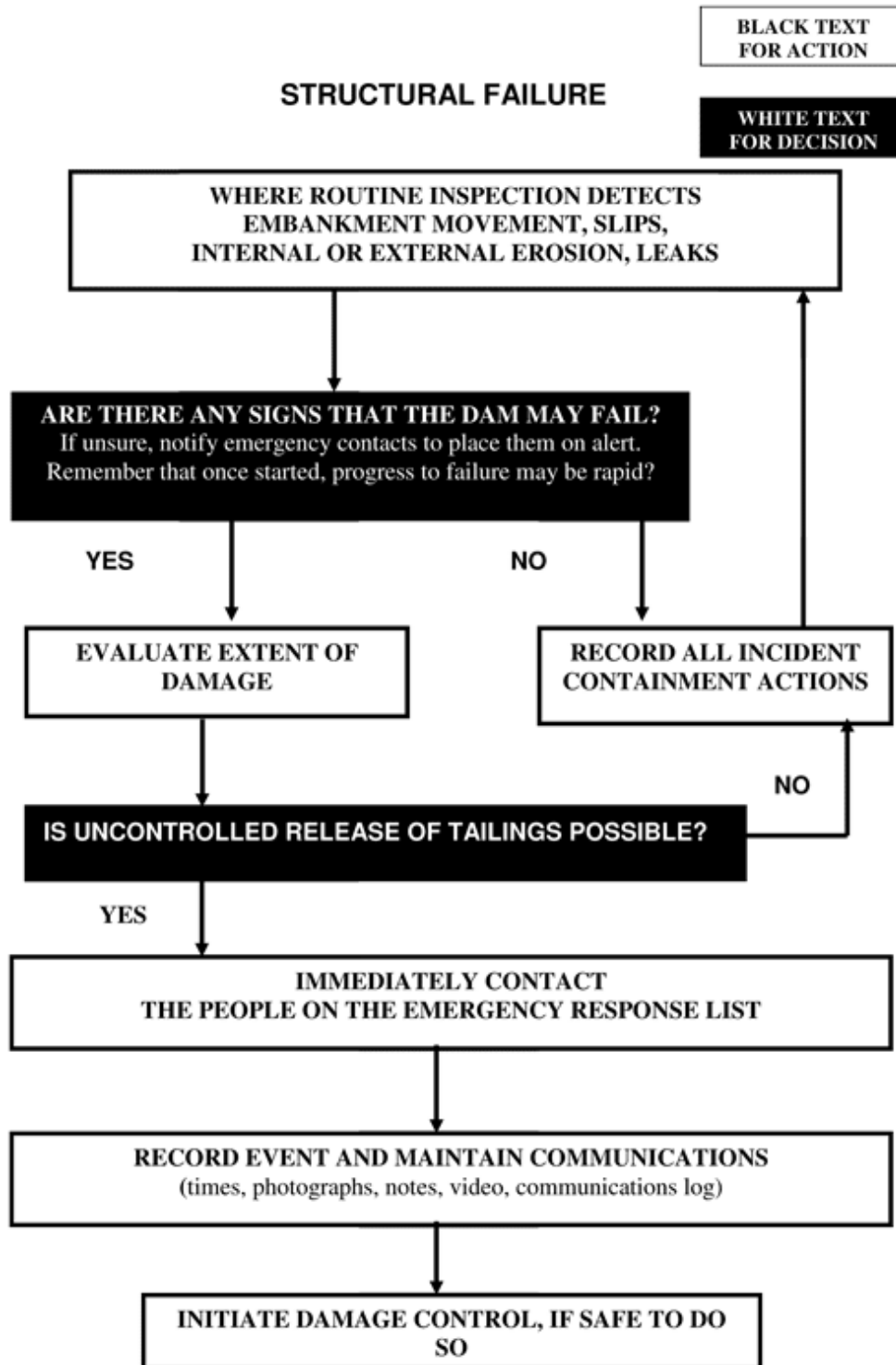
ADVERTISED PLAN

Appendix S - Dam Breach / Dam Failure Decision Trees

The following decision trees shall be used to determine actions required in the event of a potential TSF failure:

**ADVERTISED
PLAN**

1. Structural Failure Decision Tree

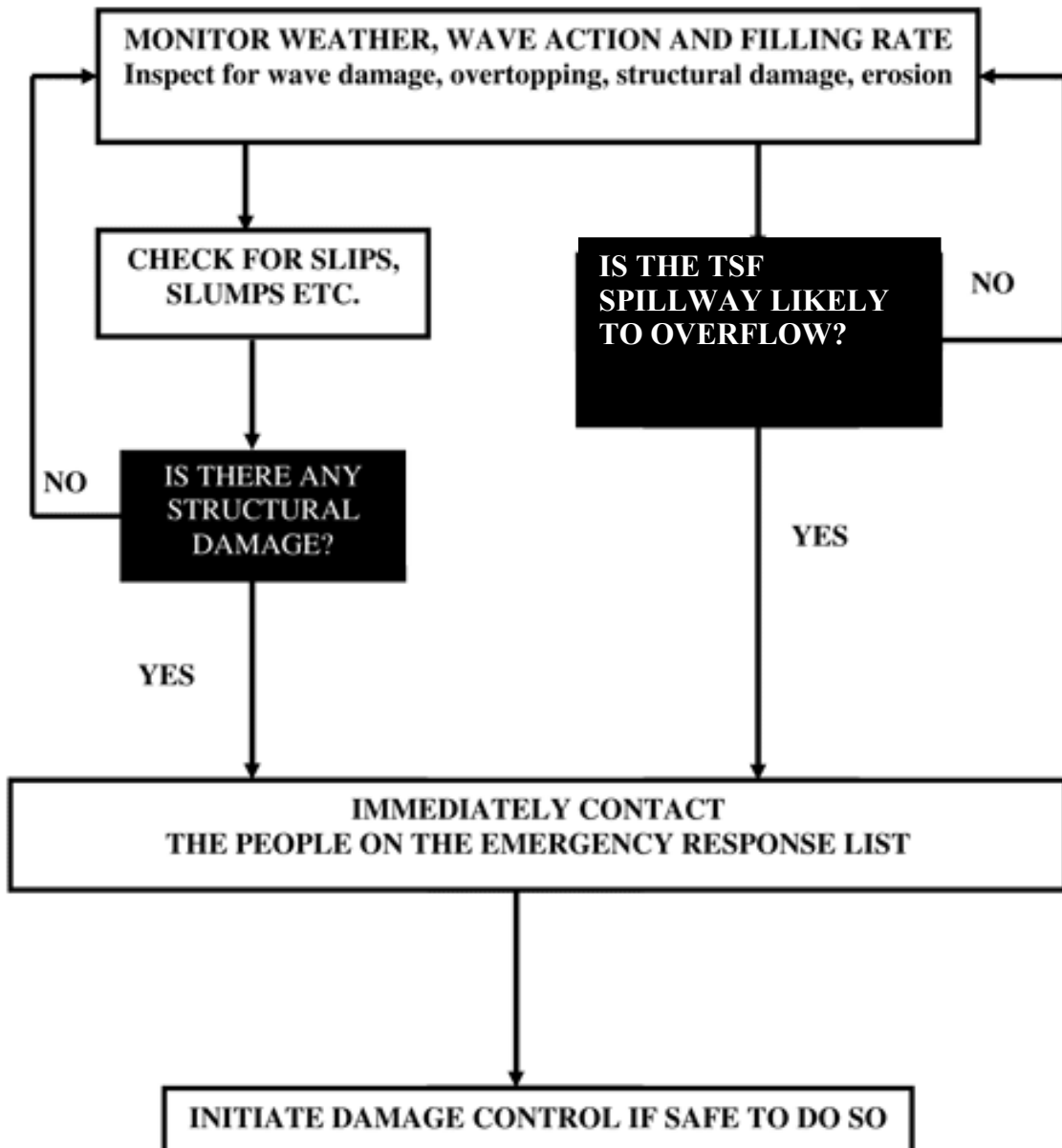


2. High Rainfall or Storm Event Decision Tree

HIGH RAINFALL OR STORM EVENT

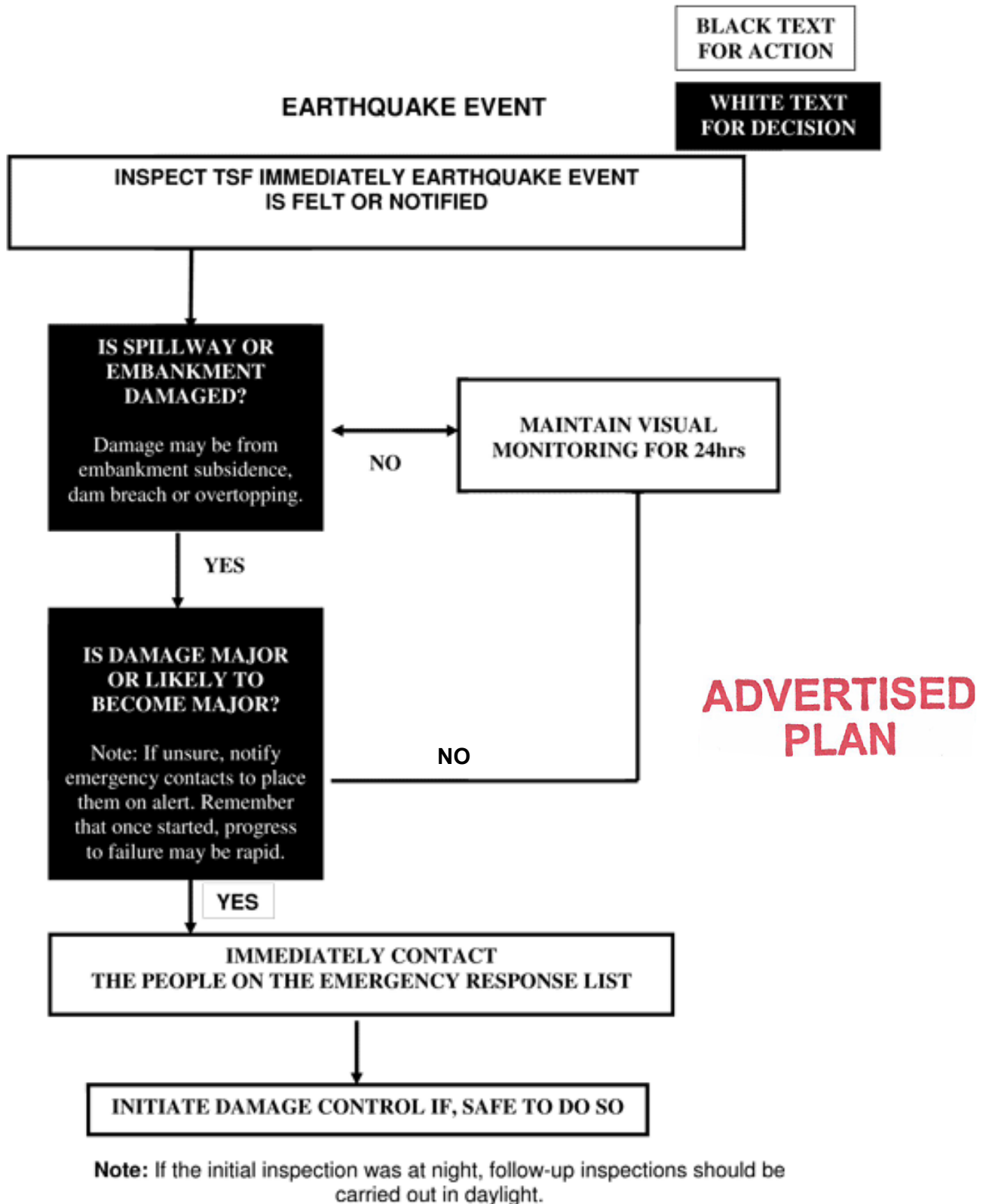
**BLACK TEXT
FOR ACTION**

**WHITE TEXT
FOR DECISION**

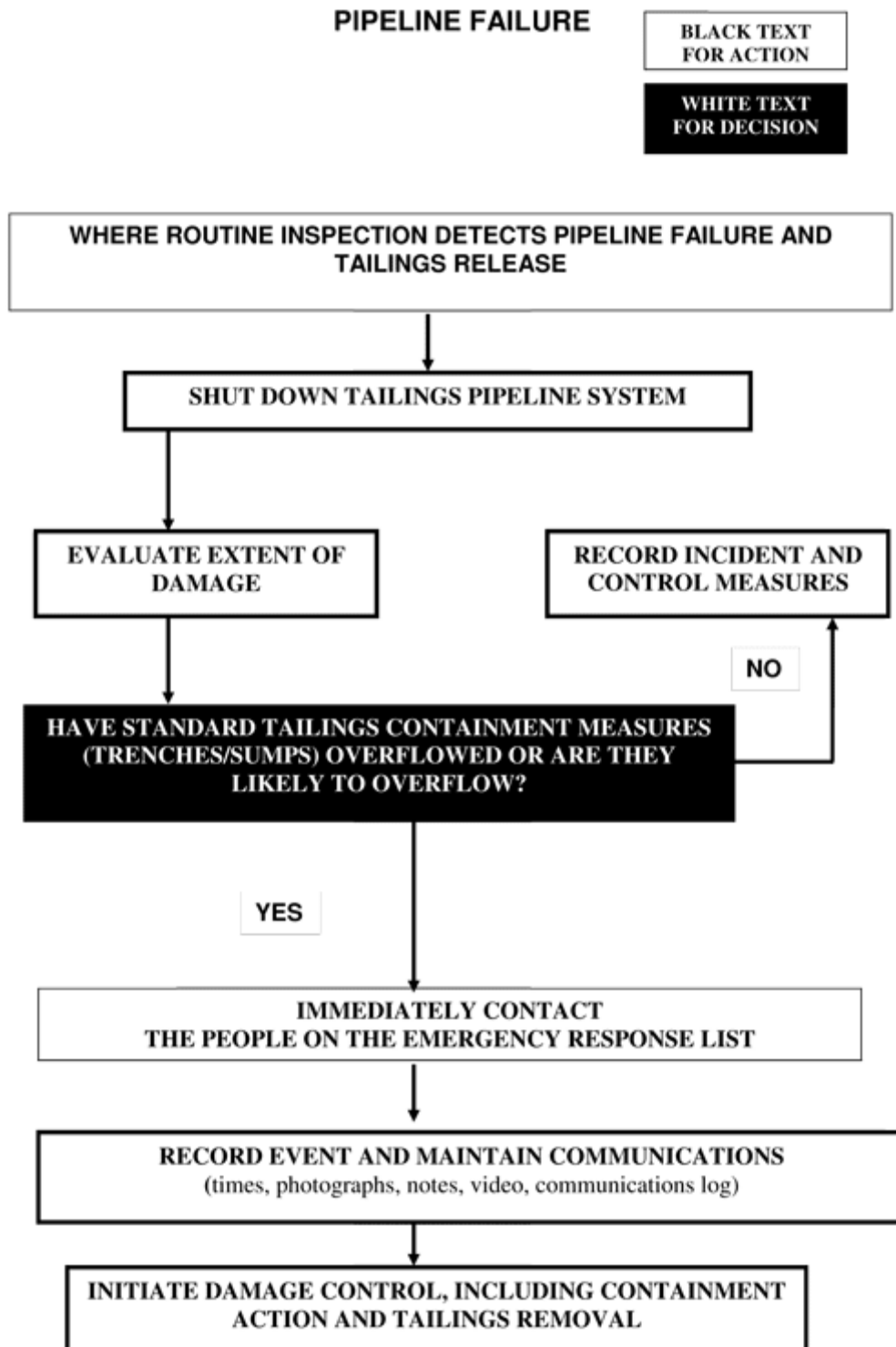


**ADVERTISED
PLAN**

3. Earthquake Event Decision Tree



4. Pipeline Failure Event Decision Tree



**ADVERTISED
PLAN**



Appendix T - Resource List

1. Earthmoving Equipment and Labour

Emu Downs Haulage Contracting (Bill Dent)	0418 301 998 03 5433 4080
---	------------------------------

2. Plant and Hire Equipment

VICPLANT Liquid Waste Solutions	03 5448 8478 0419 874 162
Bendigo Hire	03 5443 6885
Coates Hire	03 5439 3877

3. Security

NorthState Security (Ross Geri)	0408 595 486 03 5439 3601
---------------------------------	------------------------------

**ADVERTISED
PLAN**



Appendix U – Emergency Information for Population at Risk

The following template should be used as a guide and should be adapted as required.

1. Immediate evacuation messaging

For immediate, time critical warning advice, these messages may be used by the City of Greater Bendigo, VicPol, DEECA, VicSES or MRCO to alert a population at risk.

The following are example SMS mobile phone messages for alerting the community at risk in the dam breach area.

Flood Alert SMS Message Example:

<ENTER AUTHORITY> **issuing a flood warning for the Tin Pot Gully Creek catchment downstream of the Brunswick West Tailings Storage Facility. Water levels expected to peak at <ENTER TIME>. Further information, <ENTER PHONE NUMBER OR WEBSITE>**

Immediate Evacuation Alert Example:

<ENTER AUTHORITY> **advises that residents downstream of the Brunswick West Tailings Storage Facility should evacuate immediately to Augusta Mine Site due to potential dam failure. Further information, <ENTER PHONE NUMBER OR WEBSITE>**

2. Pre – Warned evacuation messaging

If there is no imminent threat, warning to evacuate will be arranged by the Vicpol.

ADVERTISED PLAN