

REGISTRATION OF EXISTING DAM FORM

This form is to be completed by consultants or Regional Water Management Officers in accordance with the requirements as detailed under Part 2 of the ***Water Management (Safety of Dams) Regulation 2015***.



Tasmania
Explore the possibilities

1. DETAILS OF INSPECTION

Person conducting Inspection:			
Organisation:		Date of Inspection:	
Email:		Phone:	
Signature:		Date:	

2. DETAILS OF DAM OWNER

Dam Owner			
Contact Name:			
Postal Address:			
Residential Address:			
Phone (BH):		Mobile:	
Email:			
If the dam extends over land owned by others provide the name and address of these landowners			

3. DETAILS OF DAM SITE LOCATION

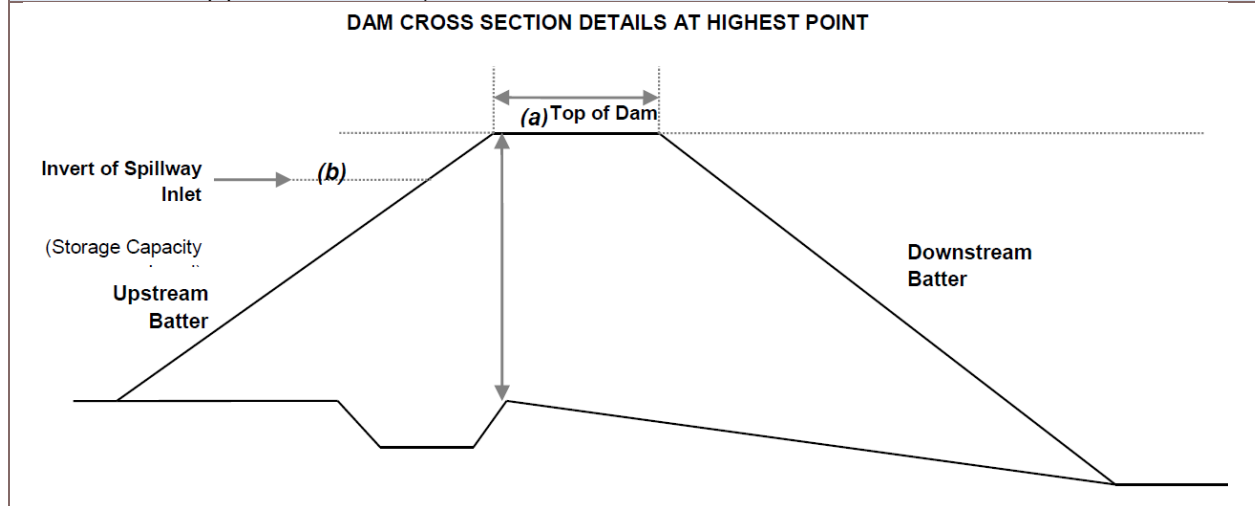
Dam Location:		Property PID:	
Property Address:			
Dam Type:		Water Resource:	
Dam Co-ordinates: <small>(using GDA94)</small>	Easting:		Northing:

4. PHYSICAL CHARACTERISTICS OF DAM

Estimated Capacity @ FSL:	<i>Megalitres</i>	Dam Wall Height (from toe to MFL):	<i>metres</i>
Crest Length:	<i>metres</i>	Crest Width:	<i>metres</i>
Upstream Batter slope:	<i>horizontal:vertical</i>	Downstream Batter slope:	<i>horizontal:vertical</i>
Storage Area	<i>hectares</i>	Base Width of Dam Wall:	<i>metres</i>
Dam Purpose:		If dam purpose 'Other' provide details:	
Note: Provide photos in electronic attachment with identifying captions and/or descriptions.			

5. DAM LEVELS

(Note: Relative Levels (RL) to be undertaken and bench mark established. Eg. Use RL as at the top of the thrust block on outlet pipe as bench mark.)



Description of Height Datum Reference: <i>(eg. datum type, peg, picket, monument?)</i>			
Check of Height Datum Reference:	Easting:	Northing:	
	Top of Dam (a):	Reduced Level: (m)	
Invert of Spillway (b):	Reduced Level: (m)		

6. PHYSICAL CHARACTERISTICS OF SPILLWAY and OUTLET

Spillway Inlet Width:	metres	Spillway Depth:	metres
Freeboard:	metres	Design Flood Capacity	cumecs
Catchment Area:	hectares	Annual Exceedance Probability	years
Outlet Pipe Diameter:	millimetres	Outlet Pipe Material:	
Outlet Valve Diameter:	millimetres		

7. SPILLWAY

Spillway calculations must be provided and spillway dimensions must comply with the requirements of the relevant consequence category.

SPILLWAY CHECK – INSERT SPILLWAY CALCULATIONS

(Undertake below Rational Method for Eastern Tasmania; or otherwise provide full calculations if using other accepted methods for other areas).

9.1. Catchment Area (A)		ha
9.2. Slope (se)		m/km
9.3. Main Stream Length (L)		km
9.4. Time of concentration (tc)		hours
tc = $\frac{91 \times \text{Main stream length}}{\text{Catchment Area}^{0.1} \times \text{Slope}^{0.2}}$		
9.5. Average Recurrence Interval (ARI) (Y)		years
9.6. Intensity Frequency Duration (IFD)		
9.7. Average Rainfall Intensity (I _{tc, Y}) For tc and ARI of Y years		mm/hour
9.8. Runoff Coefficient (C _Y) (Use Table)		
(a) Rainfall		mm
(b) Relief		
(c) Retention		
(d) Infiltration		
(e) Cover		
Total = $\frac{(a)+(b)+(c)+(d)+(e)}{100}$		
9.9. Calculation of Peak Flow Rate (Q _Y)		m ³ / second
Q _Y = $\frac{(C_Y) \times (I_{tc, Y}) \times (A)}{360}$		
= $\frac{\text{Total of (Item 7.8)} \times (\text{item 7.7}) \times (\text{item 7.1})}{360}$		
9.10. Spillway Width (L)		(m) width
L = $\frac{Q_Y}{1.704 \times H^{1.5}}$		
Where H = Spillway water depth		(m) depth
9.11. Does the existing spillway dimension suitably comply with the spillway calculation?		
9.12. If 'NO' provide recommendations of any remedial works required to be undertaken:		

8. CONSEQUENCE CATEGORY ASSESSMENT

(Note: Consequence Category Assessment must be provided with this audit otherwise it will not be accepted).

Have you undertaken and attached Consequence Category Spreadsheet?

Consequence Category Assessment available at: http://nre.tas.gov.au/Documents/ANCOLD_Consequence

Have you provided reasons for recommending Consequence Category?

Consequence Category:

9. DAM SAFETY COMPLIANCE CHECK

9.1. Upstream Slope of Dam:

- (a) Any significant erosion or beaching due to wave action?
- (b) Any sinkholes, sloughs, or areas of unusual settlement?
- (c) Any evidence of whirlpools in the reservoir?
- (d) Are there any trees or other vegetation which could impact the structural integrity of the embankment?

9.2. Dam Crest:

- (a) Any cracks, either transverse or longitudinal?
- (b) Any sinkholes, depressions, or areas of unusual settlement or deformations?
- (c) Are there any trees or other vegetation which could impact the structural integrity of the embankment?

9.3. Downstream Slope of Dam:

- (a) Any seepage areas or wet areas?
- (b) Any evidence of materials being transported by seepage flows (such as discoloured water or sediment deposits)?
- (c) Any sinkholes, depressions, sloughs, slides or areas of unusual settlement or deformations?
- (d) Any bulging evident, particularly near the downstream toe?
- (e) Are there any trees or other vegetation which could impact the structural integrity of the embankment?

9.4. Downstream Toe Area, Areas Downstream of the Dam, Abutment Areas

(Note: extend the inspection to all areas within 30 metres of the toe, abutments and spillway and return slope)

- (a) Any seepage areas or wet areas?
- (b) Any evidence of materials being transported by seepage flows (*such as discoloured water or sediment deposits*)?
- (c) Any evidence of seepage emerging in ponds downstream of the dam?
- (d) Any sinkholes, depressions, or areas of unusual settlement?
- (e) Any vegetation which could impact upon the dam?

9.5. Spillway & return Slope:

- (a) Any blockages in the spillway or return slope?
- (b) Any evidence of unusual deformations or displacements?
- (c) Any evidence of erosion, head cutting or channelling?
- (d) Any evidence that excessive erosion is occurring during major discharges?
- (e) Any seepage or water flows emerging through the apron or through cracks or joints?
- (f) Any evidence of depressions, sloughs, slides or unusual settlement adjacent to the spillway/return slope walls?
- (g) Any vegetation which needs to be removed?
- (h) Any evidence of materials being transported by seepage flows emerging through cracks or joints?
- (i) Any cracks, or spalls in concrete, or movement of rock gabions; or displacement of geotextile protection?

9.6. Outlet Pipe:

- (a) Is there any restriction to the outlet flow of the pipe?
- (b) Is there any evidence of the outlet works (pipe and valve) not being fully functional?
- (c) Is the outlet pipe restricted in being able to pass stream flow by being connected to other water delivery pipes?
- (d) Is there any evidence of the outlet works being damaged or in a poor state of repair?

9.7. Monitoring Equipment:

- (a) Has any dam safety monitoring equipment been installed on site?

9.8. Please provide additional information AND photographs concerning any of the above questions that were answered 'YES'.

Note all descriptions should include:

- *The specific location and relevant information.*
- *Seepage area descriptions should include; estimated seepage amount and water clarity description (clear/cloudy/muddy, etc.)*
- *Crack descriptions should include orientation and dimensions.*
- *Descriptions of changes at joints should include the estimated amount of movement, and movement direction.*
- *Deteriorated or spalled concrete descriptions should include degree of deterioration and approximate dimensions of the affected areas.*
- *Provide photos if needed in electronic attachment with identifying caption(s) and/or descriptions.*

Comments:

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9.9. Are any measures needed to make the dam safe?

If YES, provide recommendations

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10. ADDITIONAL COMMENTS

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Please forward completed form to:

**Coordinator (Water Licences and Dam Permits)
Department of Natural Resources and Environment Tasmania
GPO Box 44
HOBART TAS 7000**

or

Email: Water.Enquiries@nre.tas.gov.au