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Transitional Environmental Program**

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2	28/11/11	Removed compressor sumps from TEP, revised task dates resulting from operational feedback, updated authorised entities	J. Crooks
3	27/01/12	Revision in response to DERM letter request for further information (letter of 22/12/12, and meeting of 25/01/12)	J. Crooks

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1. Objectives and Scope

This Transitional Environmental Plan (TEP) aims to outline the program WestSide are undertaking to address transitional arrangements for bringing dam construction standards for the Meridian Seam Gas Fields within PL94 into compliance with the new Environmental Authority (EA) conditions (PEN102216711). Specifically EA conditions C11 and C12, relating to new construction requirements for aggregation and brine dams.

The objective of this document is to fulfil the requirements of section 333 of the Environment Protection Act 1994 for approval of transitional compliance arrangements.

2. Transitional Environmental Program Application

In addition to recent amendments to the Environmental Protection Act 1994 and associated development of policies and guidelines such as the Coal Seam Gas Water Management Policy, CSG water evaporation dams are considered by the Queensland Government to be a non-preferred water management approach. It is a mandatory requirement that existing CSG water evaporation dams should be transitioned into either CSG aggregation dams or brine dams that meet the new Policy standards. Alternatively, the evaporation dam should be decommissioned, unless it can be shown within a revised Environmental Management Plan (EM Plan) that no other CSG water management option is feasible. These obligatory requirements have a set deadline of 1st October 2011.

WestSide are submitting this voluntary Transitional Environmental Program under section 333 of the Environment Protection Act (1994) to address transitional arrangements to bring dam construction standards for PL94 into compliance with the new Environmental Authority conditions (PEN102216711): C(11), C12, C(25), C(26), C(27) and C(28). The Environmental Authority details and a comment on related Dam compliance are proved in Table 3. The expiration date of the TEP is 24th October 2013.

Table 3: Environmental Authority conditions and comment on compliance

Environmental Authority conditions	Compliance Comment
Schedule C – Dams	
(C11) All <i>aggregation dams</i> must:	
(a) be designed with a floor and sides of material that will contain the wetting front and any entrained contaminants within the bounds of the containment system during its operational life including any period of decommissioning and rehabilitation; and	The following Dams do not comply with this condition; • Ginnery Dam • Moura C Dam • Nipan field Dam • Dawson Field Dam
(b) have a system that will detect any passage of the wetting front or entrained contaminants through the floor or sides of the dam.	The following Dams do not comply with this condition; • Ginnery Dam • Moura C Dam • Nipan field Dam • Dawson Field Dam (groundwater bores currently be re-installed) • Mungi 9
(C12) All <i>brine dams</i> must:	WestSide do not operate any brine dams, however a comment is provided below with respect to brine dam conditions.
(a) be designed with a floor and sides of material that will contain the wetting front and any entrained contaminants within the bounds of the containment system during its operational life including any period of decommissioning and rehabilitation; and	The following Dams do not comply with this condition; • Ginnery Dam • Moura C Dam • Nipan field Dam • Dawson Field Dam
(b) have a system that will detect any passage of the wetting front or entrained contaminants through the floor or sides of the dam; and	The following Dams do not comply with this condition; • Ginnery Dam • Moura C Dam

Environmental Authority conditions	Compliance Comment
	• <i>Nipan field Dam</i> • <i>Dawson Field Dam (groundwater bores currently be re-installed)</i> • <i>Mungi 9</i>
(c) <i>have a system for the collection and proper disposal of any contaminants that move beyond the bounds of the containment system.</i>	<i>The following Dams do not comply with this condition;</i> • <i>Ginnery Dam</i> • <i>Moura C Dam</i> • <i>Nipan field Dam</i> • <i>Dawson Field Dam</i> • <i>Mungi 9</i>
<i>Transitional arrangements</i>	
(C25) <i>All existing aggregation dams must meet the requirements of condition (C11) by 1 October 2011.</i>	<i>The following Dams do not comply with this condition;</i> • <i>Ginnery Dam</i> • <i>Moura C Dam</i> • <i>Nipan field Dam</i> • <i>Dawson Field Dam</i> • <i>Mungi 9</i>
(C26) <i>All existing brine dams must meet the requirements of condition (C12) by 1 October 2011.</i>	<i>The following Dams do not comply with this condition;</i> • <i>Ginnery Dam</i> • <i>Moura C Dam</i> • <i>Nipan field Dam</i> • <i>Dawson Field Dam</i> • <i>Mungi 9</i>
(C27) <i>All existing coal seam gas evaporation dams must meet the requirements of conditions (C11) or (C12), relevant to its intended use, by 1 October 2011.</i>	<i>The following Dams do not comply with this condition;</i> • <i>Ginnery Dam</i> • <i>Moura C Dam</i>

Environmental Authority conditions	Compliance Comment
	• Nipan field Dam • Dawson Field Dam • Mungi 9
(C28) Construction of any dam or modifications to an existing dam determined to be in the high hazard or significant hazard category in accordance with the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams", as amended from time to time, is prohibited unless the required design plan details have been entered into the regulated dam register and certified by the chief executive officer for the holder of this environmental authority, or their delegate, as being accurate and correct.	The following Dams do not comply with this condition; • Ginnery Dam • Moura C Dam • Nipan field Dam • Dawson Field Dam • Mungi 9

3. Project KPI and Milestone Reporting

WestSide plan to provide a summary of Key Performance Indicator (KPI) achievement in Milestone Reports to DERM at the completion of the initial detailed design, Cultural Heritage and Landowner approvals stage, and after the decommissioning of each Dam. Each Milestone Report will provide a summary of KPI's against the specific Dam being reported on, these are provided below.

A detailed Dam Decommissioning Gantt chart has been provided as Appendix 1 to outline major tasks, expected timeframes, and milestone reporting dates for the staged decommissioning. It must be noted that it is WestSide's intention to work to the stated timeframes; however the timeframes may be subject change resulting from circumstances outside of WestSide's control, such as: wet season access restrictions, cultural heritage and landowner agreements, contamination assessment outcomes and infrastructure and contractor availability. If any opportunity presents to bring forward any decommissioning tasks WestSide will endeavour to take advantage of this, including changes in the priority of Dams to be decommissioned. Any foreseeable delays or changes to the Program's schedule will be reported to DERM as a priority, for consideration in any application to DERM for TEP amendments.

Table 7: Key Performance Indicator.

Task	Action	KPI	Estimated Completion
1. Complete Site Water Balance	Complete Site Water Balance	Site Water Balance Report – Final submitted to DERM	2 April 2012
2. Develop Detailed Infrastructure Specifications	Detail Infrastructure Specifications	Detailed Infrastructure Specifications Report – Final submitted to DERM	30 April 2012
3. Plant & Infrastructure Procurement	Procurement of Plant & Infrastructure	Milestone Report 1 submitted to DERM containing procurement agreements for required Plant & Infrastructure	3 August 2012
4. Cultural Heritage Approval	Obtain Cultural Heritage Approval for new infrastructure sites	Milestone Report 1 submitted to DERM containing Initial Cultural Heritage Investigation Report and Cultural Heritage Management Strategy Agreement.	3 August 2012
5. Landowner Approval	Obtain Landowner Approval for new infrastructure sites	Milestone Report 1 submitted to DERM containing Executed Conduct and Compensation Agreements.	3 August 2012
6. Source & Engage Construction Contractors	• Tender documents developed • Engage Construction Contractors and proposals received • Contracts awarded.	Milestone Report 1 submitted to DERM confirming construction contracts finalised	3 August 2012
Moura C Dam			
7. Divert Field CSG Water from Dam	CSG water diverted from Dam	Written notification to DERM	1 October 2012
8. Remove Remaining CSG Water from Dam	Removal of Remaining CSG Water from Dam	Written notification and supporting photographs submitted to DERM	3 December 2012
9. Contamination Assessment, Rehabilitation Plan,	• Soil contamination investigation • Prepare rehabilitation report Soil removal	Milestone Report 2 submitted to DERM containing: • Submit soil	28 February 2013

Task	Action	KPI	Estimated Completion
Remediation and Rehabilitation of Dam	and site validation sampling if required • Waste disposal if required • Obtain DERM approval for handover to landholder or • Earthworks program completed in accordance with the rehabilitation plan.	contamination investigation, rehabilitation report, and contamination validation sampling results • landholder agreement; or • Written notification of completed earthworks and supporting photographs	
Mungi 9 Dam			
10. Divert Field CSG Water from Dam	CSG water diverted from Dam	Written notification to DERM	22 November 2012
11. Remove Remaining CSG Water from Dam	Removal of Remaining CSG Water from Dam	Written notification and supporting photographs submitted to DERM	25 January 2013
12. Contamination Assessment, Rehabilitation Plan, Remediation and Rehabilitation of Dam	• Soil contamination investigation • Prepare rehabilitation report Soil removal and site validation sampling if required • Waste disposal if required • Obtain DERM approval for handover to landholder or • Earthworks program completed in accordance with the rehabilitation plan.	Milestone Report 3 submitted to DERM containing: • Submit soil contamination investigation, rehabilitation report, and contamination validation sampling results • landholder agreement; or • Written notification of completed earthworks and supporting photographs	25 April 2013
Ginnery Dam			
13. Divert Field CSG Water from Dam	CSG water diverted from Dam	Written notification to DERM	24 January 2013

Task	Action	KPI	Estimated Completion
14. Remove Remaining CSG Water from Dam	Removal of Remaining CSG Water from Dam	Written notification and supporting photographs submitted to DERM	29 March 2013
15. Contamination Assessment, Rehabilitation Plan, Remediation and Rehabilitation of Dam	• Soil contamination investigation • Prepare rehabilitation report Soil removal and site validation sampling if required • Waste disposal if required • Obtain DERM approval for handover to landholder or • Earthworks program completed in accordance with the rehabilitation plan.	Milestone Report 4 submitted to DERM containing: • Submit soil contamination investigation, rehabilitation report, and contamination validation sampling results • landholder agreement; or • Written notification of completed earthworks and supporting photographs	20 June 2013
Nipan Field Dam			
16. Divert Field CSG Water from Dam	CSG water diverted from Dam	Written notification to DERM	28 March 2013
17. Remove Remaining CSG Water from Dam	Removal of Remaining CSG Water from Dam	Written notification and supporting photographs submitted to DERM	31 May 2013
18. Contamination Assessment, Rehabilitation Plan, Remediation and Rehabilitation of Dam	• Soil contamination investigation • Prepare rehabilitation report Soil removal and site validation sampling if required • Waste disposal if required • Obtain DERM approval for handover to landholder or • Earthworks program completed in accordance with the rehabilitation plan.	Milestone Report 5 submitted to DERM containing: • Submit soil contamination investigation, rehabilitation report, and contamination validation sampling results • landholder agreement; or • Written notification of completed earthworks and	5 September 2013

Task	Action	KPI	Estimated Completion
		supporting photographs	
Dawson Field Dam			
19. Infrastructure Construction	Infrastructure Construction undertaken	New infrastructure installed and commissioned.	10 May 2013
20. Divert Field CSG Water from Dam	CSG water diverted from Dam	Written notification to DERM	30 May 2013
21. Remove Remaining CSG Water from Dam	Removal of Remaining CSG Water from Dam	Written notification and supporting photographs submitted to DERM	2 August 2013
22. Contamination Assessment, Rehabilitation Plan, Remediation and Rehabilitation of Dam	• Soil contamination investigation • Prepare rehabilitation report Soil removal and site validation sampling if required • Waste disposal if required • Obtain DERM approval for handover to landholder or • Earthworks program completed in accordance with the rehabilitation plan.	Milestone Report 5 submitted to DERM containing: • Submit soil contamination investigation, rehabilitation report, and contamination validation sampling results • landholder agreement; or • Written notification of completed earthworks and supporting photographs	24 October 2013

4. Risk Mitigation Summary

To ensure protection of environmental and safety values whilst the decommissioning project is underway WestSide have currently initiated, or will soon develop the following risk mitigation measures.

Dam Integrity Assessments

To ensure dam integrity is satisfactory and will remain effective during the decommissioning program an independent civil engineer specialising in Dam integrity assessment has been engaged to assess WestSide's Dams. His report entitled "Meridian Seamgas – Report on Inspection and Condition Assessment of Dams" has been provided in draft and notes that during the decommissioning process the following remedial actions should be implemented:

- Removal of all trees from the storage area and embankment and toe areas
- Slashing of grass on the embankment and in the toe areas
- Repair and re-grassing of eroded areas on the embankments where necessary
- Survey of the dams to accurately define its current lines, levels and storage capacity characteristics
- Installation of water level gauges in each operating dam
- Replacement / installation of a rain gauge in each operating dam
- Recommission the groundwater bore and commence routine observation where such bores exist
- Continue regular routine inspection of all dams.

WestSide are in the process of implementing these recommendations.

Dam water levels

During wet weather conditions, Dam water levels are monitored weekly. WestSide's dam management protocols aim to ensure all Dams are kept at a minimum of 500mm to 1000mm freeboard, a level of 500mm initiates an emergency response to remove water back to below the 1000mm level.

The HSE Manager and Moura Area Manager are accountable for monitoring and responding to Dam water levels. Dam water management results form part of the WestSide's monthly internal HSE reporting program, including graphs of dam levels for HSE Steering Committee meeting and Toolbox meeting discussions.

Dam water quality

Dam water quality testing occurs at 6 monthly intervals, and is undertaken prior to the wet season.

Routine Dam Inspections

Daily weather forecast monitoring occurs to assist with routine Dam inspections which involve a walk around the Dam crest at two monthly intervals, with increased frequency inspections during high rainfall events or conditions, or where freeboard range is less than 1000mm. The following is noted during these inspections:

- Dam freeboard level,
- Estimated Dam volumes,
- Presence of vegetation on the Dam,
- Any erosion events,
- Any animal tracks or burrows,
- Any safety issues, and
- Any environmental issues.

Risk Assessment

Risk assessments have been undertaken for each dam to ensure human safety and environmental aspects are protected. These involve visual assessment and the development of area topographical maps, to assist with assessing the potential for such aspects as:

- Risk to human health or local populations from dam failure,
- Risk to environmental values from Dam failure,
- Risk to stock or pasture from Dam failure,
- Risk to operational infrastructure,
- Risk to human and fauna health from Dam access, and
- Risk to CSG operations.

Emergency Response

Dam emergency response procedures have been developed and communicated for the unlikely event that a dam should over-top or a dam integrity failure was to occur.

DERM Notifications

In the event of a significant CSG water related spill resulting from wet weather, operational activities or a dam integrity failure WestSide are obliged to report immediately to DERM's Pollution hotline as per the requirements define in Environmental Authority for PL94 (PEN102216711).

Landowner Notifications

A register of Landowners is maintained by WestSide and in the event of any environmental incident occurring on their land (including anything Dam related), the Landowner will be immediately contacted by a senior member of WestSide's staff.

5. Dam Decommissioning TEP Project Gantt Chart



