



**DAMPIER TO
BUNBURY
NATURAL GAS
PIPELINE
STAGE 5
EXPANSION**

**REHABILITATION
MANAGEMENT
PLAN**

**Revision 5
January 2015**



DOCUMENT CONTROL

Rev	Date	Description
1	17/08/2011	Section 18 within Stage 5 CEMP
2	16/07/2014	Standalone document with revised completion criteria for regulator review
3	25/07/2014	Revised to address DPaW comments
4	18/12/2014	Revision to native species richness and density criteria
5	21/01/2015	Minor administrative amendment

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1 Introduction

1.1 Background

The Dampier to Bunbury Natural Gas Pipeline (DBNGP) was constructed and commissioned in 1984 to transport natural gas from the north west of Western Australia (starting near the township of Dampier) to commercial, industrial and domestic markets in the south west of the State (finishing at MLV157 (Clifton Road) near the city of Bunbury).

On the 13 December 2006, the then Minister for Environment issued Ministerial Statement (MS) 735 for the Stage 5 expansion to the DBNGP, involving construction of 11 loops. DBNGP (WA) Nominees Pty Ltd (DBP) is the proponent of MS 735.

Condition 14-1 of MS 735 requires the development of a Rehabilitation Management Plan in consultation with the Department of Environment and Conservation (DEC) now the Department of Parks and Wildlife (DPaW); and to the requirement of the Minister for the Environment on advice of the Environmental Protection Authority (EPA).

In order to address condition 14-1, a Rehabilitation Protocol was established within Section 18 of the overarching Stage 5 Expansion Project Looping Project Construction Environmental Management Plan (Stage 5 CEMP) (DBP, 2011) and approved for implementation.

In March 2014, DBP reported a failure to meet rehabilitation completion criteria in its Annual Compliance Report for MS735 (Strategen, 2014) citing difficulty in meeting the specific criteria established across all bioregions intersected by the linear infrastructure.

This DBNGP Stage 5 Expansion Rehabilitation Management Plan has been prepared to establish more broadly relevant completion criteria for implementation through superseding Section 18 (Rehabilitation Protocol) within the Stage 5 CEMP.

1.2 Objective

The objective of the DBNGP Stage 5 Expansion Rehabilitation Management Plan is to guide reinstatement of the construction disturbance footprint to re-establish vegetation and control erosion.

Ultimately, the objective of this DBNGP Stage 5 Expansion Rehabilitation Management Plan is to satisfy condition 14 of MS 735.

1.3 Scope

The scope of the DBNGP Stage 5 Expansion Rehabilitation Management Plan is limited to the rehabilitation of disturbance undertaken in association with Stage 5 construction, as approved under MS 735. This document should be read in conjunction with the Stage 5 CEMP and in place of Section 18 within the Stage 5 CEMP.

2. Implementation Strategy

Effective rehabilitation will minimise the risk of introducing weed species; minimise disturbance of fauna through re-establishing habitat; and stabilise disturbed areas, reducing the potential for erosion and sedimentation of surrounding water bodies.

Native vegetation removed during construction will be respread to aid in sediment and erosion control, retain moisture and to aid establishment of seeds/seedlings and revegetation of the disturbance footprint. Active rehabilitation (seeding) in remnant vegetation will only be conducted on areas that do not respond to the initial rehabilitation treatment.

Aerial photography and land owner consultations have shown that the DBNGP corridor traverses many areas of remnant vegetation that are currently used by land owners as fire breaks, stock routes and vehicle access tracks. The access for vehicles in the future near the pipeline is critical for ongoing maintenance and or operational activities along the pipeline. Therefore, parts of the construction right-of-way will remain disturbed as a result of the need for an access track. The existing track may be relocated within the pipeline easement to cater for access to two pipelines. Consequently, the quality of regrowth on the DBNGP corridor in many of these areas is poor. This protocol aims to re-establish the land condition to that prior to construction, to the most practical extent.

DBP will finalise rehabilitation objectives on private land, with the concerned landowner prior to ground disturbing activities. These objectives and specific environmental management requirements will be added to the Environmental Line List (ELL) as required.

Rehabilitation immediately following completion of construction will be the responsibility of the Construction Contractor. Subsequent monitoring and assurance of satisfactory rehabilitation will be the responsibility of DBP.

2.1 Performance Indicators

Table 2-1: Objectives, Standards and Measurement Criteria

Objective	Standard	Measurement Criteria
To return a self-sustaining native plant community that is as close to the original as possible	<ul style="list-style-type: none"> Guidance for the Assessment of Environmental Factors Rehabilitation of Terrestrial Ecosystems No. 6 (EPA, 2006) 	Refer Table 2-5

2.2 Control Measures

Table 2-2: Control measures

Control Measure	Responsibility
Areas requiring non-routine measures shall be entered onto the Environmental Line List (ELL).	Senior Advisor – Environment and Heritage
All waste materials (e.g. bags, pegs, skids, pillows) and equipment shall be removed from the construction areas once backfilling and tie-ins are completed.	Construction Contractor
All flagging and bunting installed for other than environmental or safety reasons shall be removed from the construction areas once backfilling and tie-ins are completed.	Construction Contractor
Small amounts of rocks and stones generated by the construction process shall be distributed evenly over the corridor. Where larger volumes of such material have been produced, consideration shall be given to its removal from site.	Construction Contractor
All temporary gates shall be removed (unless required for operational reasons) and the fence reinstated to at least as good as the pre-construction condition, unless permanent gates or other arrangements	Construction Contractor

Control Measure	Responsibility
are agreed to with the landholder.	
Any third party infrastructure disturbed during construction shall be restored to the owner's satisfaction.	Construction Contractor
Public roads and tracks used during construction shall be returned to their pre-construction state, or to a condition agreed to with the landholder.	Construction Contractor
Areas subject to high traffic movements during construction shall be ripped to a depth of 30 cm, where necessary, prior to respreading topsoil.	Construction Contractor
If the construction works result in subsequent erosion of watercourses, reasonable remedial action will be taken if requested by the DoW. This would require that the erosion is demonstrably attributable to the construction work or an associated activity by DBP.	Senior Advisor – Environment and Heritage, General Manager System Design and Operation

2.3 Monitoring and Recording

Table 2-3: Monitoring of Environmental Performance:

Monitoring	Details	Timing	Responsibility	Records
Rehabilitation Monitoring	Establish rehabilitation monitoring sites within representative rehabilitated areas and adjacent control areas to monitor specified aspects against set criterion (refer Table 2.5)	Annually in spring for Loops 8 to 10 and post wet season for Loops 0 to 7 until the rehabilitated areas have regenerated to a stable condition, to the satisfaction of DPaW.	Senior Advisor – Environment and Heritage	Rehabilitation Monitoring Report
Photo Monitoring	Photo monitoring sites shall be established to achieve the maximum spacing specified in Table 2.4. For each round of monitoring, two photographs shall be taken at each photo monitoring site – one in each direction along the corridor.	Prior to clear and grade; immediately following reinstatement; and 12 months following reinstatement	Senior Advisor – Environment and Heritage	Photo Monitoring Report

Table 2-4: Maximum spacing of photo monitoring sites

Loop	Area	Maximum spacing
Loops 0 - 6	Areas of conservation value other than locations of Threatened Flora	200 m
	Locations of Threatened Flora	50 m
	All other areas	5 km
Loops 7 - 10	Areas of conservation value other than locations of Threatened Flora	200 m
	Locations of Threatened Flora	50 m
	Other areas containing native vegetation	200 m
	All other areas	Not required

Table 2-5: Rehabilitation Criteria

Aspect	Criterion	
	General Right-of-Way	Areas of High Conservation Value ¹
Native Plant Species Density (plants per m ²):	Perennial native plant species density is greater than or equal to 40% of that of the adjacent control area at 36 months.	Perennial native plant species density is greater than or equal to 50% of that of the adjacent control area at 36 months.
Native Species Richness (per plot):	Perennial native species richness equals or exceeds 40% of that of the adjacent control area at 36 months.	Perennial native species richness equals or exceeds 50% of that of the adjacent control area at 36 months.
Native Species Foliage Cover (%):	Percentage foliage cover of perennial native species indigenous to each vegetation community is greater than or equal to 40% of that of the adjacent control area at 36 months.	Percentage foliage cover of perennial native species indigenous to each vegetation community is greater than or equal to 50% of that of the adjacent control area at 36 months.
Weed Foliage Cover (%):	Foliage cover of Declared and Environmental Weeds ² is not greater than that of the adjacent control area at 12 and 24 months (excluding extensive populations of negligible and low ranking weed species).	Foliage cover of Declared and Environmental Weeds ² is not greater than that of the adjacent control area at 12 and 24 months (excluding extensive populations of negligible and low ranking weed species).

¹Areas of high conservation value include Conservation Parks and Nature Reserves traversed by the DBNGP.

²Environmental Weed Ranking: *Environmental Weed Strategy for W.A.* (DPaW, 2013).

3. References

DBP (2011) *Stage 5 Expansion Project Looping Project Construction Environmental Management Plan*

Strategen (2014) *DBNGP Stage 5 Looping Expansion Project 2013 Annual Environmental Compliance Report (Statement No. 735)*

EPA (2006) *Guidance for the Assessment of Environmental Factors Rehabilitation of Terrestrial Ecosystems No. 6*

