

Appendix 2 – Pluto LNG Project Management Plan Key Actions

Woodside has complied with the key actions contained within the Environmental Management Plans and programmes required by Ministerial Statement 757. Key actions from each management plan or program are outlined below. Evidence of compliance has also been provided.

Key Management Action	Source Ref/ Chap	Evidence
Marine Treated Wastewater Discharge Management Plan		
Effluent treatment plant to comply with the requirements of Ministerial Statement 757.		Evidence provided in Section 2 of this report, against M7.1 to M7.8.
Dredge Impact Management Plan (Condition 6-6)		
Coral Condition Assessments		
The results of the coral spawning assessment will be reported to the Woodside Construction Team Environmental Coordinator who will advise the Woodside Construction Team Project Manager. The Project Manager will inform the Dredge Environment Management Group (DEMG) and the Department for the Environment and Conservation (DEC).	4.6.6	Spawning assessments have been completed for all of the predicted spawning windows outlined in Section 4.6.6 of the DSDMP. Dredging activities have been suspended due to spawning where required following consultation with the DEMG. This has been required on four occasions in the 2010 reporting timeframe. Refer to Appendix 5 - 'Spawning Assessments and Dredging Suspension Periods - Previously Submitted Compliance Reports'.
Dredging will cease in areas likely to effect coral larval survival if the spawning assessment shows there will be a significant event in the next predicted spawning window. The spawning assessment will take place 2-3 weeks before the spawning window. A significant spawning event is where more than 20% or more of the individuals of a species/genus group show readiness to spawn in the next window and the corals surveyed are the dominant and subdominant ones from any site.	Appendix H 4.5	
The coral spawning report will be used by the Woodside Construction team to effectively manage the dredging works with respect to the key ecological windows to the requirements of Schedule 4 of the Ministerial Statement.	Appendix H 6	
An assessment in conjunction with the DEMG and on advice from the DEC will be made on whether the planned dredging activities should cease to ensure that larval survival and recruitment will not be effected by dredging.	4.6.6	
A baseline (coral recruitment)* survey will be undertaken no less than two weeks prior to dredging commencing and then a post dredging survey within three months of the completion of dredging and disposal. A stand alone progress report representing the pre-dredging survey results will be provided to the DEC prior to dredging commencing. A final stand alone report will compare the baseline with the post dredging survey to provide an indication of mortality rates for this size class of corals from different sites.	Appendix G - 4.3	Baseline coral health monitoring was conducted prior to the commencement of dredging in order to establish baseline levels of mortality. This report was provided to DEC as Appendix 14 in Pluto LNG Project Ministerial Statement 757 Compliance Report 2008.

Water Quality and Sediment Condition Assessments		
<p>Satellite imagery from the coarse, medium and high resolution satellites will be processed by Woodside to provide broad scale, semi-quantitative information on the extent and intensity of turbidity within the survey area.</p>	4.6.4	<p>MODIS images have been captured approximately twice a week since the commencement of dredging and analysed to provide broad scale semi-quantitative turbidity maps. These MODIS images are used to aid interpretation of water quality results during exceedances (refer to Condition 6-2 to 6-4). A high resolution IKONIS image was also captured prior to dredging. 'Rapid Eye' and 'IKONIS' images were removed from the Remote Sensing Water Quality Monitoring Program for Phase 2 of the dredging program as they provided limited benefit for interpretation of in-water monitoring results and management of the dredging program.</p> <p>The DEMG supported the proponent's proposal to remove these high resolution techniques from the remote sensing program.</p>
<p>Sediment samples from each site will be taken prior to dredging and again after the completion of dredging. If the post dredging survey shows significant change in sediment characteristics, a further survey will be undertaken six months later to determine if the sediment characteristics have returned to pre-dredge state.</p>	4.6.3	<p>A baseline PSD analysis survey was undertaken in early November 2007 prior to the commencement of dredging in accordance with the approved Sampling and Analysis Plan.</p>
<p>A report will be provided to the DEC after each (PSD)* sampling event.</p>	Appendix E 2.6	<p>This survey was provided to DEC as Appendix 15 in Pluto LNG Project Ministerial Statement 757 Compliance Report 2008.</p> <p>The post dredging survey was conducted following the completion of dredging in 2010 and the report provided to DEC.</p>
<p>A key component of the monitoring programme will be an early model verification phase in which the predictions made by the model for various sets of environmental (weather and sea state) conditions can be tested by taking real measurements in and around the plume.</p>	4.9	<p>Model verification was completed during 2010.</p>

BEP Techniques		
The specific techniques, equipment, technology and management measures that will be implemented as part of Woodside's commitment to BEP dredging are described in Section 4.3.4 (Table 26) of the DSDMP. These measures must be implemented where possible.*	4.3.2	<p>Nil dredging impact on coral health to date (refer to Conditions 6-2 to 6-4) is evidence that appropriate proactive measures are being taken to reduce the potential for impact on coral communities from turbidity and/or sedimentation;</p> <p>The BEP techniques specified in the DSDMP have been implemented where required.</p>
The effectiveness of BEP techniques will be reported to the DEMG in the event that they are implemented. An independent dredging expert has also been appointed to the DEMG to offer further advice where applicable.	4.3.4	The effectiveness of the BEP techniques implemented has been discussed with the DEMG where applicable. Meeting minutes are submitted to the DEC DEMG Representative following each meeting.
Marine Quarantine Management Plan (Condition 8-1)		
Quarantine Management Plan key actions.	Various	The key management actions relating to risk assessment and inspection/vetting of dredging equipment and/or other vessels associated with dredging are specifically addressed under Ministerial Conditions 8-2 to 8-9. Verifiable evidence is provided against these conditions and not repeated here.
Sea Turtle Management Plan (Condition 9-2)		
Development and implementation of a construction lighting protocol.	Table 7-CS1	The Construction Lighting Protocol has been submitted to, and approved by, DEC. The protocol is being implemented on site.
Implementation of Blasting Procedures.	Table 7-CS2	Due to the success of mechanical dredging methods in the berth pocket and inner trunkline, only a single blast pattern was required. This occurred during daylight hours on 17 October 2008 without incident. The DEMG was consulted during the required verification process for the exclusion zone. An exclusion radius of 1000m was adopted.

Implementation of Dredging Procedures.	Table 7- CS3	Key actions relating to dredging works were examined by an Independent Fauna Observer (IFO) from Blue Planet Marine fortnightly during the turtle nesting season (November – April). Fortnightly reports are available at the request of DEC; Appendix 6 contains the summary report of IFO inspections between 2007 and 2010.
Management of nearshore / offshore spill response plan.	Table 7- CS4	Woodside has in place a spill response plan that manages the response to a marine hydrocarbon spill if one was to occur. It has not been activated for this work scope as no significant spills occurred during completion of the works.
Limit access to Holden Beach (personnel and vehicles).	Table 7- CS5	Restricted access is covered in site inductions and the area is fenced or otherwise marked to prevent accidental access.
Development and implementation of an operational lighting protocol.	Table 8 - OS1	Submission of Operational Lighting Protocol to DEC. This has been approved by the DEC.
Cultural Heritage Management Plan		
Meet statutory obligations in relation to the management of cultural heritage.	Section 1	Site A - Department of Indigenous Affairs confirmed compliance. Site B - independent consultant advice confirms compliance.
Implement where practicable the recommendations made by the Indigenous groups of the area in relation to cultural heritage management.	Section 1	Pluto Public Environmental Review (chapters 10 and 11) outline how Woodside has implemented recommendations from the local Aboriginal groups regarding footprint design. In addition, the local Aboriginal groups are involved in an ongoing process of performance monitoring to assist Woodside in achieving the objectives of cultural heritage management plans for the project.
Minimise impacts to the cultural heritage environment.	Section 1	The majority of rock art on Pluto LNG Project leases has remained undisturbed. No engravings were damaged during the relocation of rock art.
Air Quality Management Plan		
Ensure plant emissions and the effect, if any, this has on ambient air quality is in place for the operations phase of the Pluto LNG Development.		The Air Quality Management Plan was submitted to DEC on 29 September 2010 for approval.

Greenhouse Gas Abatement Program		
Offset reservoir CO ₂ emissions for the life of the project using allocation from the Woodside market abatement portfolio, to meet the environmental approval abatement conditions.	6.1	A contract with CO2 Australia to biosequester carbon dioxide is in place as the mechanism by which the Pluto LNG Project will discharge offset obligations for the project.
Preliminary Decommissioning Plan		
Ensure a preliminary decommissioning plan is approved, in accordance with the requirements of condition 14-1.		A revised preliminary decommissioning plan was submitted to DEC for approval on 8 January 2010 and was approved on 1 February 2010. There were no actions to undertake relating to decommissioning during the reporting period.
Final Decommissioning Plan		
Not applicable at this stage. The Final Decommissioning Plan will be developed closer to decommissioning date. Key actions to satisfy this commitment will be identified once plan has been approved.		NA

** Note: Minor additions have been made to key actions from management plans for clarification of intent.*