

Gales-Kingscliff Pty Ltd

ABN: 75 093 540 080

Cudgen Lakes Sand Extraction Project

Final Statement of Commitments

Compiled by:



R.W. CORKERY & CO. PTY. LIMITED

Cudgen Lakes Sand Extraction Project

Final Statement of Commitments

Compiled for:

Gales-Kingscliff Pty Ltd
20 Ginahgulla Road
BELLEVUE HILL NSW 2023

Telephone: (02) 9327 2481
Facsimile: (02) 9387 8230
Email: segals@galesgroup.com.au

Compiled by:

R.W. Corkery & Co Pty. Limited
Geological & Environmental Consultants
ABN: 31 002 033 712

Brooklyn Office:

1st Floor, 12 Dangar Road
PO Box 239
BROOKLYN NSW 2083

Telephone: (02) 9985 8511
Facsimile: (02) 9985 8208
Email: admin@rwcorkery.com

Orange Office:

Suite 15, 256 Anson Street
ORANGE NSW 2800

Telephone: (02) 6362 5411
Facsimile: (02) 6361 3622
Email: mail@rwcorkery.com

August 2008

Ref No. 617/07



This Copyright is included for the protection of this document

COPYRIGHT

© R.W. Corkery & Co. Pty. Limited 2008
and
© Gales-Kingscliff Pty Ltd 2008

All intellectual property and copyright reserved.

Apart from any fair dealing for the purpose of private study, research, criticism or review, as permitted under the Copyright Act, 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission. Enquiries should be addressed to R.W. Corkery & Co. Pty. Limited.



CONTENTS

	Page
1 INTRODUCTION.....	1
2 FINAL STATEMENT OF COMMITMENTS	1

TABLES

Table A Final Statement of Commitments.....	2
---	---



This page has intentionally been left blank



1 INTRODUCTION

This Final Statement of Commitments has been prepared in accordance with Section 75H(6(c)) of Part 3A of the *Environmental Planning and Assessment Act 1979*, and presents a compilation of the actions and initiatives the Proponent commits to implement if the Cudgen Lakes Sand Extraction Project is approved. These commitments have effectively been updated from those presented in Section 5 of the *Environmental Assessment* to address the recommendations made by various NSW government agencies.

2 FINAL STATEMENT OF COMMITMENTS

The commitments are designed to effectively manage, mitigate, guide and monitor the Project through its various phases.

All parties involved in the design, establishment and operational phases of the project will be required to undertake their work in accordance with the commitments. The commitments are presented in tabular form (**Table A**) and identify the desired outcome, action and timing of commitments, arranged initially by operational activity and then by environmental issues.



Table A
Final Statement of Commitments

Page 1 of 16

Desired Outcome	Action	Timing
1. Area of Activities		
All approved Project components are constructed and activities are undertaken in the area(s) nominated on the approved plans and figures (unless moved slightly to avoid individual trees within the pipeline corridors).	1.1 Survey and mark the boundaries of the areas of disturbance.	Prior to site establishment and each extraction stage.
2. Sand Extraction and Processing		
Final extraction boundaries remain stable.	2.1 Ensure extraction batters for all long-term boundaries are formed no steeper than 1:5 (V:H).	Continuous.
Extraction and processing rates do not exceed assessed maximum rates.	2.2 Ensure the extraction rate is contained to limit initial drawdown levels (see Commitments 7.1 and 7.3).	During initial operational stages.
	2.3 Ensure total extraction rates do not exceed 650 000m ³ per year.	Continuous during operations.
	2.4 Ensure no more than 200 000m ³ of sand is processed per year.	Continuous during operations.
3. Operating Hours		
Management of operating hours of work in accordance with project approval conditions.	3.1 Undertake all site establishment activities between 7:00am and 6:00pm Monday to Friday and 7:00am to 1:00pm Saturdays.	During Site Establishment.
	3.2 Undertake all sand extraction (dredging to processing area) and processing between 6:30am and 10:00pm Monday to Friday and 7:00am to 4:00pm Saturdays.	During operations.
	3.3 Undertake all sand extraction (dredging to fill sites) between 6:30am to 6:30pm Monday to Friday and 7:00am to 1:00pm.	During operations.
	3.4 Undertake all soil removal and sand extraction (excavation) between 7:00am and 6:00pm Monday to Friday and 7:00am to 1:00pm Saturdays.	During operations.
	3.5 Undertake all product distribution and VENM receipt between 7:00am and 6:00pm Monday to Friday and 7:00am to 1:00pm Saturdays.	During operations.
	3.6 Undertake audible site maintenance between 6:30am to 7:00pm Monday to Friday, 6:30am to 4:00pm Saturdays and 9:00am to 4:00pm Sundays.	During operations.
	3.7 Undertake inaudible site maintenance at any time.	During operations.
4. Waste Management		
Minimisation of general waste creation and maximisation recycling wherever possible.	4.1 Dispose all recyclables and general waste in appropriate waste receptacles.	As required.



Table A (Cont'd)
Final Statement of Commitments

Page 2 of 16

Desired Outcome	Action	Timing
4. Waste Management (Cont'd)		
Minimisation of the potential risk of environmental impact due to waste creation, storage and / or disposal.	4.2 Place all oversize materials within the VENM(a) receival area.	As required.
	4.3 Intern any oversize materials suspected of being acid generating beneath at least 2m of water.	As required.
5. Rehabilitation		
The creation of a stable final landform, available for the proposed future use(s) of recreation and nature conservation.	5.1 Progressively backfill the northern extraction pond to the natural ground level.	When suitable backfill and backfill areas are available
	5.2 Progressively backfill selected finalised sections of the southern extraction pond to create wetland areas.	When suitable backfill and backfill areas are available
	5.3 Stabilise all earthworks and disturbed areas no longer required for Project-related activities in order to minimise erosion and sedimentation, dust lift-off and to reduce visual intrusion.	As areas become available.
	5.4 Conduct ongoing annual rehabilitation monitoring and maintenance.	Ongoing.
	5.5 Cross-rip all unsealed roads and remove all buildings and structures not required for the final land use.	Following completion of operations.
	5.6 Prepare a Rehabilitation Management Plan.	Within 6 months following commencement of extraction operations.
6. Flooding and Drainage		
Minimisation of potential flooding impacts upon the Project and surrounding land users and property.	6.1 Construct and maintain shallow spillways (approximate elevation 1.3m AHD) within the bunds surrounding the extraction ponds at the eastern and western extent of the bunding adjacent the deepest part of the extraction pond.	Continuous whilst bunding in place.
	6.2 Remove sections of bunding once floodwaters have peaked to allow floodwaters trapped behind the bunds to drain freely to the western drainage channel as the flood recedes.	During flood event.
	6.3 Fill the processing area approximately 0.75m to 1.0m above natural ground level (1.55m AHD to 1.8m AHD) to prevent inundation of the processing area during local catchment floods.	During site establishment.
	6.4 Block the entrance to the processing area with sand relocated from on-site stockpiles prior to a forecast Tweed River overbank flood to reduce the level of inundation within the processing area.	Prior to forecast Tweed River overbank flood.



Table A (Cont'd)
Final Statement of Commitments

Page 3 of 16

Desired Outcome	Action	Timing
6. Flooding and Drainage (Cont'd)		
Minimisation of potential flooding impacts upon the Project and surrounding land users and property.	6.5 Maintain drainage paths outside of the bunded and filled areas to allow floodwaters to drain freely.	Continuously.
	6.6 Prepare a flood evacuation plan to ensure that personnel respond appropriately to a warning of an imminent Tweed River overbank flood.	Prior to commencement of operations.
	6.7 Realign the western drainage channel parallel to and south of Altona Drive to provide a more efficient drain and allow faster drainage of floodwaters towards the Tweed River.	During realignment of Altona Drive (separate approval).
7. Groundwater		
Minimisation of potential groundwater quality or quantity impacts upon surrounding groundwater users (including groundwater-dependent ecosystems).	7.1 Commence extraction within the southern extraction pond at an equivalent rate of 100 000m ³ per year and progressively ramp up in increments of up to 100 000m ³ .	Commencement of extraction within southern extraction area.
	7.2 Ensure the maximum extraction rate within the southern extraction pond does not exceed 450 000m ³ per year during the first two years of operations or until a sufficient size extraction pond is created to allow extraction at a rate of 650 000m ³ per year.	During the first 2 years of operation.
	7.3 Adjust sand extraction rates to ensure that groundwater drawdown levels remain within the predicted limits.	Ongoing during operations.
	7.4 Install a height gauge within the Southern Extraction Pond so that water levels can be monitored daily to m AHD.	Following commencement of sand extraction.
	7.5 Undertake standard monitoring for pH, EC, temperature, REDOX potential and groundwater level (m AHD) at the monitoring locations nominated in the Groundwater Monitoring Plan.	Monthly during the first year of operations and subject to review, extend to quarterly.
	7.6 Undertake comprehensive monitoring for pH, EC, temperature, REDOX potential, groundwater level (m AHD), dissolved oxygen, calcium, magnesium, sodium, potassium, bicarbonate, sulfate, chloride, filterable iron, aluminium and arsenic. Monitoring will be undertaken by a suitably qualified or trained person at the monitoring locations nominated in the Groundwater Monitoring Plan and analysis undertaken at a NATA accredited laboratory.	Quarterly during the life of operations.



Table A (Cont'd)
Final Statement of Commitments

Page 4 of 16

Desired Outcome	Action	Timing
7. Groundwater (Cont'd)		
Minimisation of potential groundwater quality or quantity impacts upon surrounding groundwater users (including groundwater-dependent ecosystems).	7.7 Continue groundwater monitoring following the cessation of extraction and placement of VENM.	Quarterly, following completion of operations for 12 months and annually thereafter for 5 years.
	7.8 Regularly review monitoring data.	Quarterly during the first year of operations and six monthly following the first year.
	7.9 Provide a summary of the monthly / quarterly data relevant to each bore to the respective landowners.	Ongoing during monitoring.
	7.10 Compile an annual summary of all monitoring results and forward to DWE as part of the annual return for the site.	Ongoing during monitoring.
	7.11 Coordinate all monitoring activities with those already underway by Hanson Construction Materials and Australian Bay Lobster to ensure meaningful analyses can be obtained from all monitoring on the flood plain.	Ongoing during monitoring.
	7.12 Consult with each likely affected landowner and investigate complaints of poor water quality in neighbouring dams/bores.	Ongoing during operations.
	7.13 Undertake a more detailed sampling and analysis program to identify the source of the drawdown or contamination in the event the following is detected. - Deterioration in groundwater quality outside of the effects of drought or flood due to on-site activities. - Significant variations in groundwater level outside drought or flood conditions due to on-site activities. - Formation of a cone of depression or a groundwater mound that extends beyond the site boundary.	If and when listed event occurs.



Table A (Cont'd)
Final Statement of Commitments

Page 5 of 16

Desired Outcome	Action	Timing
7. Groundwater (Cont'd)		
Minimisation of potential groundwater quality or quantity impacts upon surrounding groundwater users (including groundwater-dependent ecosystems).	7.14 Negotiate an agreement with each affected landholder in the event water quality or quantity is adversely affected to either: • deepen the existing bore or install a replacement bore; • pay a cash compensation equal to the assessed cost of deepening the bore; • provide an alternative water supply, such as from the extraction ponds or groundwater bore registered to the Proponent; or • provide an appropriately sized rainwater storage tank to enhance property water storage.	When the water quality or quantity of available groundwater is adversely affected.
	7.15 Investigate and secure a suitable alternative water supply (or other form of compensation) for R.W. Julius commensurate with the agreed legal water usage from groundwater supplies from Lot 1 DP598073.	Prior to commencement of dredging.
	7.16 Monitor, using data loggers, water levels and water usage rates within the dams on the R. Julius property that would potentially be affected.	Measurements to occur on a monthly basis during ongoing operations.
	7.17 Implement the provision of an alternative water supply or other agreed compensation.	In the event water supplies are adversely affected.
	7.18 Provide copies of any negotiated agreements to the Department of Planning and Department of Water and Energy for their records.	In the event an agreement is negotiated.
8. Surface Water		
Prevention of discharge of dirty, acidic or otherwise contaminated water from the Project Site.	8.1 Reduce sand extraction and temporarily cease VENM placement if a significant deterioration in extraction pond water quality occurs, until the source is identified and appropriate amelioration measures are implemented.	In the event significant deterioration of extraction pond water occurs.
	8.2 Regularly monitor surface water to provide an accurate assessment of the adequacy of practices implemented as part of the operation.	Ongoing.

Table A (Cont'd)
Final Statement of Commitments

Page 6 of 16

Desired Outcome	Action	Timing
9. Acid Sulfate Soils and Sediments, Soil Contamination and Agricultural Suitability (Cont'd)		
Minimisation of PASS and VENM(b) acidification and adequate treatment and storage of these materials.	9.1 Convey return water (from both the wash plant and fill sites) in a manner which ensures fines / silts remain in suspension and do not settle in the return pipelines. If a pipeline is not used, undertake sluicing in a manner that ensures turbulent flow and sufficient velocity to prevent the deposition of fines material within the drainage line.	Ongoing during processing and hydraulic transportation of fill sand.
	9.2 Return all separated fines to the extraction ponds for final placement with the return outlet located at a minimum 1m below the water surface within the extraction ponds.	During return of fines to extraction ponds.
	9.3 Settle silts/fines arising from processing a minimum depth (typically 2m) below the surface of the southern extraction pond.	During internment of silts / fines.
	9.4 Do not extract residual clay material from the base of the sand resource.	Ongoing during extraction.
	9.5 Ensure a suitably qualified or trained person assesses imported material (VENM) in accordance with the ASSMAC guidelines and confirms its classification as VENM prior to acceptance at the Project Site.	Ongoing during VENM receipt.
	9.6 Place VENM(b), received at the premises which is intended to be: - dredged or interned at the base of the southern extraction pond; or - placed within the northern extraction area a minimum depth of -1.0m AHD; within a nominated period.	Within 24 hours of the time of its excavation at the originating site.
The level of documentation for managing and reporting matters relating to Potentially Acid Sulfate Soils and Sediments is comprehensive and appropriately maintained.	9.7 Compile a site specific Acid Sulfate Soil and Sediment Management Plan for the Project in accordance with relevant legislation and in consultation with government agencies, in particular DWE and DECC. Ensure the management plan covers both the management of acid generation during extraction operations and the management of potentially acid generating VENM(b).	Prior to sand extraction and / or receipt of VENM (b).
	9.8 Retain records of monitoring on site together with the application rates of the alkaline amendment used as neutralising agents. Provide these records to statutory authorities upon request.	Ongoing.



Table A (Cont'd)
Final Statement of Commitments

Page 7 of 16

Desired Outcome	Action	Timing
9. Acid Sulfate Soils and Sediments, Soil Contamination and Agricultural Suitability (Cont'd)		
The level of documentation for managing and reporting matters relating to Potentially Acid Sulfate Soils and Sediments is comprehensive and appropriately maintained.	9.9 Obtain documentation for each truck load of VENM(b) received at the Project Site that demonstrates that the excavation of VENM(b) and its transport and handling has been conducted in accordance with the NSW ASS Manual to prevent the generation of acid.	Ongoing during VENM receipt.
	9.10 Submit to the DECC(EPA) an annual return (in accordance with the issued Environment Protection Licence) which outlines the results of all required monitoring.	Annually.
	9.11 Retain documentation for each truck load of VENM(b) received at the site which indicates: - the details of the originating site (name, address, owner and developer, contact details); - the details of the transportee (name, address, contact details, vehicle registration); - date and time of the extraction of the VENM(b); - pH of the VENM(b) at the time of its extraction, and at the time immediately prior to its placement underwater; and - the name of the person (certified practicing soil scientist) who assessed the material and classified it as VENM(b).	Ongoing during VENM(b) receipt.
	9.12 Ensure verification of neutralising agent application volumes and verification results are available.	Prior to burial of VENM(b).
Prevention of any off-site impacts as a result of acidification of soil, sediments or water.	9.13 Treat stripped topsoil/loam at determined rates prior to use in earth bunds or rehabilitation.	During stripping programs.
	9.14 Treat and validate washed sand where required.	Ongoing during processing operations.
	9.15 Collect and analyse soil samples at a rate of 4 per hectare.	Prior to removal of topsoil and loam.
	9.16 Incorporate an alkaline amendment into the topsoil / loam at the calculated rate (based on the results of sampling).	Prior to removal or following placements on treatment pads.
	9.17 Complete the validation sampling of treated soil at a rate one sample per 1 000m ³ .	Following treatment and prior to placement of soil.



Table A (Cont'd)
Final Statement of Commitments

Page 8 of 16

Desired Outcome	Action	Timing
9. Acid Sulfate Soils and Sediments, Soil Contamination and Agricultural Suitability (Cont'd)		
Prevention of any off-site impacts as a result of acidification of soil, sediments or water.	9.18 Construct bunding around the extraction and processing areas to control drainage.	During site establishment and ongoing adjustments during operations.
	9.19 Ensure all surface water and runoff from the extraction and processing areas drains or is pumped into the extraction ponds.	Ongoing throughout operations.
	9.20 Process extracted material via a hydrocyclone (such as would be used within the wash plant) or similar to hydraulically separate the fines (potentially containing pyrite) from the sand resource.	Ongoing during processing operations.
	9.21 Treat all material not processed using a hydrocyclone or similar with alkaline amendments.	Ongoing during processing.
Demonstration that adverse impacts arising from Potentially Acid Sulfate Soils and Sediments are not evident on site.	9.22 Undertake validation testing of extracted sand and stripped topsoil/loam as described in Table 4.9 of the Environmental Assessment and in accordance with the NSW ASS Manual (ASSMAC, 1998) and amended laboratory methods.	As required and ongoing during operations.
	9.23 Audit the effectiveness of the operational safeguards and monitoring by an external environmental consultant.	Initially quarterly and reducing to annually during operations.
	9.24 Test the pH of the water into which the VENM(b) is placed to ensure it is not less than 6.5 at any time.	Ongoing during disposal of VENM.
	9.25 Undertake monitoring as outlined in Table 4.10 of the Environmental Assessment in relation to VENM(b) receipt and processing / internment.	Ongoing during disposal of VENM.
	9.26 Test the pH of the VENM(b) immediately prior to under-water disposal / backfilling to ensure the pH is not less than 5.5.	Prior to underwater disposal on VENM(b).
	9.27 Undertake a internal environmental audits of VENM(b) receipt and treatment during the initial stages of the operation to ensure appropriate treatment is being conducted and records are up to date.	Monthly during VENM(b) receipt.



Table A (Cont'd)
Final Statement of Commitments

Page 9 of 16

Desired Outcome	Action	Timing
9. Acid Sulfate Soils and Sediments, Soil Contamination and Agricultural Suitability (Cont'd)		
Appropriate procedures are in place to manage any departures from nominated procedures or criteria.	9.28 Complete the following in the event that validation or monitoring criteria are exceeded for topsoil, loamy sand or sand. • Test the acid neutralising capacity of the stripped topsoil or hydraulically separated sands. • Incorporate alkaline amendments at the appropriate rate if the measured acid neutralising capacity is insufficient to neutralise the existing and potential acidity. • Undertake validation testing following treatment of loamy sand and unprocessed sand and apply additional alkaline amendments as required. Repeat process until compliance with action criteria is met.	In the event validation or monitoring criteria are exceeded.
	9.29 Terminate VENM(b) receipt at the premises if the pH of the water falls below accepted levels, until approval to continue is received in writing from the DECC(EPA).	In event extraction pond waters pH is <6.5 or <1 pH unit below background levels.
	9.30 Complete the following in the event monitoring criteria are exceeded for imported VENM(b). • Sample at the maximum rate of one sample / 1 000m³ and test for _{SCR} and total actual acidity. • Treat the material with the calculated amount of alkaline amendment if any records indicate _{SCR} >0.03% or total actual acidity >18mol H⁺/t. • Treat the material with the calculated amount of alkaline amendment. Undertake verification testing at the rate of 1 sample/per 1 000m³ to confirm _{SCR} <0.03% and total actual acidity <18mol H⁺/t prior to final placement or further processing.	In the event monitoring criteria are exceeded.



Table A (Cont'd)
Final Statement of Commitments

Page 10 of 16

Desired Outcome	Action	Timing
9. Acid Sulfate Soils and Sediments, Soil Contamination and Agricultural Suitability (Cont'd)		
Appropriate procedures are in place to manage any departures from nominated procedures or criteria.	9.31 Undertake the following as soon as possible after becoming aware that any waste/material accepted at the premises is not VENM. - Notify the EPA in writing. - Remove the material/waste from the premises and dispose of it at a facility licensed to take such waste. - Implement a procedure to audit all further incoming loads from that waste origin site prior to accepting any further waste, until such time as the results of such audits demonstrate that the waste origin site's screening and assessment procedures have been corrected to prevent further miss-classification of waste.	In the event waste / material not classified as VENM accepted onto the Project Site.
	9.32 Introduce hydrated lime at the appropriate rate if the extraction pond water quality fails accepted levels and ensure target pH level of 6.5 is not "overshot" leading to severely alkaline conditions (pH>9.0).	In event pH of extraction ponds fall below 6.5.
10. Flora and Fauna		
Minimisation of short and long term impacts on flora within the Project Site and pipeline corridors.	10.1 Progressively rehabilitate completed works within the Project Site to maximise cover of native vegetation in appropriate areas and minimise opportunities for erosion and weed invasion.	As areas become available for rehabilitation.
	10.2 Define and clearly mark vegetation for retention prior to the commencement of site establishment to ensure that native vegetation clearing is confined only to those areas required for Project operations.	Prior to commencement of site establishment activities.
	10.3 Control noxious weeds on the Project Site.	Ongoing.
	10.4 Place pipelines within pipeline corridors so as to avoid the need to clear trees or shrubs, wherever possible.	During placement of pipes.
Establishment of native vegetation with ecological and conservation value.	10.5 Utilise local native plant species recommended by Idyll Spaces (2008) for rehabilitation and landscaping. Within and adjacent the final lake (Note: vegetation set back from the final lake would reflect the specific land use – eg. sporting fields, gardens, etc).	During rehabilitation and landscaping activities.
	10.6 Undertake replacement planting of the same tree species within the same area in the unlikely event that a small number of trees are required to be removed for the laying of the pipelines.	In the event trees are required to be removed within the pipeline corridor.



Table A (Cont'd)
Final Statement of Commitments

Page 11 of 16

Desired Outcome	Action	Timing
11. Aquatic Ecology		
Minimisation of short and long term impacts on aquatic ecology within and surrounding the Project Site.	11.1 During the realignment of the western drainage channel as part of the realignment of Altona Drive. - maintain the original connection to other upstream and downstream drainage channels; - avoid stranding native fish and, where possible, relocate them to similar habitat; - ensure fish free passage through the channel is made available where permanent crossings are to be constructed (eg. access road crossings); and - consult with DPI and DECC officers during the realignment process.	During the realignment of Altona Drive and the western drainage channel.
	11.2 Create wetlands along finalised sections of the southern extraction pond (see Commitment No. 5.2).	Ongoing.
	11.3 Develop a Blue-Green Algae Management Plan incorporating a monitoring program.	Within 6 months of commencement of sand extraction.
	11.4 Undertake frequent and regular monitoring of temperature, dissolved oxygen, nutrients, colour and concentrations of blue-green algae.	Weekly during summer and monthly monitoring during winter.
	11.5 Obtain samples and readings from the upper 0.5m of the water at least at four locations around the periphery of the dredge pond and two in the centre.	Ongoing.
12. Traffic and Transport		
Vehicle movements related to the Project do not have undue effects on traffic flow and accident rates on the surrounding road network.	12.1 No vehicles permitted to turn right from Crescent Street to Tweed Coast Road. (Note: Light vehicles travelling south from the Project Site would be directed to travel on Crescent Street/Cudgen Road.	Continuous or until upgrade of Crescent Street / Tweed Coast Road intersection.
	12.2 No heavy vehicles to turn right from Altona Drive to Crescent Street.	Continuous.
	12.3 Weigh all product trucks using the on-site weighbridge and ensure all RTA weight restrictions are adhered to.	Ongoing during product despatch.
	12.4 Inform all truck drivers and staff of road rules, speed restrictions and considerate driving practices.	On engagement of each driver.



Table A (Cont'd)
Final Statement of Commitments

Page 12 of 16

Desired Outcome	Action	Timing
12. Traffic and Transport (Cont'd)		
Vehicle movements related to the Project do not have undue effects on traffic flow and accident rates on the surrounding road network.	12.5 Ensure all drivers are aware of all relevant operational hours (See also Commitment No. 2.9).	On engagement of each driver.
	12.6 Undertake mechanical road sweeping of Altona Drive and site access roads.	As required for project-related mud/sand tracking.
	12.7 Cover all product loads to reduce dust lift off.	Continuous during product despatch.
	12.8 Realign Altona Drive in accordance with DA 05/1450.	Prior to sand extraction within the southern extraction site reaching the existing alignment of Altona Drive.
	12.9 Construct the upgraded intersection of Altona Drive and Crescent Street together with a short section of road to link with the existing Altona Drive and an additional two passing bays along the existing alignment of Altona Drive.	Prior to despatch of products from the processing area or the receipt of VENM.
	12.10 Construct the four entrances to the Project Site from Altona Drive with the sealed carriageway of Altona Drive flared out to 9m wide for approximately 15m in advance of each access (from the right hand turn perspective) using a 25m transitional length. Ensure the access road is 10m wide at its intersection with Altona Drive providing a 15m inside radius for the left hand turn out.	During site establishment and realignment of Altona Drive.
	12.11 Implement appropriate management controls including the use of warning signs and manual traffic control during the laying of pipelines adjacent to Tweed Coast Road and during the underboring of the road crossings.	As required during site establishment.
	12.12 Establish a telephone complaints line, advertised in the local telephone directory, to enable any traffic-related incidents, unsafe operation or general concern to be reported. Investigate all complaints and act decisively on substantiated incidents.	Ongoing during site establishment and operations.
	12.13 Implement a truck driver's code of conduct required to be signed by all Company employed or contracted truck drivers. The code will outline each truck driver's responsibility and the process to be undertaken in the event of a complaint.	Prior to product despatch or VENM receipt.



Table A (Cont'd)
Final Statement of Commitments

Page 13 of 16

Desired Outcome	Action	Timing
13. Noise		
All activities are undertaken in such a manner as to reduce the noise level generated, minimise impacts on surrounding landholders and/or residents and ensure noise levels remain below relevant DECC criteria.	13.1 Acoustically treat the dredge including the enclosure of the engine with acoustic louvres and install a high performance muffler.	Prior to hydraulic extraction.
	13.2 Undertake a series of tests prior to commissioning the sand processing plant to ensure compliance with the noise limits at all locations and confirm that the equipment to be used on the Project Site have sound power levels comparable to those used within the noise modelling assessment.	Prior to commissioning of processing plant.
	13.3 Install an acoustic fence on the processing area bund (see Figure 2.6) to increase the height of the noise barrier on the southern side of the processing area.	Prior to commissioning processing plant.
	13.4 Enclose the noisier components of the equipment to promote noise reduction of the plant.	Prior to commissioning processing plant.
	13.5 Fit all mobile vehicles on the site with broadband type reversing beepers or alternative safety devices such as strobe lights and / or cameras.	Prior to use of vehicle.
	13.6 Regularly service all equipment on site to ensure sound power levels of each item remains at or below that nominated for noise modelling purposes.	Ongoing.
	13.7 Maintain the internal road network to an acceptable standard to limit body noise from empty trucks.	Ongoing.
	13.8 Strictly adhere to all approved hours of operation.	Continuous.
	13.9 Undertake a program of noise monitoring to confirm that noise emission levels from the site establishment and construction period are within acceptable limits at the surrounding assessment locations.	Site establishment.
	13.10 Undertake an ongoing monitoring program to demonstrate that noise emissions from the Project Site are within the Project specific noise limits at the surrounding assessment locations.	Annually or biennially.
	13.11 Regularly review the extent of noise monitoring throughout the life of the Project to ensure meaningful data is being collected.	Ongoing.



Table A (Cont'd)
Final Statement of Commitments

Page 14 of 16

Desired Outcome	Action	Timing
14. Air Quality		
Site activities are undertaken without exceeding DECC air quality criteria or adversely impacting on surrounding receivers.	14.1 Apply water prior to soil stripping using the on-site water cart (in the event that the natural soil moisture is insufficient to avoid generation of excessive airborne dust).	During site establishment.
	14.2 Minimise the area of soil stripping within the extraction site to provide an area large enough to supply only 6 to 12 months of sand resource.	During site establishment and ongoing during operations.
	14.3 Seed fast growing grass species or add mulch cover to all bunds and stockpiled topsoils.	During site establishment.
	14.4 Minimise the number of internal access roads created.	During site establishment and construction and ongoing during operations.
	14.5 Cross rip, topsoil and seal internal access roads no longer required.	During site establishment and construction and ongoing during operations.
	14.6 Restrict vehicle speeds on unsealed internal access roads to 30km/hr.	Continuous.
	14.7 Water internal access roads staging and hardstand areas at a rate of 2L/m ² per application using the water cart.	During high vehicle activity and dry conditions
	14.8 Adopt shut-down procedures in the event of high winds.	During periods of high winds likely to result in excessive dust generation.
	14.9 Construct perimeter bunding around the processing area and plant a vegetative screen around the processing area and the eastern boundary of the extraction sites to assist in reducing air emissions.	During site establishment and construction.
	14.10 Water stockpiled materials as necessary, particularly those containing materials with elevated silt content (e.g. stockpiled VENM(b), loamy sand and associated products);	As required during extraction, processing and blending.
	14.11 Install shelters and enclosures on the screening plant and selected conveyors	During site establishment and construction.



Table A (Cont'd)
Final Statement of Commitments

Page 15 of 16

Desired Outcome	Action	Timing
14. Air Quality (Cont'd)		
Site activities are undertaken without exceeding DECC air quality criteria or adversely impacting on surrounding receivers.	14.12 Install water sprays to control dusts generated during screening and dry processing.	During processing and blending.
	14.13 Undertake progressive rehabilitation / stabilisation of available areas of disturbance (eg. finalised sections or backfilled areas of the extraction ponds).	As areas become available.
	14.14 Clean accumulated tracked road mud, dry dusts, sand or spillages on Altona Drive using a street sweeper.	As required.
	14.15 Cover product trucks loads to prevent wind-borne losses and spillages.	Continuously for <u>all</u> product trucks.
	14.16 Prepare an air monitoring program to ensure that DECC air quality goals for dust (TSP, PM ₁₀ and deposited dust) are met.	Prior to commencement of operations.
	14.17 Undertake monitoring in accordance to the DECC document " <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> " (DECC, 2005), and more specifically, in accordance with AS 2922-1987 " <i>Ambient Air – Guide for the Siting of Sampling Units</i> " (NSW DECC Method AM-1) and AS 3580.9.6-2003 " <i>Particulate Matter – PM₁₀ – high volume sampler with size-selective inlet</i> ".	During monitoring.
	14.18 Annually review the dust monitoring program to ensure that the data being collected is meaningful.	Annually.
	14.19 Ensure the screening and blending plant does not exceed a daily <u>average</u> processing rate greater than 100tph.	During screening and blending.
15. Aboriginal Heritage		
Site activities are undertaken without impacting upon any known Aboriginal heritage items.	15.1 Invite any Aboriginal stakeholders to observe during the burying of the pipelines within the northern pipeline corridor.	During installation of northern pipeline.
	15.2 Stop works at and adjacent to any Aboriginal sites or relics, if found.	During site establishment, construction or operational works.
	15.3 Contact the regional archaeologist of the Coffs Harbour DECC and relevant Aboriginal Stakeholders if any Aboriginal sites or relics, if found.	During site establishment, construction or operational works.



Table A (Cont'd)
Final Statement of Commitments

Page 16 of 16

Desired Outcome	Action	Timing
14. Aboriginal Heritage (Cont'd)		
Site activities are undertaken without impacting upon any known Aboriginal heritage items.	15.4 Receive authorisation from the DECC and Tweed Byron LALC prior to proceeding with any works in the vicinity of any identified Aboriginal sites or relics, if found.	During site establishment, construction or operational works.
	15.5 Prepare a simple Cultural Heritage Information booklet for use in induction of employees and contractors.	Prior to commencement of site establishment.
	15.6 Undertake agency consultation with Aboriginal representatives in relation to the ongoing management of identified items of Aboriginal heritage.	In the event items of Aboriginal heritage are identified within the Project Site.
16. Visibility		
Reduced visual amenity impacts upon surrounding landholders and the local community.	16.1 Surround the processing area by a 3m high bund planted with native shrub species.	During site establishment.
	16.2 Plant a visual screen between the eastern extent of the extraction sites and Tweed Coast Road providing visual screening from motorists on Tweed Coast Road.	During site establishment.
	16.3 Progressively rehabilitate the Project Site such that non-vegetated areas would be minimised.	As areas become available.
	16.4 Maintain the Project Site in a clean and tidy condition at all times.	Continuous.
	16.5 Implement air quality controls (see Commitment No. 14).	Ongoing.
	16.6 Position and direct floodlights or other lighting to minimise light emissions, with lighting not required at any given time not used.	Ongoing.



This page has intentionally been left blank

