# ENVIRONMENTAL COMPLIANCE REPORT 2

## Frederickton to Eungai
## Pacific Highway Project

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# Glossary

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| CEMP | Construction Environmental Management Plan |
| CIP | Community Involvement Plan |
| Compliance audit | Verification of how implementation is proceeding with respect to a construction environmental management plan (CEMP), the conditions of approval and all other relevant licences and approvals. |
| Condition | A condition in the NSW Minister for Planning's planning approval |
| Construction | Includes all work in respect of the project other than survey; acquisitions; fencing; investigative drilling or excavation; building/road dilapidation surveys; minor clearing (except where threatened species, populations or ecological communities would be affected), establishing site compounds (in locations meeting the criteria of ancillary facilities in the Conditions), or other activities determined by the Environmental Representative to have minimal environmental impact (e.g. minor access roads, minor adjustments to services/ utilities, etc.). |
| COUR | Commitment, obligations, undertaking or requirement from the environmental assessment or approval documents. |
| Director-General | Director-General of the NSW Department of Planning and Environment (or delegate) |
| DPI - NOW | NSW Department of Primary Industries – NSW Office of Water |
| DP&I | NSW Department of Planning and Infrastructure (now DP&E) |
| DP&E | NSW Department of Planning and Environment |
| DWE | NSW Department of Water and Energy[1] |
| Ecological Sustainable Development | Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992). |
| Environmental Incident | An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment. |
| Environmental Policy | Statement by an organisation of its intention and principles for environmental performance. |
| EPL | Environmental Protection Licence |

[1] In July 2009 the NSW government issued Administrative Orders abolishing the Department of Water and Energy (DWE) and establishing two new agencies to manage the functions of the former Department.

| | |
|---|---|
| Environmental Representative (ER) | A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance. Their specific functions are defined in Condition 6.1. |
| Environmental Target | Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives. |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| ERG | Environmental Review Group. Includes representatives from Roads and Maritime, the construction contractor, public authorities and other stakeholders. Meetings are generally held monthly. The ERG is chaired by the ER. |
| EWMS | Environmental Work Method Statement |
| Fisheries, NSW | NSW Fisheries (now Primary Industries – Fisheries and Aquaculture) |
| OEH | NSW Office of Environment and Heritage<br>Throughout this report, OEH means any references to:<br>• DECCW<br>• DEC.<br>• DECC.<br>• NPWS.<br>• The Manager CPPD Central Directorate.<br>• Director-General of National Parks and Wildlife. |
| Non-conformance | Failure to conform to the requirements of project system documentation including a CEMP or supporting documentation |
| Pollution incident | "Pollution incident" as defined in Protection of the Environment Operations Act 1997 (NSW) means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise. |
| RTA/ Roads and Maritime | Roads and Traffic Authority of NSW (now known as Roads and Maritime Services). |

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# 1
# Introduction

## 1.1 Background

On behalf of the Australian and NSW governments, Roads and Maritime Services of NSW (Roads and Maritime), formally known as the Roads and Traffic Authority of NSW, is upgrading the Pacific Highway. The Pacific Highway ('the highway') between Hexham in New South Wales (NSW) and the Queensland border has sections with inadequate traffic capacity, and has a poor record for road accidents and fatalities. The nature and condition of the highway varies considerably, from high quality dual carriageways to stretches of two-lane single carriageway. At a number of locations there are extensive delays during peak periods, especially during the summer holidays.

The Frederickton to Eungai project (the F2E Project) forms the northern section of the Kempsey to Eungai Pacific Highway Upgrade project. The upgrade of the Pacific Highway between Kempsey and Eungai involves the construction and operation of approximately 40.8 kilometres of four-lane divided carriageway highway from south of Kempsey to Eungai.

The F2E Project lies mainly within the Kempsey local government area, with a short length located within the neighbouring Nambucca local government area. The F2E Project will provide 26.5 kilometres of new dual carriageway. Construction commenced during September 2013. **Figure 1-1** shows the location of the Project.

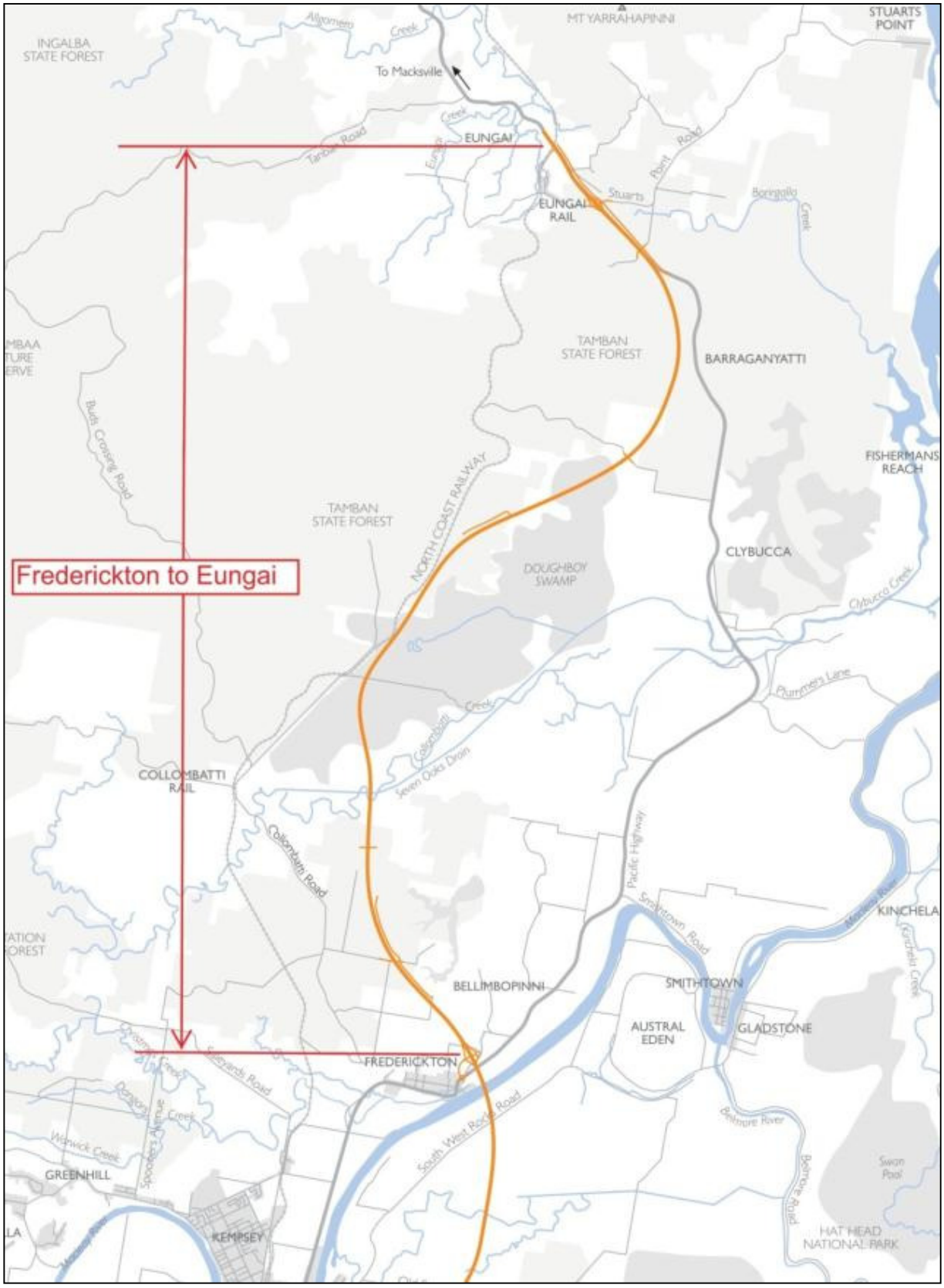



**Figure 1-1 Frederickton to Eungai Project Area**

## 1.2 Project approval

On the 5 December 2006 the Kempsey to Eungai Pacific Highway Upgrade project was declared by the Minister for Planning to be a project to which Part 3A of the Environmental Planning and Assessment Act 1979 applies. An Environmental Assessment was prepared and placed on public exhibition from the 1 August 2007 to 31 August 2007. Following consideration of submissions made during the exhibition period, the submissions report, including changes to the proposal following consideration of submissions, was submitted to the then Minister for Planning seeking approval. Approval of the Project was granted on 10 July 2008.

The Frederickton to Eungai project (the Project) forms the northern section and second stage of the Kempsey to Eungai Pacific Highway Upgrade project. The upgrade of the Pacific Highway between Kempsey and Eungai involves the construction and operation of approximately 40.8 kilometres of four-lane divided carriageway highway from south of Kempsey to Eungai.

The Kempsey to Eungai - Upgrading the Pacific Highway: Environmental Assessment (2007), Section 7.3.2, proposed that the project would be constructed either in its entirety or in stages. The Environmental Assessment identified that the most probable initial stage to be constructed was the southern section, which would start south of Kempsey and join the existing highway north east of Frederickton, as this section has higher priority in terms of traffic safety, travel efficiency and amenity to residents. In May 2009 the Federal Government provided $618 million under the Building Australia Fund to construct the southern section of the approved Kempsey to Eungai upgrade project, (the Kempsey Bypass), starting south of Kempsey and joining the existing Pacific Highway north-east of Frederickton. The length of this section of works is approximately 14.5 kilometres (or approximately 35%) of the total length of the Kempsey to Eungai upgrade project. This section of the Kempsey to Eungai project was opened to traffic during March 2013.

The Kempsey and Eungai Pacific Highway Upgrade Environmental Assessment (the Project EA) was publicly exhibited in August 2007 for a period of 30 days. Following public exhibition, submissions from stakeholders were received and addressed by Roads and Maritime in the Submissions Report which was lodged with the Director-General in March 2008.

## 1.3 Commencement of construction

Construction of the project commenced on the 4 September 2013, following approval of the F2E Construction Environmental Management Plan (CEMP). The CEMP included the proposed construction commencement program and was approved by Department of Planning and Infrastructure on the 19 August 2013.

## 1.4 Purpose of this report

In accordance with Condition 4.1 of the Minister for Planning's approval, Roads and Maritime shall submit reports to the Director-General that consider construction environmental performance and compliance with the project approval. The first Construction Compliance

Report, which was submitted to the Director-General on 15 April 2014, reported on the first six months of construction. This report covers the second six month period of construction from the 4 March - 3 September 2014.

**Table 1-1** outlines the information required by the Compliance Tracking Program as outlined Condition 4-1, and the relevant location in this report where the requirements have been addressed.

**Table 1-1 Requirements for six monthly compliance report**

| Cond. 4-1 | Requirement | Where presented in this report |
|---|---|---|
| a) | Provisions for periodic review of the compliance status of the project against the requirements of this approval (specified under condition 1.1c); | This report |
| b) | Provisions for the notification of the Director General prior to the commencement of construction and prior to the commencement of operation of the project; | Section 1.2 |
| c) | Provisions for periodic reporting of compliance status to the Director General during construction; | This Report |
| d) | A program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing; | Section 6 |
| e) | Mechanisms for recording incidents during construction and actions taken in response to those incidents; | Section 6 |
| f) | Provisions for reporting environmental incidents to the Director General during construction; and | Section 6 |
| g) | Mechanisms for rectifying any non-compliance identified during environmental auditing or review of compliance. | Section 6 |

Roads and Maritime shall make these reports publically available on the project website and provide copies to the NSW Office of Environment and Heritage (OEH), Environmental Protection Authority (EPA), Primary Industries – Fishing and Aquaculture, relevant councils, and any other government department nominated by the Director-General.

## 1.5 Construction activities and progress during reporting period

**Table 1-2** outlines the key construction activities either commenced or completed within the reporting period.

**Table 1-2 Summary of construction activities**

| Activity | Progress |
|---|---|
| Environmental Controls | • Substantial Stage I clearing completed. Fence line and other minor vegetation clearing ongoing.<br>• Timber stockpiling and mulching ongoing. Mulch stockpiles have been established at the Southern Compound and Cooks Lane main compound to store mulch for reuse during landscaping.<br>• Clean water diversion drains, sediment basins and temporary cross drainage ongoing are being installed prior to topsoil stripping and bulk earthworks across the site.<br>• Cut and fill batters are being progressively topsoiled and hydro-mulched. |
| Fencing | • Property boundary fencing is ongoing.<br>• Fauna fence (general floppy top and phascogale fencing) installation is following closely behind topsoil stripping with priority on completion along the top of cuts. |
| Soft Soil Fill Areas (Floodplains) | • Surcharge material has been placed on all soft soil fill areas. This material will be left in place for 1 – 6 months to assist in the settlement of the fill. Surplus surcharge material will then be removed prior to final earthworks and paving.<br>• Approximately 80% of the D7 and D9 longitudinal drains have been constructed across of the floodplain areas. |
| Bulk Earthworks | • Bulk earthworks is approximately 70% complete. A significant portion of the remaining earthworks area associated with the Stage II works that will occur in the northern end of the project following the traffic switch.<br>• The remaining bulk earthworks across Stage I areas consists of placement of select and upper zone material.<br>• The bulk haul fleets of moxies and scrapers are being reduced in numbers. |
| Fauna underpasses and culverts | • Construction of the seven fauna underpass culverts was completed during this reporting period. Temporary vehicle access tracks have been removed around six of the seven fauna underpass culverts. |
| Other cross drainage | • All cross drainage in Stage I has been completed with the exception of pipe culverts in the soft soil settlement fills. At these remaining locations temporary steel pipes have been installed. |
| Long drainage | • Long drainage installation has commenced ahead of paving activities. The long drainage commenced in along Access Road C ahead of the paving trial. The crews have now moved to the southern paving runs from Frederickton to Kemps Access. |
| Bridges | • Bridge construction is ongoing including piling, abutment works.<br>• Girders have been installed on the Mill Lane bridge. |

| Activity | Progress |
|---|---|
| Access Roads | • All access tracks have been completed and are operational. Access Road A connects Quarry Road to the eastern side or Raymond's Lane in the southern zone.<br>• Access Road B connects Barraganyatti Hut Road to the western side of Nirvana Lane.<br>• Access Road C / Stuarts Point Road is also complete.<br>• Macleay Valley Way is near completion. Traffic will be switched from the existing Pacific Highway to Macleay Valley Way in October. |
| Property Adjustments | • Property adjustment works are ongoing including construction of access tracks, new property access points and cattle yards. |
| Paving | • A paving trial was completed along the south bound off ramp of the Stuarts Point Interchange. This section of works will incorporated into the main northern traffic switch. |
| Batch Plants | • The Cooks Lane batch plant was established and used for the paving trial.<br>• The Southern Frederickton Batch plant site was approved and set up of the batch plant commenced during the reporting period. |

# 2
# Consents, licenses and approval

## 2.1 Statutory approvals

Table 2-1 lists the statutory approvals in effect during the reporting period.

**Table 2-1 Statutory approvals**

| Approvals | Authority | Holder | Date of issue | Expiration date |
|---|---|---|---|---|
| Part 3A Project Approval, as modified twice in 2010 and once 2012. | DP&E | Roads and Maritime | 10/07/08 | 18/07/18 |
| Environment Protection Licence 20318<br>- Scheduled activities – Crushing and grinding, road construction and extractive industries. | EPA | TPL | 28/08/13 | Annual renewal until surrendered |
| Surface Water Extraction License – Dam 1 Raymonds Lane (30PE002470) | DPI - NOW | TPL | 30/07/13 | 30/07/2014 |
| Surface Water Extraction License – Dam 2 Seashore Lane (30PE002472) | DPI - NOW | TPL | 16/09/13 | 16/09/2014 |
| Surface Water Extraction License – Macleay River (30PE002474) | DPI - NOW | TPL | 29/11/13 | 29/11/2014 |
| Groundwater Water Use Permits (Cooks Lane x 2, Raymonds Lane, Seashore Lane, Stuarts Point Road, Mango Farm, Seven Hills Road) (No 30BL207084) | DPI - NOW | TPL | 8/11/13 | 8/10/2018 |
| s37 capture and relocate native fish species and other aquatic organisms (Permit No P13/0054-1.0) | DPI - Fisheries | TPL (P. Monsted) | 30/07/13 | 30/07/2018 |
| Animal Research Authority - Ecological survey, salvage and monitoring program (TRIM132/1593) | OEH | TPL (P. Monsted) | 6/05/13 | 6/05/2016 |

## 2.2 Key documents and outcomes required by statutory approvals

The statutory approvals require Roads and Maritime to prepare documents and facilitate outcomes. Key documents and outcomes are summarised below.

**Table 2-2 NSW Minister for Planning Part 3A project approval**

| Reference | Requirement | Status | Comment |
|---|---|---|---|
| Condition 2.5 | Complete further flood modelling during detailed design and submit a hydrological mitigation report. | Complete | The Hydrological Mitigation Report was approved by the Department of Planning and Environment on the 21 February 2014. |
| Condition 2.8 | Construct reasonable and feasible fauna management measures to facilitate safe passage and encourage fauna movements across the project at key locations. | Ongoing | Design completed in consultation with EPA. Construction of fauna underpasses substantially progressed during this reporting period. |
| Condition 2.9 | Investigate the option of translocation of the threatened species *Maundia triglochinoides*. | Complete | A translocation investigation report for *Maundia triglochinoides* was prepared by Lewis Ecological Surveys (dated March 2013). This report was prepared in consultation with EPA and found that translocation was not reasonable or feasible. This report was submitted to the Department of Planning and Environment on 13 May 2013. |
| Condition 2.10 | Develop a Biodiversity Offset Strategy. | Complete | The Biodiversity Offset Strategy (April 2010) was conditionally approved by DP&E on the 14 May 2010. |
| Condition 2.11 | Develop a Biodiversity Offset Package | Ongoing | Development of the Biodiversity Offset Package is ongoing. Roads and Maritime have an extension for submission from the Department of Planning and Environment until 30 September 2014. |
| Condition 2.20 | Prepare and obtain approval for a review of the operational noise mitigation measures. | Complete | The Operational Noise Management Plan was approved by the Department of Planning and Environment on the 2 May 2014. |
| Condition 2.29 | Criteria for determining suitable locations for ancillary facilities | Ongoing | Assessment and approval of ancillary facilities continued during this reporting period (refer **Section 2.3**). |
| Condition 5.2 | Develop a Community Communication Strategy. | Complete | The Director-General approved the Strategy on 19 August 2013. |
| Condition 6.1 | Obtain approval for the Environmental Representative (ER). | Complete | The Director General approved Mr Murray Curtis as the ER on the 16 December 2009 for the Kempsey to Eungai Project. |
| Condition 6.3 | Prepare and obtain approval for a Landscape Management Plan. | Complete | The Urban Design and Landscape Management Plan was approved by the Department of Planning and Environment on the 2 June 2014. |

| Reference | Requirement | Status | Comment |
|---|---|---|---|
| Condition 6.5 | Development and submission of a Construction Environmental Management Plan and associated sub plans. | Complete | The Director-General approved the F2E CEMP on the 19 August 2013. |

## 2.3 Consistency Review

Under section 115ZI (2) of the EP&A Act, Roads and Maritime may request the Minister to modify the Minister's approval of a State significant infrastructure project. Roads and Maritime is not required however to obtain the Minister's approval for a modification if the project, as modified, will be consistent with the Minister's approval.

Three questions are used to assist Roads and Maritime in determining whether the proposed activity can be considered consistent with the Minister's approval:

- Are the proposed works being carried out as part of an approved project? E.g. Are works "generally in accordance with" project documents and plans, where relevant?
- Is the modification such a radical transformation of the project as a whole, as to be, in reality, an entirely new project?
- Are the proposed works a modification that is considered "consistent with" the project as approved? This will require the work in question to have environmental impacts contemplated by the approval (such as EA / EIS, CEMP, spoil management plan, heritage management plan or the like), including documents forming part of the approval, or as a minimum, very few additional impacts.

Depending on the nature of the proposed change will determine the level of environmental assessment and justification and weather the Environmental Representative will be required to review and approve the works in addition to Roads and Maritime.

Table 2-4 provides a summary of design changes and activities were approved under the consistency review framework.

**Table 2-3 Consistency reviews approved during the reporting period**

| Title | Description | Date approved |
|---|---|---|
| Southern Site Compound - Amendment Batch Plant | Amendment to an existing consistency review to include a batch plant at the southern (Frederickton) site compound. | 19/08/2014 |
| Detailed Design Refinements - Integrated Earthworks Mounds | A design change to accommodate surplus excavated materials within the earthworks mounds within the project corridor. | 20/03/2014 |
| Thurgood Lane Upgrade | Upgrade of Thurgood Lane to connect to Stuarts Point Road. | 19/06/2014 |
| Macleay water pipeline | Minor infrastructure to facilitate water extraction from the Macleay River. Has not been implemented to date. | 26/07/2014 |
| Saul's Rock Crushing | An ancillary facility adjacent to the project corridor | 12/08/2014 |

| Title | Description | Date approved |
|---|---|---|
| Anc. Facility | that will be used for crushing of surplus bridging rock to form verge. | |
| Stockpile No. 1 (opp. Southern compound) | Re-use of an pre-existing (KBA) stockpile site for storage of mulch | 13/06/2014 |
| Frederickton Interchange Under-bore | An horizontal direction drill to provide a potable water source to the southern batch plant. | 3/09/2014 |
| Additional State Forest Fencing | The installation of additional cattle proof boundary fence along two sections of state forest | 27/08/2014 |
| Backfill of Ex-Schroder Farm Dam | Backfilling a disused farm dam to allow for the installation of boundary fence. | 18/06/2014 |
| Couch Property Access Track | Construction of a new access track to a private property. | 23/07/2014 |

## 2.4 Construction environmental management plan

Condition 6.5 requires the development of a Construction Environmental Management Plan (CEMP) and associated sub plans. The CEMP and sub plans must be reviewed by relevant public authorities and approved by the Director-General of the NSW Department of Planning and Environment. The Director-General approved the F2E CEMP on the 19 August 2013. Records detailing relevant consultation with public authorities are provided in Appendix A2 of the F2E CEMP.

During construction the CEMP may need to be amended however, no amendments were required during the reporting period. In accordance with Section 9 of the CEMP – Review and Improvement, the executive review of the CEMP is being completed in September 2014 including a review of:

- Effectiveness of environmental management documentation implementation.
- Management effectiveness.
- Potential improvements to the environmental management documentation.
- Adequacy of resources.
- Findings of audits.
- Environmental objectives and targets.
- Environmental performance.
- Compliance with legal and other requirements.
- Critical non-conformance or repeated non-conformances.
- Organisation changes.
- Effectiveness of training and inductions.

Minor amendments required as a result of the CEMP review (or other times) may be approved by the ER; the Director-General must approve major amendments or revisions.

## 2.5 Compliance with approvals

**Appendix 1 and 2** of this report present the conditions of the NSW Minister for Planning project approval and the Environmental Protection Licence (EPL) and show the status of compliance with these approvals.

## 2.6 Compliance management system

Roads and Maritime and TPL have identified relevant Commitments, Obligations, Undertakings and Requirements (COURs) in the environmental assessment and approval documents for the project. The COURs are held in a database and assist Roads and Maritime and TPL to manage compliance and contractual risks.

Reporting templates in accordance with the compliance tracking program have been created for COURs from the project approval and Environmental Protection Licence. The compliance status of these COURs is updated by Roads and Maritime and TPL every three months and is linked to regular audits carried out for the project. Depending on each COUR's requirement, some were marked as closed (i.e. addressed) during the detailed design or pre-construction periods; others will remain open until the operation phase.

# 3
# Implementation and effectiveness of environmental controls

The environmental assessment, subsequent environmental assessments and approved construction management documentation outlined a comprehensive suite of environmental controls and management practices to minimise the project's impacts on the environment. Table 3-1 provides a summary of the key environmental controls implemented during this reporting period and their effectiveness.

## Table 3-1 Key environmental controls and their ongoing effectiveness

| Environmental issue | Environmental control | Effectiveness of environmental control |
|---|---|---|
| Landform, geology and soils | • Avoidance and management of Acid Sulfate Soils. | • Design and construction techniques to avoid intercepting Acid Sulfate Soils include surcharging fills in areas of probably ASS to avoid excavation and formation of D7 and D9 swale drains above the natural soil level.<br>• Temporary Acid Sulfate Soil Treatment Areas (ASSTAs) have been established at Cut 8, Cut 13, Fill 15, Fill 16 and Fill 19 to treat ASS excavated from bridge and culvert sites. ASS has been lime treated and then incorporated into the earthworks on site. |
| | • Preparation and implementation of Progressive Erosion and Sedimentation Control Plans (PESCP).<br>• Engagement of a project Soil Conservationist to review the planning and implementation of PESCPs Progressive stabilisation of disturbed areas | • The G38 hold point ensures that a PESCP is prepared for all areas prior to the commencement of ground breaking activities.<br>• Erosion and sediment controls are installed as soon as practicable following clearing and prior to topsoil stripping.<br>• The focus remained on completion of critical erosion and sedimentation controls such as clean water diversion drains, temporary cross drainage and sedimentation basins have been prioritised during the reporting period.<br>• Progressive topsoiling / hydromulching of batters has greatly reduced erosion potential across the project. The project soil conservationist has been heavily involved in both erosion prevention and sedimentation control measures implemented at the site. |
| Hydrology and flooding | • Flood modelling to be implemented including modelling for temporary work activities. | • All temporary works including temporary bridge construction platforms and haulage routes were designed in consideration of potential flood conditions. Contingency plans shall be implemented should the project experience high rainfall events and subsequent flooding conditions.<br>• Construction of cross drainage has been completed as early as possible including installation of headwalls and scour protection. These works were completed in most waterways with the exception of the some soft soil settlement areas.<br>• Temporary creek crossing have been removed as soon as construction plant and vehicles could traffic over permanent culvert. Only two temporary access tracks around culverts remain in place. |

| Environmental issue | Environmental control | Effectiveness of environmental control |
|---|---|---|
| Flora and fauna | • Delineating sensitive areas and vegetation to be protected with highly visible barriers prior to and during clearing operations.<br>• Early installation of fauna exclusion fencing. | • Surveyed boundaries (limit of clearing) of the nominated clearing areas and vegetation continue to be protected by strip flagging, effectively delineating the work zone and clearing footprint. This has been maintained throughout the reporting period.<br>• Early installation of fauna exclusion fencing through areas of earthworks cuts has been prioritised prior to the commencement of bulk earthworks. This reduces the safety risk for workers installing fence above high batters and also provides the fencing over significant portions of the project prior to the commencement of the bulk haul fleet. |
| Water quality | • Utilisation of dry conditions to complete works in drainage lines.<br>• Construction of clean water diversion drains prior to site grubbing and topsoil stripping.<br>• Construction of sediment basins ongoing (85)<br>• Maximise reuse of captured water for construction activities.<br>• Water treatment and management in sediment basins.<br>• Appropriate storage and use of fuels and chemicals. | • Dry conditions experienced throughout the reporting period were utilised to expedite the construction of culverts and fauna underpasses.<br>• Water diversion around construction sites has been maximised to reduce site run-on water and the need for treatment.<br>• Permanent culvert works including head walls and scour protection is complete in a majority of waterways providing stable cross drainage through the site.<br>• Maximising diversion of site water to sediment basins. With bulk earthworks as one of the main activities occurring this period, the profile of the cuts and fills was constantly changing. The inspections with the Soil Conservationist ensured that every opportunity to direct water to basins was perused.<br>• Basins are pre-treated with gypsum to flocculate clay particles to <50mg/L total suspended solids prior to discharge from site. |

| Environmental issue | Environmental control | Effectiveness of environmental control |
|---|---|---|
| Air quality | • Use of dust suppression measures including water carts.<br>• Early stabilisation of exposed surfaces including cover crop seeding.<br>• Reduced speed limits for light vehicles during dry conditions in high dust areas.<br>• Highly trafficked areas such as compounds and site entry/exit points treated with a bitumen spray-seal or similar to reduce dust generation. | • Regular wetting of earthworks across the project ensured dust emissions were minimised and generally well contained to within site boundaries.<br>• Topsoiling and hydro-mulching of cut and fill batters and spoil mounds occurring progressively to stabilised exposed areas.<br>• Temporarily cease works or limit access in areas where wetting could not suppress dust sufficiently.<br>• Monitoring of mud-tracking continued during the reporting period with street sweepers implemented to clean road surfaces when mud-tracking was identified. |
| Visual amenity | • Implement urban design principles established in the Environmental Assessment<br>• Disturbed areas to be progressively revegetated. | • All construction activities are being conducted and implemented in accordance with Roads and Maritime approved urban and landscape designs.<br>• Excess construction materials including excess topsoils and/or spoil have been re-incorporated into the overall project corridor design to minimise offsite disposal and any associated reduction in visual amenity.<br>• Visual amenity impacts across the project are being minimised during construction where possible. In some locations the early implementation of landscaping and hydromulching works has softened some of the hash heavy construction related visual impacts. This will continue as the project progresses, and landscape features establish and develop. |
| Noise and vibration | • Standard construction hours.<br>• Assessment and consultation procedures for out of works work.<br>• Ongoing monitoring and implementation of additional mitigation as deemed warranted – e.g. position equipment away from sensitive receivers, respite periods. | • Out of hours construction activities have been carried out in accordance with the noise and vibration management plan, Environmental Protection Licence and any associated approvals.<br>• Acoustic assessments including modelling of predicted impacts has been completed for proposed out of hours works. Community notification has also been completed for agreed and critical out of hour's works. |

| Environmental issue | Environmental control | Effectiveness of environmental control |
|---|---|---|
| Heritage | • Implementation of the Heritage Management Plan<br>• Site monitoring<br>• Training and awareness program.<br>• Preconstruction identification, temporary or permanent fencing | • Heritage management training has been incorporated into the Project Induction training delivered for all site personnel.<br>• To minimise risk to unknown Aboriginal cultural material/heritage, additional archaeological assessments for any new work areas have been completed – refer to Section 2.3 for a list of activities and/or new work locations. This incorporated additional site archaeological surveys where necessary.<br>• Onsite monitoring of KE14 and KE15 in accordance with Roads and Maritime SoC AH7 was completed during the reporting period. |
| Traffic | • Traffic control plans, including safety zones, diversions, access control, maximum queue lengths during road occupancy.<br>• Community notification (advertisements, letter drops, road signage, radio announcements). | • Traffic control plans have been prepared and are in place. Community notification and weekly traffic alerts occurred throughout the reporting period. |

# 4
# Environmental monitoring

Monitoring of rainfall, flora and fauna, background air (dust) and surface water quality commenced in 2013 and has continued since the commencement of construction. This section details key monitoring results and provides an analysis of the findings for the reporting period.

## 4.1 Rainfall

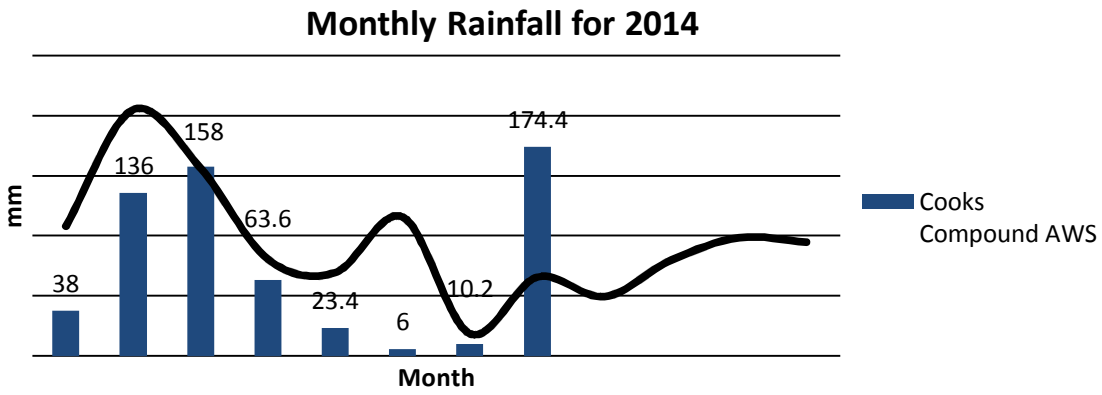
Rainfall is measured via automatic weather station at the main compound, as well as the two automatic rain gauges for the northern and southern compounds. Data from the weather station and rain gauges is available in real time via a public site webpage (http://new.mhl.nsw.gov.au/users/ThiessAWS/) with full details available via a secure online site.

Rainfall data is important in responding to rain events in terms of sediment basin management, surface water monitoring and to trigger wet weather environmental inspections. A rainfall event of 10 mm triggers wet weather surface water monitoring.

Rainfall in the March – September 2014 reporting period has generally been below the monthly average by comparison to the Bureau of Meteorology's Collombatti (Benbullen) weather station (number 59068) (refer to **Table 4-1** and **Figure 1**).

**Table 4-1 Monthly Rainfall Summary**

| Month | Northern Eungai compound | Cooks Lane Collombatti (central) compound | Southern Frederickton Compound | BoM Collombatti weather station (number 59068) |
|---|---|---|---|---|
| March | 156.7 | 191.2 | 158 | 127 |
| April | 80.7 | 49.8 | 63.6 | 58.8 |
| May | 69.6 | 18 | 23.4 | 22.2 |
| June | 116 | 20.8 | 6 | 9.8 |
| July | 18.7 | 14 | 10.2 | 11 |
| August | 65.8 | 185.8 | 174.4 | 171.8 |
| **TOTAL** | **507.5** | **479.6** | **435.6** | **400.6** |




Average based on the monthly average for the BoM Collombatti (Benbullen) weather station (number 59068) (http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_nccObsCode=139&p_display_type=dataFile&p_startYear=&p_c=&p_stn_num=059068 )

**Figure 4-1 Monthly Rainfall at Cooks Lane (central) compound**

For the months of March to August 2014 inclusive, total rainfall across the site ranged from 400 in the Southern end of the Project Area to 479 at the northern limit with. However, approximately 40% of the period's rainfall was received in two rainfall events in August.

There were only four weather systems during the reporting period that provided rainfall above the 5 day design rainfall events for the project's sediment basins (46mm for an 85$^{th}$ percentile basin). These events occurred on the 2 March, 21-28 March, 16-17 August and 23-28 August.

## 4.2 Air quality

Thiess undertake dust monitoring in accordance with the Deposited Matter - Gravimetric method. This method has been widely used in Australia for over 40 years. The method involves collection of particles that settle from the ambient air in a vessel which are retained with any rainwater which are measured in g/m$^2$/month.

Ambient dust deposition rates have been monitored since April 2013 at six (6) general locations along the alignment. Two deposition gauges were installed at each location to provide a test (impact) sample and a control (background) sample. Test gauges are located close to the alignment near sensitive receivers to measure the construction impacts. Control sites at located greater distance from the site to measure seasonal changes in the background air quality. **Appendix 4** shows the dust sampling locations.

The goals adopted for the project for acceptable dust levels are:

- **+ 2 g/m$^2$/month - max. increase above background** (total insoluble and ash content) which was calculated to be 3 g/m$^2$/month for ash and 2.6 g/m$^2$/month for total insoluble for the September 2013 – August 2014 period based on an average of all control samples during the 12 month period.
- **4 g/m$^2$/month - max. total deposited dust level** (total insoluble and ash content).

Goals are based on annual averages.

Despite the dry conditions experienced throughout the reporting period, dust levels were maintained below the 4g/m$^2$/month total deposited dust level goal levels at all sites with the exception of one result - DDG4A in March for total insoluble solids. The corresponding ash content was however only 1.6 g/m$^2$/month indicating the insoluble solids exceedance was non-construction related.

The average background + 2 g/m$^2$/month - max. was also exceeded on three occasions:

- Frederickton (DDG1A) – ash content in May,
- Cooks Lane (DDG 3A) - total insoluble solids in July, and
- Nirvana Lane (DDG4A) - total insoluble solids and ash content in May.

These exceedance were minor at 0.1 to 0.2 g/m2/month above the goal level.

Across the project, dust mitigation was actively pursued. Mitigation measures include:

- Frequent use of water carts during dry periods.
- Minimising drop distances when tipping loads.
- Sealing exit roads.
- Compacting high traffic areas and haul routes within site.
- Reduced speed limits and use of some machinery in high wind conditions.
- Stabilising stockpiles and exposed areas with sterile cover crop and native seed species when inactive for long periods (greater than two weeks).
- Early progress on final landscape/stabilisation works (hydro-mulching).

**Hydro-mulched earthworks mounds**

**Compacting high traffic areas**

**Water truck**

## 4.3 Water quality

**Surface water**

Thiess Pty Ltd monitored water quality for three (3) parameters (pH, turbidity and electrical conductivity) at seven (7) sites upstream and downstream of the project alignment using a water quality monitoring probe (Yeo-Kal 615 and Yeo-Kal 611). During each monitoring event, the upstream is used as an indicator of the background water quality in the waterway. Results were compared against pre-construction figures as well as comparisons between sites upstream and downstream of construction. The water quality of creeks and rivers has no defined parameters in the EPL. However, decreases in water quality greater than 10% between upstream and downstream are investigated and reported on, on a monthly basis.

A minimum of one wet and one dry sampling event is aimed for each month. A 'wet' represents a sample taken when there has been an active surface flow of water through the creek system, generally as a result of rainfall greater than 10mm in a 24hr period. A 'dry' represents a sample taken when there is no active flow through the creek system. Prevailing weather conditions however do not always provide conditions suitable to collect wet samples. A result of the surface water monitoring is provided in **Appendix 4**.
As a result of the low rainfall experienced throughout the reporting period, wet samples were not possible in most waterways until August. During this period the unnamed waterway north of Frederickton (Fill 11), Collombatti Creek, Seven Oaks Drain, Wizzenbucca Creek, Johnsons Creek and Barraganyatti Creek all ran dry. Borirgalla Creek retained pooled water, however there was no connection through the site for much of the reporting period.

Following rainfall in August, all seven waterways experienced flow allowing for wet sampling events to be completed. During this event, water quality indicated that construction works in the channel were not having an adverse impact on water quality. For the unnamed waterway north of Frederickton (Fill 11), Collombatti Creek, Seven Oaks Drain, Wizzenbucca Creek and Johnsons Creek the up and downstream water quality parameters were within 10% variation. The downstream water quality in Barraganyatti Creek and Borirgalla Creek exceed the 10% variation during the August wet sampling period, however this impact was related to the overtopping of sediment basins following +46mm of rainfall.

**Groundwater monitoring**

Groundwater monitoring was undertaken from July 2013 at five (5) locations. However as the bores were located within the future footprint of the road alignment, they have all now been removed by construction works.

A review of the *Geotechnical Interpretation Report and Earthworks Design (Design Package GT002)* was completed to determine if additional groundwater bores were warranted. The geotechnical report provides an assessment of the depth of the groundwater and identifies where cuts were likely (or possible) to intercept the groundwater resulting in seepage. The study also investigated the registered groundwater bores (extraction wells) within 500m of the route in order to assess the risk of impacting licensed groundwater bores (extraction wells).

Based on groundwater level in the cuts and the proximity of surrounding groundwater bores, the proposed cuts would not be expected to have any measureable impact on local or regional groundwater systems. There are also no identified swamp areas above the level of

the proposed cuts that would be impacted. As such, no new groundwater bores have been installed to monitoring groundwater levels. This decision was made in consultation with the Environmental Review Group (ERG).

**Sediment basins releases**

Seventy-two (72) of the eighty five (85) basins have been constructed on the project that are designed to capture runoff from the projects alignment before being allowed to discharge off site, pending water quality limits as set out in the EPL. The water quality limits refer to pH, turbidity and the presence of oils and greases.

There has been number of discharge events (242) and of basin overtopping events (106) throughout the construction phase of the project and these releases have been in accordance with the Projects EPL, after appropriate treatment. Refer to Appendix

## 4.4 Flora and fauna

There was no substantial vegetation clearing during this reporting period. Stage one clearing which consists of all areas excluding the western side of the existing Pacific Highway north of Barraganyatti Hut Road, was substantially completed in the first Six Month reporting period. Stage two clearing is programmed to commence in September 2014. Minor clearing was completed along fence lines.

Construction of fauna fencing (general 'floppy-top' and phascogale fencing) substantially progressed during this reporting period. Fencing through areas of earthworks cuts has been prioritised prior to the commencement of bulk earthworks. This reduces the safety risk for workers installing fence above high batters and also provides the fencing over significant portions of the project prior to the commencement of the bulk haul fleet.

Construction of the seven fauna underpass culverts were also completed during this reporting period. These culverts have internal refuge poles for Koala that were cast into the base slabs prior to the placement of side walls. Culverts in areas where Phascogale or other arboreal and scansorial species are expected also have horizontal poles to facilitate the safe passage under the road.

External furniture and habitat restoration will be completed in the next reporting period to provide linkage to the adjoining remnant vegetation. This will include extension of the horizontal poles from the culvert wing walls and incorporation of fall timber and habitat logs salvaged from the clearing phase.

Landscaping with native species of vegetation will also follow at all site prior to completion of construction.

Representatives from EPA have been consulted extensively with regard to the fauna underpasses including:

- the re-introduction of timber / fallen logs to provide ground micro-habitat features in areas where the remnant vegetation is over 20m from the culvert entrance; and
- the application of 'soft scour protection' (topsoil / jute mesh / revegetation) along the edges of culverts outlets to ensure the scour rock does not pose a barrier to fauna passage.

In accordance with the Ministers Condition of Approval 3.1 the approved ecological monitoring program: Frederickton to Eungai, was implemented during this compliance period. This program required targeted brush-tailed phascogale and glossy black cockatoo to be undertaken during autumn 2014.

The first brush-tailed phascogale monitoring event of the program was undertaken over four survey nights between 13 and 16 May 2014. The survey involved arboreal tree trapping at three sites. In total four individuals were captured at two of the three sites, Seven Hills Road (ch2250) and Tamban (ch27400). All captured individuals were females, none with young attached. These results were consistent with the performance indicator, continued presence of phascogale within the known locations. No individuals were captured within the third monitoring site, which represents potential habitat. This is consistent with baseline data. Further brush-tailed phascogale monitoring will be undertaken in autumn 2016.

The autumn 2014 glossy black cockatoo monitoring was undertaken on 22, 23 and 27 May 2014. Monitoring occurred at four broad areas of known foraging habitat. Feeding resources were identified at all four of the monitoring sites, however only one monitoring site, Seven Hills, contained any evidence of foraging. No individuals were sighted during the monitoring period. Further monitoring will be undertaken in autumn 2016.

## 4.5 Heritage

**Initial ground disturbance works at KE14, KE16**

Roads and Maritime Statement of Commitment AH7 states '*Aboriginal stakeholders will observe initial ground disturbance works / topsoil stripping and salvage artefacts identified at sites KE14, KE15, KE16 and KE42 (regardless* of the results of potential archaeological deposit investigations at each of these sites)'.

Supervision of the initial ground disturbance works for the main alignment was completed in December 2013 (within the previous reporting period). Additional works at sites were completed during this reporting period to construct a landowner access track. The extent of impacts were minimised, however could not be avoided completely. Local Aboriginal representatives from the Kempsey Local Aboriginal Land Council and Dunghutti Elders observed the initial ground disturbance works / topsoil stripping on the 3 June and the 28 July. No artefacts or items of significance were observed during the monitoring works and works in this vicinity commenced following completion of the monitoring activities.

**Potential unexpected heritage find**

A tooth was found during the drilling for installation of soft soil settlement instrumentation in Fill 19 (CH 28670, floodplain north of Johnson Creek) on the 7 March 2014 which was treated as a potential unexpected heritage find.


The drilling contractor was assessing the cuttings from the drilling at a depth of approximately 4-6m. He happened by chance to catch what appears to be a tooth. Roads and Maritime Standard Management Procedure – Unexpected Archaeological Finds was implemented including notification to the local Police Station.

Following consultation with the project's Archaeological Consultant and a forensic scientist from the University of Sydney it was confirmed that the tooth was not of human origin.

**Encroachment into an area of archaeological sensitivity at site compound**

During the previous reporting period, works were identified that had encroached into an area of archaeological sensitivity at the main site compound ancillary facility. A factual investigation report by Kelleher Nightingale Consulting Pty Ltd was being finalised during this reporting period for submission to the Department of Planning and Environment.

## 4.6 Noise and vibration

Noise and vibration monitoring was carried out in accordance with the requirements set out in the Noise and Vibration Management Plan (NVMP). Noise sensitive receivers in close proximity to the construction activities include residents immediately adjacent to the project corridor, as well as residents along Quarry Road and Cooks Lane. Appendix 4 presents detailed noise data for the reporting period. No vibration monitoring was required during this reporting period.

A diversity of construction activities have been conducted during the reporting period including those with a potential to impact upon sensitive receivers. These include bulk earthworks, on-site haulage, culvert construction, bridge construction, fencing and a paving trial.

During this six (6) months reporting period eight two (82) monitoring events were conducted consisting of:

- Periodic monthly monitoring of standard works (59);
- Response to noise related complaints (15);
- Out of hours assessments (6); and
- Spot checks of works generating high noise impact (2).

On twenty-six (26) occasions noise results were recorded above the noise management level documented in the NVMP, however the predominant noise source was generally unrelated to construction activities. Unrelated noise sources included traffic or other background sources (e.g. birds). On three (3) occasions construction activities were deemed to be a substantial contribution to the exceedance of the predicted noise level. In these cases works were ceased or modified in order to meet the specified limits. Results generally indicated elevated noise emissions however all readings were well below the Highly Affected noise objective of 75 dB(A).

Fifteen (15) monitoring events were completed in response to complaints from two residents. Fourteen (14) of these were completed near one sensitive receiver. All monitoring events confirmed that the actual noise was not exceeding the predicted or specified noise levels on these occasions.

As required by the EPA Interim Construction Noise Guideline (July 2009) and the projects CEMP, where noise management levels are predicted to exceed or actually exceed noise management levels, specific measures to minimise noise impacts are to be implemented, these include:

- Locating the batch plant and main site compound away from sensitive receivers.
- Placement of stockpiles to minimise the propagation of noise.
- Reducing the size of construction fleet in the vicinity of sensitive receivers.
- Replacing reversing alarms with quackers.
- Tool box talk sessions highlighting the need to minimise noise.
- Direct consultation with affected residents to assess actual impact.
- Assessment of plant noise and operating compliance.
- Site awareness training and environmental inductions detailing noise mitigation measures.

### Works outside of normal working hours

Six (6) permits were raised for works outside of the standard works hours during the reporting period. These works were managed in accordance with the EPL and CEMP. These events are summarized in Table 4.1.

**Table 4-2 Works outside of normal working hours**

| Description of works | EPL Classification of works | Start | Finish | Location |
|---|---|---|---|---|
| Night works for soft soil settlement instrumentation monitoring | L4.2(c)Exempt works - works <5dba | 10.3.2014 | 19.12.2014 | Fill 11, 15, 16, 17, 18 and 19 |
| Extension of works on Saturday afternoons until 5pm in construction zones 1 and 2 | L4.3 Works agreed outside standard working hours | 15/03/2014 | 31/05/2014 | Construction zones 1 and 2 |
| Extension of works on Saturday afternoons until 5pm in construction zones 3 from Bridge 12 to Hills Lane and Nirvana Lane to Eungai Rail. | L4.3 Works agreed outside standard working hours | 15/03/2014 | 31/05/2014 | Construction zones 3 from Bridge 12 to Hills Lane and Nirvana Lane to Eungai Rail. |
| Extension of works on Saturday afternoons until 5pm across all three construction zones | L4.3 Works agreed outside standard working hours | 28/06/2014 | 31/08/2014 | Construction zones 1, 2 and 3 |
| Bridge 12 Piling works on the afternoon Saturday the 28 June | L4.3 Works agreed outside standard working hours | 28/06/2014 | 28/06/2014 | Bridge 12, Johnsons Creek |
| Stuarts Point Road paving trial - concrete paving and saw cutting night works. | L4.4 Other out of hours works (critical works) | 4/08/2014 | 7/11/2014 | Stuarts Point Road |

# 5
# Community engagement

TPL prepared a Community Involvement Plan for the Frederickton to Eungai Pacific Highway Upgrade Project (F2E). The objective of this plan is to provide stakeholders with:

- Information on the project objectives, scope, timeframe and opportunities for input on the design and construction of the F2E Works;
- Information on any of the construction investigations and activities that may affect them;
- Consideration of the issues raised in discussions with stakeholders and indirectly or directly affected landowners; and
- Information on the progress of Thiess' work, significant milestones, design changes, changed traffic conditions and other matters that could either affect or concern the community.

The Plan has been prepared in accordance with the requirements of the Design and Construct Project Deed and the Scope of Works and Technical Criteria. It also fulfils the requirements of the Community Communication Strategy as specified in condition 5.2 of the Minister's Conditions of Approval. The plan was approved by Department of Planning on 19 August 2013.
The plan has since been revised in accordance with Thiess's commitment to undertake annual reviews and was reissued on 17 September 2014 to the environmental representative, client and project verifier with minor changes only.

## 5.1 Complaint number and types

Twenty three (24) formal complaints were logged during the reporting period (March 2014 – August 2014). Complaints fell into the following categories.

- Truck driver behaviour;
- Increased vehicle movements;
- Traffic impacts;
- Construction noise;
- Access;
- Fencing;
- Dust
- Damage to local roads;
- Water quality;
- Other.

Refer to **Table 5.1** and **Figure 5.1** for a more detailed breakdown.

**Table 5-1 Breakdown of complaints or discussions by issue**

| Issues | Complaints [2] | Stakeholders Distinct[3] |
|---|---|---|
| Trucks | 7 | 7 |
| Increased vehicle movements | 4 | 4 |
| Traffic impacts | 3 | 1 |
| Construction noise | 3 | 2 |
| Access | 2 | 2 |
| Fencing | 2 | 2 |
| Property damage | 1 | 1 |
| Dust | 1 | 1 |
| Damaged local roads | 1 | 1 |
| Water Quality | 1 | 1 |
| Other | 1 | 1 |
| Total | 24 | 19 |

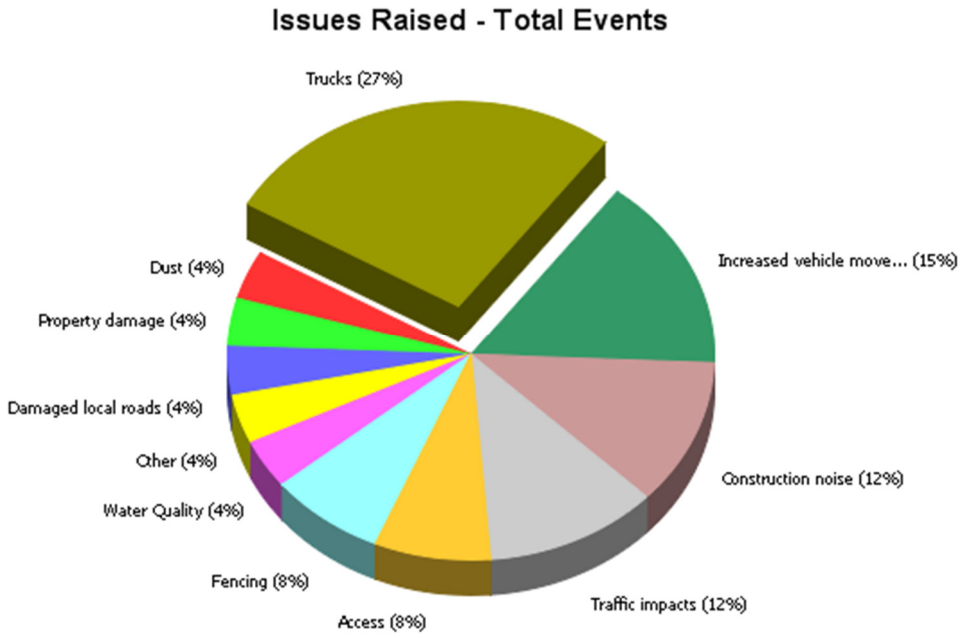



**Figure 5-1 Breakdown of complaints by issue**

[2] Note that there were 26 items of concern ("issues") raised across the 24 complaints as some complaints referred to more than one issue (for instance, dust and noise).

[3] 'Stakeholder Distinct' provides the total number of stakeholders that raised the issue. So, overall, 19 individuals filed 24 complaints.

The main issues raised within the complaints have been detailed further below.

**Truck driver behaviour**

Seven (7) complaints referred to heavy vehicle driver' behaviour including speed, poor handling of the vehicle or alleged incidents of inconsiderate road use. A variety of mitigation strategies have been put in place to combat this including:

Reduction of speed limits on access roads (in consultation with council);

- Variable message boards with radars to make drivers aware of their speed and to highlight it to other drivers in the area;
- Regular communication with the highway patrol unit to make them aware of haul routes and request their assistance in policing it;
- Undertaking our own speed audits and disciplining drivers, or dismissing them if it is a repeat offence, where appropriate;
- Regular meetings and memos to the quarries and transport subcontractors, and
- Toolbox messages.

**Increased vehicle movements**

Four (4) complaints over the period related to increased vehicle movements. These complaints primarily related to heavy vehicle movements along Stuarts Point Road to which the project was delivering mulch for beneficial reuse at an avocado farm. This delivery was short term and has since stopped.

The project team addressed these concerns by proactively advising people of periods of increased heavy vehicle traffic and the routes that the trucks would be taking and policing the behaviour of drivers (as described above).

**Traffic impacts**

Three (3) complaints were received over the reporting period for traffic impacts (other than increased vehicle movements). These all related to traffic control impacts at Stuarts Point Road and were generated by a single complainant.

These issues were resolved by advising personnel to be aware of this resident and his regular movements through the work area and to ensure that they were not delayed unnecessarily.

**Construction noise**

Three (3) complaints included concerns about construction noise. One complaint related to a heavy vehicle arriving on site early in the morning. This contractor was contacted and advised against making deliveries prior to 7am.

Two other complaints related to construction noise in the vicinity of a resident's property. The project team has monitored noise in this area and found it to be consistently below targets.

The community team, in conjunction with Roads and Maritime representatives, has also undertaken extensive consultation with the resident and agreed to accelerate operational noise treatments. In addition to this, the project team has implemented exclusion zones around this residence to ensure there is no additional impact from out of hours work.

**Access**

Two (2) complaints relating to access were received during the reporting period. One complaint was in response to a construction gate accidentally being locked into the closed position across a local road. The issue was resolved by residents (who cut the chain) and the personnel involved in the incident were issued with verbal warnings. The issue was also discussed at a toolbox meeting and procedures altered so that gates are no longer locked into position across local roads.

The other complaint related to subsidence of a trench which traversed a resident's driveway following heavy rain. The trench was backfilled immediately.

**Fencing**

Two (2) complaints related to fencing. One related to fencing material left on private property (not that of the complainant). The fencing material was removed immediately.

A second complaint related to the boundary fencing of private property which had recently exchanged. The resident was concerned about their cattle being able to access the construction site. Temporary fencing was installed within two days, thereby resolving the issue.

**Dust**

One (1) complaint categorised as "dust" was received across the project between 1 March 2014 and 31 August 2014. Construction staff addressed the complaint by committing to deploying water carts in dry conditions and stopping work in high winds.

The remaining issues raised in complaints were singular and included:

- Quality of tank water impacted by dust from the project. An agreement was reached with the tenant that we would provide a full tank of water if required. The offer was declined.
- Traffic signs blocking the residents clear view of the road from her driveway. The signs were relocated the same day.
- Damage to a vehicle windscreen from a truck passing. The resident was sent a claims pack.

## 5.2 Complaint management

The community engagement team maintains a register of all complaints received from key stakeholders and the public. Complaints are received directly during meetings, by email, letter or via the 1800 number.

The details contained within the community correspondence register include:

- Date and time of complaint.
- Format (email, phone, person, letter).
- Name, association and contact details.
- Nature of complaint.
- Responding officer and date and details of response.

The team responds to complaints and where practical puts into place mitigation measures to address the issue and reduce the likelihood of future complaints.

The community engagement team has advised local residents of upcoming construction activities by sending letterbox drops, issuing project updates, holding community information sessions and forums as well as through direct consultation.

Table 5.2 and Figure 5.2 show the breakdown of consultation activities undertaken in the six months between 4 March 2014 to 3 September 2014.

**Table 5-2 Breakdown of consultation activities**

| Communication Types | Events | Number of recipients / stakeholders |
|---|---|---|
| Phone call out | 209 | 93 |
| Email out | 168 | 537 |
| Letter out | 166 | 613 |
| Email in | 104 | 41 |
| Internal Email /Phone call / Meeting | 70 | 29 |
| Phone call in | 44 | 31 |
| Complaint | 24 | 19 |
| SMS | 21 | 10 |
| Registration - Feedback form | 21 | 19 |
| Signed Agreement | 14 | 13 |
| Briefing off site | 13 | 14 |
| Briefing on site | 9 | 9 |
| Letter in | 4 | 4 |
| Public Information Session | 2 | 46 |
| Meeting - Community Group | 2 | 2 |
| Project update | 2 | 513 |
| Total | 873 | 635 |

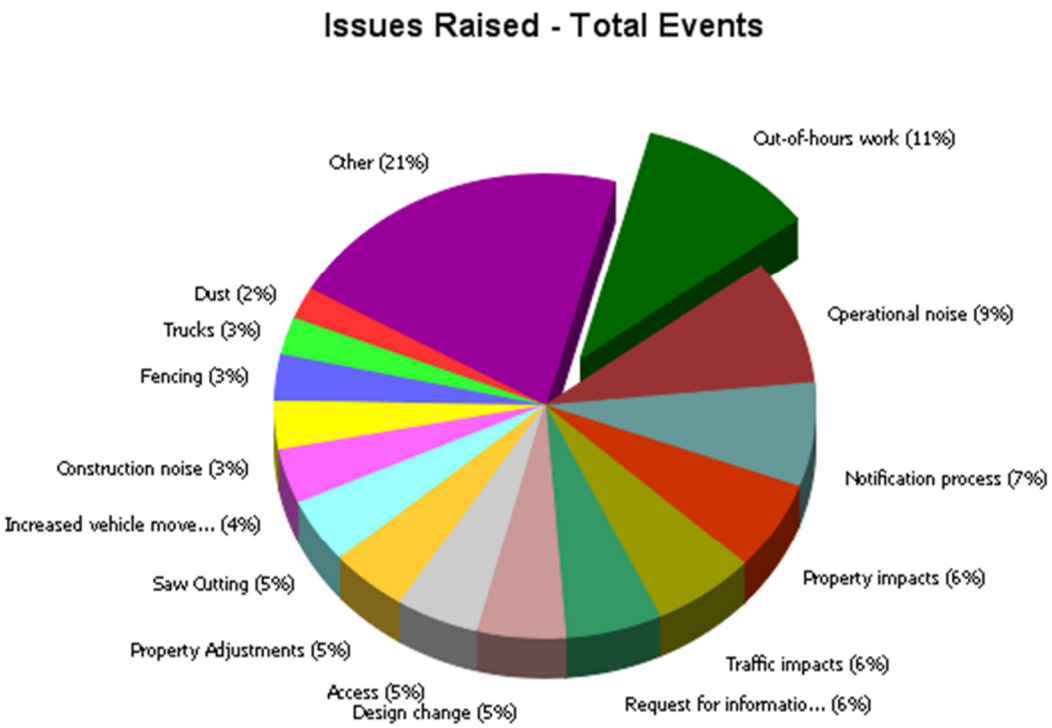



**Figure 5-2 Breakdown of consultation activities**

## 5.3 Community engagement initiatives

A number of community activities have been held with interested groups. These include two (2) general community information sessions, one (1) media milestone event, one (1) project tour for councillors and key council staff, one (1) community forum, two (2) meetings with community groups and numerous face-to-face meetings with local residents.

Two (2) project updates have also been sent out to all resident's within the project database and more than 166 letters, detailing upcoming traffic changes or impacts and changes in construction activity were also issued to 613 individual residents.

Other initiatives included:

- Revised induction material aimed at making inductees aware of the level of complaints generated by personnel outside of the project boundary (i.e.: driving behaviour, rubbish). Also introduced material covering legal and corporate implications of social media usage.
- The F2E project team also participated in the Westpac Helicopter Ball, contributing around $10,000 through the sale of tickets and raffle items.
- The project team sponsored the local music stage at Yarrahapinni Festival in September 2014.

**Media representatives on site in May 2014**

# 6
# Other compliance matters

## 6.1 Training and awareness

Training and awareness for management, field staff and contractors has been integral to the successful management of the Project. Training has covered environmental, safety and quality awareness.

All staff and sub-contractors attend project induction training prior to commencing work onsite. About 1700 individuals have now been inducted. The induction provides an overview of:

- Relevant details of the CEMP including purpose and objectives.
- Key environmental issues on topics such as flora and fauna and Aboriginal heritage.
- Conditions of environmental licences, permits and approvals.
- Specific environmental management requirements and responsibilities.
- Mitigation measures for the control of environmental issues (for example threatened species and endangered ecological communities).
- Incident response and reporting requirements.

Addition environmental training conducted this period included:

- Erosion and Sediment Control Plan review session by the Project's Soil Conservationist John Wright on 12 March.
- EPA and NSW Fisheries presentations to site staff and engineers in 20 March.
- Presentation of the Roads and Maritime Erosion and Sediment Control training video in 26 March.
- Erosion and Sediment Control Plan wet weather training with workforce on the 29 August.

**Workforce practice preparation of Erosion and Sediment Control Plans during training session**

Additional training is presented through:

- Toolbox talks to cover environmental awareness topics and reported environmental near hits.
- Upcoming environmental risk awareness during planning for works meetings such as Hazard Pre-starts.

### Internal and ER inspections

Internal inspections are undertaken by the environmental and construction teams. These routine inspections, typically weekly or following rainfall, pick up minor environmental management improvements such as maintenance of clearing boundary delineation, sediment control maintenance and installation of controls in accordance with progressive erosion and sedimentation control plans.

In addition to the weekly internal inspections, the soil conservationist is on site fortnightly for two days to complete inspections across the entire site, review erosion and sediment controls plans and provide technical advice to minimise erosion and sediment control.

The ER and Roads and Maritime representatives undertake environmental inspections on a fortnightly basis. These joint inspections incorporate the monthly ERG inspections. These inspections typically cover active works sites where risk to the environment is highest. During the reporting period, the ER made 12 environmental inspections.

## 6.2 Audits

Two (2) environmental audits have been undertaken during the reporting period.

On the 4 March Roads and Maritime Environment Branch completed an environmental performance reviews as part of a series of on reviews of major projects at the request of the Roads and Maritime Executive Environment Committee which comprises the Director Infrastructure Development, General Manager Project Management, General Manager Pacific Highway Office and General Manager Environment. The review was conducted in conjunction with key project representatives, as detailed above.
It focused on erosion and sedimentation management, water quality and biodiversity management. 19 recommendations were raised covering 10 general management themes.

A Roads and Maritime audit was held on the 24 and 25 June including a systems audit and field inspection component. This audit focused on the implementation of Roads and Maritime environmental specifications (G36, G38 and G40). All Corrective Action Requests and Observations of Concern from previous audits were closed out during this audit. Thirteen (13) new Observations of Concern were however raised which have been addressed by the project team.

## 6.3 Incidents

Roads and Maritime, and its contractors, take the view that any environmental related unplanned events, whether they impact the environment or not, are reported and recorded as incidents. This type of approach allows for the analysis of trends and encourages a culture within the workforce for continual improvement. This approach is well accepted within the Workplace Health and Safety industry as a tool to recognise unsafe practices and put in place appropriate controls before significant incidents occur.

"*An environmental incident…need not necessarily be an incident that comprises a breach of legislation. Nonetheless, it is important to capture this information to improve RMS's environmental practices and contractor performance"*.

- Category 1: Generally breaches of environmental legislation, such as pollution of waters, non-compliance with EPL / approval conditions, and unauthorised.

- Category 2: Generally less environmental serious with no or minimal offsite environmental impact. E.g. Minor non-compliances with CEMP, small spills."

There were seventeen environmental incidents reported during the 6 month reporting period, all of which were category 2 incidents (RMS Incident Classification)These incidents related to:

- Oil or fuel spills (11)
- Overtopping of tannin contaminated water from timber / mulch stockpile bunds (2) (Category 1)
- Spills from concrete washout areas (1)
- Loss of concrete material from truck on public road (1) (Potential Category 1)
- Spontaneous combustion of a mulch stockpile (1) (Potential Category 1)
- Storage of material outside of the clearing limits within the project area (1).

Details of these incidents are included in **Appendix 3**.

# 7
# Environmental initiatives, best practices and highlights

The environmental management system that is implemented on the F2E project is based on the AS/NZS ISO 14001:2004 which is based on a methodology known as Plan-Do-Check-Act (PDCA). The monitoring, inspections, audits and consultation outlined in this compliance report all contributed to the planning and checking which drives continual improvement.

Environmental initiatives and best practice that are identified are encouraged and tabled for discussion in many forums: daily pre-start talks, toolbox talks, weekly construction team meetings, environmental team meetings, management team meetings, regulatory inspections and internal and external audits.

The following examples were implemented and demonstrate best practice environmental initiatives to advance positive environmental outcomes. In addition, a number of highlights were experienced during the reporting period and these also have been presented.

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| **Early installation of fauna exclusion fencing**<br>The installation of fauna exclusion fencing has been completed as early in the construction program as possible on F2E. The key driver for this has been safety and access. Fauna fencing is typically located above the cuts and below the fills. As such, constructing the fence before the cuts are excavated avoids the risks associated with working above a steel cut face. Completing these works has a complementary environmental benefit in that the fencing is in place during the bulk earthworks and paving stages which reduces the occurance of incidental fauna in the construction site. |  |
| **Diversion of water to basins using kick-ups on fills**<br>The projects EPL requires that diversion of site water to basins is maximised. During bulk earthworks, the direction of water is constantly changing. One approach that has been adopted across much of F2E is the use of kick-up on the fill batter hinge points. The kick-ups contain site run-off from the cuts on the fill to a dedicated batter chute where the runoff can be directed to a sediment basin. |  |

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| **Basin dewatering spears and syphones**<br>Two simple initiatives that have been adopted at F2E for dewatering basins are spears and syphones.<br>The basins spears are simply a 150mm PVC pipe with holes that are mounted on the basin walls. These pipes ensure that dewatering pump heads are held in the water column and off the basin floor where they would draw up sediment.<br>Syphones have been constructed on a number of the basin to allow for dewatering without needing a pump to be attended. |  |
| **Progressive topsoiling and hydromulching of batters**<br>The final preparation, topsoiling and hydromulching of cut and fill batters has been occuring concurrently with bulk earthworks across the F2E project. These batters are hydomulched with a seed mix that includes a fast growing, seasonally chosen, grass cover crop along with the native species mix required in accordacne with the landscape drawings.<br>This practice will reduce erosion of the batters and provide maximum opportunity for revegetation prior to openning of the road for operational purposes. |  |
| **Minimum excavation construction techniques in Acid Sulfate Soil areas**<br>F2E traverses three low lying swamps with acid sufate soils. The design in fills and stormwater controls in these areas has avoided the need to excavated into the acid sulfate soils to form foundations.<br>The fills in these areas are placed on bridging rock that has been loaded with additional surcharge to accellerate settlement. The surcharge material will be removed prior paving. The D7 and D9 longitudinal swale drains have also been desinged to be nested in the fill batter to further avoid excavation in acid sulfate soils. | |

# Appendices

# Appendix 1

# Compliance with the Minister for Planning project approval

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| MCoA | 1.1 | All Stages | The Proponent shall carry out the project generally in accordance with the:<br>a) Major Projects Application 06_0224;<br>b) Kempsey to Eungai - Upgrading the Pacific Highway: Environmental Assessment (Volumes I and 2), prepared by Parsons Brinckerhoff Australia Pty Limited and dated July 2007;<br>c) Kempsey to Eungai - Upgrading the Pacific Highway: Submissions Report, prepared by Parsons Brinckerhoff Australia Pty Ltd and dated March 2008, including the Statement of Commitments contained therein;<br>d) Modification Application 06_0224 MOD 1 and request for modification dated 5 February 2010;<br>e) Modification Application 06_0224 MOD 2, request for modification dated 1 October 2010 and additional information provided to the Department on 1 November 2010,3 November 2010 and 17 November 2010;<br>f) Modification Application 06_0224 MOD 3 and request for modification dated 7 November 2011 ; and<br>g) the conditions of this approval. | Open | All sources referred to here are included in COUR register where relevant. | Enviro Manager | Project requirements included in CEMP approved by DP&E 19/8/13. Additionally COUR Register to be included in Keystone. - document management system. Tracked via 6 monthly compliance reports. | CEMP Approval. COUR register - See Keystone | Condition satisfied in previous reporting period. No further update this quarter. |
| MCoA | 1.2 | All Stages | The Proponent shall carry out the project generally in accordance with the:<br>a) the conditions of this approval and any document listed from condition l.la) to 1.1f) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and<br>b) any document listed from condition 1 .1a) to 1.1f) inclusive, and any other document listed from condition 1.1a) to 1.1f) inclusive, the most recent document shall prevail to the extent of the inconsistency. | Open | Any applicable requirements included in this COUR Register and any associated approvals and/or legal register in CEMP | Enviro Manager | Project requirements included in CEMP approved by DP&E 19/8/13. Additionally COUR Register to be included in Keystone. - document management system. Tracked via 6 monthly compliance reports. | CEMP Approval. COUR register - See Keystone | Condition satisfied in previous reporting period. No further update this quarter. |
| MCoA | 1.3 | All Stages | The Proponent shall comply with any reasonable requirement of the Director General arising from the Department's assessment of:<br>a) any reports, plans or correspondence that are submitted in accordance with this approval; and<br>b) the implementation of any actions or measures contained in these reports, plans or correspondence. | Open | Condition noted and correspondence shall be responded to as/when necessary. Compliance demonstrated wrt CEMP updates required by DP&E approval. That is CEMP updated as necessary. | Enviro Manager | COUR Register - Document Management System; Incident investigation regarding placement of a topsoil mound in an area identified as being archaeologically sensitive is ongoing and further information shall be provided to DP&E as requested. | CEMP dated July 2013 - updates included. System in place to ensure compliance - e.g. regular consultation with RMS, ERG meetings, etc. G:\NSW\F2E\01 Environment\6 Communication and Consultation\6.4 Meetings and Minutes | Incident investigation relating to placement of a topsoil mound in an area identified as being archaeologically sensitive is ongoing during this reporting period. |
| MCoA | 1.4 | Pre-construction | The Proponent may build and operate the project in stages with commensurate staging of compliance with the conditions of this approval.<br>Where the project is to be staged, the Proponent shall submit details of the staging prior to construction to the Director General, including details of how compliance with the conditions of this approval will be ensured across and between the stages of the project. | Closed | RMS provided Staging Report (Doc ID 101) | RMS | N/a for Thiess as RMS responsible; | 11 1031 Kempsey FINAL Staging Report | Condition satisfied in previous reporting period. No further update this reporting period. |

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**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

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|---|---|---|---|---|---|---|---|---|---|
| MCoA | 1.5 | All stages | This approval shall lapse ten years after the date on which it is granted, unless the works the subject of any related project approval are physically commenced on or before that date. | Closed | RMS provided Staging Report (Doc ID 101) | RMS | RMS submitted an amended staging report (rev 3) to D-G on 07/11/2011. DP&E accepted the amended Staging Report on 05/12/2011. Works commenced on 4 September 2013. Condition satisfied. | | Condition satisfied and closed. |
| MCoA | 2.1 | Design | The Proponent shall subsidise any new or necessary update(s) to the relevant Kempsey Shire Council, Nambucca Shire Council and State Emergency Service plans and documents to reflect changes in flooding levels, flows and characteristics as a result of the project. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Closed | Flood report provided to RMS - all flood information from Design (FS000). | Design Manager | FS000FS000 completed. N/a re: subsidies. Email from Michael Young (DP&E) accepting the Hydrological Mitigation Report generally satisfies the requirements of condition 2.5 (email 21.2.2014). | Refer to Keystone for Flood Report | Condition satisfied and closed. |
| MCoA | 2.2 | Design | The Proponent shall undertake further flood modelling during detailed design to ensure that the project is designed and constructed with the aim of not exceeding the afflux and flood flow velocity performance criteria specified for the Macleay River Floodplain in Section 10 of the Kempsey to Eungai – Upgrading the Pacific Highway: Environmental Assessment and Section 2.2.8 of the Kempsey to Eungai – Upgrading the Pacific Highway: Submissions Report, referred to in condition 1.1 of this approval. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Closed | Refer WMA Water Collombatti Creek Flood Study for Collombatti Creek floodplain in FS000 Appendix K, and HAJV design package FS000 for other floodplains | Design Manager | FS000 - Flood modelling has been undertaken during detailed design and shows that the aim of not exceeding the afflux and the flood-flow velocity performance criteria has been met. Refer references in Section 2of the flood mitigation report. Email from Michael Young (DP&E) accepting the Hydrological Mitigation Report generally satisfies the requirements of condition 2.5 (email 21.2.2014). | Refer to Keystone for Flood Report | Condition satisfied and closed. |
| MCoA | 2.3 | Design | Should modelling required by condition 2.2 identify changes to drainage patterns along the existing Pacific Highway that are directly attributable to the project, the Proponent shall alter or install drainage structures on the existing Pacific Highway to preserve or maintain current hydrological flow paths and flood regimes upstream of the existing highway. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Closed | Modelling of the proposed detailed design shows no change in any drainage patterns along the existing Pacific Highway. Based on the modelling results the existing Pacific Highway will not require additional drainage structures. The F2E detailed design does not | Design Manager | FS000 - completed; | Refer to Keystone for Flood Report | Condition satisfied and closed. |

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| | | | | | affect drainage patterns along the existing Pacific Highway. Demonstrated in FS000. | | | | |
| MCoA | 2.4 | Design | The Proponent shall employ a suitably qualified and experienced independent hydrological engineer approved by the Director General prior to commencement of construction to assist affected property owners in negotiating reasonable and feasible mitigation measures. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Closed | RMS responsibility | Design Manager | Letter from DoP approving the Mr Terry McKeown as the Independent Hydrological Engineer (22.01.2010). | Letter from DoP approving the Mr Terry McKeown as the Independent Hydrological Engineer (22.01.2010). | Condition satisfied and closed. |
| MCoA | 2.5 | Design | Prior to commencement of construction, the Proponent shall submit a hydrological mitigation report to the Department detailing all reasonable and feasible flood mitigation measures for all properties where flood impacts are predicted to increase as a result of the project. The report shall:<br>a) identify all properties likely to have an increased flooding impact and detail the predicted increased flooding impact;<br>b) identify the at residence and/or general property protection measures to be employed to mitigate the predicted increased flooding impact;<br>c) identify measures to be employed for directly impacted commercial/agricultural properties to assist in the protection of critical farm infrastructure and evacuation of stock during flood events;<br>d) identify measures to be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase as a result of the project and cause localised soil erosion and/or pasture damage;<br>e) detail construction methods and landscaping treatments for the Frederickton levee;<br>f) be developed in consultation with the relevant branches of Kempsey Shire Council, DECCW, State Emergency Service and directly-affected property owners; and<br>g) identify operational and maintenance responsibilities for items a) to e) inclusive.<br>The Proponent shall not commence construction of the project on or within areas likely to alter flood conditions on the Macleay River floodplain until such time as works identified in the hydrological mitigation report have been completed unless otherwise agreed by the Director General. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Closed | Refer Draft Hydrological Mitigation Report submitted by RMS to DoP on 02/09/2013. Refer RMS Disposition 0060-DR regarding extension of time. | Design Manager, RMS | Hydrological mitigation report prepared and issued to DoP by RMS on the 25 October 2013.<br><br>Email from Michael Young (DoP) accepting the Hydrological Mitigation Report generally satisfies the requirements of condition 2.5 (email 21.2.2014).<br><br>FS000/ Note: extension letter from DP&E dated 3 September 2013 | 1. Hydrological Mitigation report<br>2. Approval of hydrological mitigation report (email)<br>3. Letter of extension | Condition satisfied and closed. |

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**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

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|---|---|---|---|---|---|---|---|---|---|
| MCoA | 2.6 | Design | The Proponent shall prepare a schedule of flood mitigation measures for each directly affected property in consultation with the property owner. The schedule shall be provided to the relevant property owner(s) no later than two months prior to the implementation of the mitigation works, unless otherwise agreed by the Director General. A copy of each schedule of flood mitigation measures shall be provided to Council and the Department prior to the implementation / construction of the mitigation measures on the property. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Closed | No specific mitigation measures are proposed for any properties on the F2E project. Six residence were however consulted with in relation to flood impacts, in addition to the SES. | Design Manager Community Liaison | Included in the approved Hydrological Mitigation Report. (Refer RMS Disposition 0060-DR regarding extension of time. Refer RMS Disposition 0061-DR regarding timing of consultation) | 1. Letters of correspondence to affected property owners and SES. | Condition satisfied and closed. |
| MCoA | 2.7 | Design | In the event that the Proponent and the relevant property owner cannot agree on reasonable and feasible flood mitigation measures to be applied to a property within one month of the first consultation on the measures (as required under condition 2.6), either party may refer the matter to the Director General for resolution. [Note: scope includes Collombatti Creek floodplain according to SWTC App 4 cl4.5] | Open | No specific mitigation measures are proposed for any properties on the F2E project. Six residence were however consulted with in relation to flood impacts, in addition to the SES. There has been no disagreement to date. | Design Manager Community Liaison | Community Management Plan | 1. Letters of correspondence to affected property owners and SES. | Condition satisfied and closed. |
| MCoA | 2.8 | Design | The Proponent shall, in consultation with the DECCW and I&I NSW (Fisheries), design, construct and maintain reasonable and feasible fauna management measures to:a) facilitate safe fauna movements across the project; andb) encourage fauna movements across the project at the key crossing locations referred to in 2.8 a). | Open | Compliance requirements provided in SWTC Appendix 4, Appendix 5 and Appendix 14.Cross Drainage packages DC001, DC002, and DC003 demonstrate compliance. | Design Manager | DC001, DC002, and DC003; DC001, DC002, and DC003. Note: Condition satisfied with the exception of Borirgalla Creek. Consultation regarding the fauna underpass for the highway and service road are ongoing. | DC001, DC002, and DC003. Example of consultation meeting minutes | Consultation between RMS with EPA and DPI (Fisheries) for Boriragalla Creek ongoing during this reporting period. Closed for all other waterways. |

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|---|---|---|---|---|---|---|---|---|---|
| MCoA | 2.9 | Design | The Proponent shall, in consultation with DECCW:<br>a) investigate the potential for the translocation of Maundia triglochinoides plants impacted by the project.<br>b) if investigation under 2.9 a) reveals translocation of Maundia triglochinoides is reasonable and feasible, the Proponent shall prepare and implement a Maundia triglochinoides translocation plan for plants impacted by the project.<br>c) consider including appropriate compensatory habitat for the Maundia triglochinoides in the Biodiversity Offsets Package referred to in Condition 2.11 should the information obtained during the investigation referred to in Condition 2.9 a) find that translocation is not reasonable and feasible. | Closed | Draft Maundia translocation plan included in Tech Report EA Vol 2. (Doc ID 1)<br>Final Maundia translocation plan provided and recommended that translocation was not reasonable or feasible. No further actions to implement. | Enviro Manager | Flora & Fauna Sub-Plan/ 2121213MaundiaReport-VersionB; Biodiversity Offset Package conditionally approved by DP&E on 14/5/10<br><br>Flora & Fauna Sub-Plan/ 2121213MaundiaReport-VersionB | Biodiversity Offset Package | Condition satisfied and closed. |
| MCoA | 2.10 | Pre-construction | The Proponent shall develop and submit for the approval of the Director General, a Biodiversity Offset Strategy. The Strategy shall provide a framework for developing the Biodiversity Offsets Package required by Condition 2.11 and shall be developed in consultation with the DECCW. The Strategy shall:<br>a) include a minimum requirement to provide 382 hectares of native vegetation to offset direct and indirect impacts of the proposal<br>b) identify the extent and types of habitat/vegetation communities that would be lost or degraded as a result of the project;<br>c) describe the quality of the habitat/vegetation communities identified in point a);<br>d) identify the objectives and outcomes to be met by the final Biodiversity Offset Package;<br>e) consider the biodiversity management measures or activities identified in the documents set out in condition 1.1 or elsewhere in these Conditions of Approval, including:<br>i. fauna crossing structures and associated fauna fencing to be installed as part of the project.<br>ii. revegetation measures.<br>iii. translocation plans.<br>iv. any other fauna mitigation measures such as nest boxes and frog breeding ponds.<br>v. any ongoing biodiversity or threatened species monitoring requirements.<br>f) provide details of available compensatory habitat in the region to offset the loss of Freshwater Wetlands, Swamp Sclerophyll Forest, Swamp Oak Floodplain Forest, River Flat Eucalypt Forest and Mahogany Dry Sclerophyll Forest and habitat for threatened fauna species as a result of the project. This may include other non land based management measures or actions to deliver a beneficial outcome for the region;<br>g) provide a decision-making framework to be used in selecting the priority ranking of compensatory habitat options available in the region; and<br>h) consider the linkage between compensatory measures and floodplain natural resource management.<br>Unless otherwise agreed, the Biodiversity Offset Strategy shall be submitted to the Director General for approval no later than 6 | Closed | BOS provided by RMS as Info Doc 103, dated April 2010. | Enviro Manager / RMS | Biodiversity Offset Strategy<br><br>Flora and Fauna Subplan in the CEMP; Biodiversity Offset Strategy conditionally approved by DP&E on 14/5/10.<br><br>Elements included in Flora and Fauna Sub plan in the CEMP. | DP&E Letter dated 14/5/10. | Condition satisfied and closed. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
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| | | | weeks prior to the commencement of any construction that would result in the disturbance of Endangered Ecological Communities or threatened fauna species' habitat.<br>Nothing in this condition prevents minor clearing of Endangered Ecological Communities and threatened species habitat prior to approval of the Strategy, where the clearing does not compromise biodiversity outcomes and has been approved by the Director General, in consultation with DECCW.<br>Nothing in this condition or this approval precludes the Proponent from implementing a suitable offsets package which addresses impacts from multiple Pacific Highway Upgrade Projects (including the Kempsey-Eungai Upgrade) within the North Coast Bio-region (Manning-Macleay sub region). Any such agreement made with the Department of Environment and Climate Change must be made in consultation with the Department and approved by the Director General. | | | | | | |
| MCoA | 2.11 | Pre-construction | Within 12 months of the approval of the Biodiversity Offset Strategy, or as otherwise agreed by the Director General, the Proponent shall submit the Biodiversity Offset Package for the approval of the Director General. The Package shall be developed in consultation with the DECCW and:<br>a) shall detail the final suite of biodiversity offset measures selected in accordance with the Strategy; and<br>b) include a program (timeline) to achieve the implementation of the final suite of measures. Where possible, this should include purchase of land, development of agreements with identified land management authorities (e.g. DECCW, local council etc.) for long term management and funding of offsets and mitigation measures, and installation of identified mitigation measures. | Closed | Not applicable - RMS to implement | RMS | Biodiversity Offset Strategy conditionally approved by DP&E on 14/5/10.<br><br>RMS received DP&E extension for Package to be submitted. | BOS DP&E approval Letter dated 14/5/10.<br><br>DP&E extension letters dated 14.2.13 and 11.7.13 | Extension for Biodiversity Offset Package submission is valie for this compliance period. RMS continue to develop the offset package. |
| MCoA | 2.12 | Construction | Standard construction hours for the duration of construction are:a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive; andb) 8:00 am to 1:00 pm on Saturdays; andc) at no time on Sundays or public holidays.The following exceptions (without further approval) to standard construction hours apply:i. any works that do not cause construction noise to be audible at any sensitive receiver;orii. for delivery of materials required outside these hours by the Police or other relevant authorities for safety reasons; oriii. where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm. | Closed | Sensitive noise receptors to be identified and monitored (including background), constraints to be included in subbie agreements, WAPs, site inductions | Construction Manager Enviro Manager | Requirements included in the F2E Noise and Vibration Sub Plan in CEMP plus within site inductions, fact sheet and out of hours permit system. This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports. | NVMP | Permits for works outside of the standard construction hours have been managed in accordance with the process outlined in the NVMP. For this six month period these were:- OoHW Soft Soil Monitoring 10/3/14 to 19/12/14- OoHW Saturdays Zone 1 and Zone 2 15/3/14 to 31/5/14 - OoHW Saturday Afternoons Zone 3 15/3/14 to 31/5/14 - OoHW Saturday Afternoons June to September 2014 - OoHW Saturday Bridge 12 Piling 28/6/14- OoHW Saw Cutting at SPR Interchange |

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| MCoA | 2.14 | Construction | Certain construction activities (Out of Hours Works) may be allowed to occur outside the standard construction hours with the prior written approval of the Director-General. Requests for out of hours approval will be considered for construction activities which cannot be undertaken during standard construction hours for technical or other justifiable reasons and will be considered on a case by case or activity-specific basis. Any request for Out of Hours Works must be accompanied by:<br>a) details of the nature and need for activities to be conducted during the varied construction hours;<br>b) written evidence to the DECCW and the Director-General that activities undertaken during the varied construction hours are justified, appropriate consultation with potentially affected receivers and notification of Council has been undertaken, issues raised have been addressed, and all feasible and reasonable mitigation measures have been put in place; and<br>c) evidence of consultation with the DECCW on the proposed variation in standard construction hours. Despite the above, Out of Hours Works may also occur where a process for considering the above on a case by case or activity specific basis by the Proponent, including factors a) to c) above, has been approved as part of a Construction Environment Management Plan or Construction Noise and Vibration Management Plan for this project. | Open | Provisions to be included in Construction Noise & Vibration Sub-Plan | Construction Manager<br>Enviro Manager | Procedure and relevant information included in F2E Noise and Vibration Management Sub Plan in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports. | NVMP | Refer to MCoA 2.14 above |
| MCoA | 2.15 | Construction | Blasting associated with the construction of the project is only permitted during the following hours:<br>a) 9:00 am to 5:00 pm, Mondays to Fridays, inclusive;<br>b) 9:00 am to 1:00 pm on Saturdays; and<br>c) at no time on Sundays or public holidays.<br>This condition does not apply in the event of a direction from police or other relevant authority for safety reasons. | Closed | Was noted different elsewhere for "noisy activities". 9-3 Mon to Fri and 9-12 Sat as per CN3. | Construction Manager<br>Enviro Manager | Addressed via the Noise and Vibration Management Sub Plan in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports. | NVMP | Addressed in the NVMP.<br>No blasting required on the project to date. |
| MCoA | 2.16 | Construction | The Proponent shall consult with affected educational institutions and ensure that noise generating construction works in the vicinity of the institutions are not timetabled during examination periods, unless other arrangements acceptable to the affected institutions are made at no cost to the affected institutions. | Closed | Identify educational institutions, assess degree of sensitivity, incorporate into program. VMP developed to avoid trucks passing the school. F2E works unlikely to impact due to distance from school. VMP included as evidence | Neil Gross Community Liaison<br>Enviro Manager | Addressed via the Noise and Vibration Management Sub Plan in CEMP & CIP. This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports. VMP prepared and distributed to avoid Frederickton School - i.e. provided to quarries re; deliveries | NVMP | Condition satisfied in previous reporting period. Refer to NVMP.<br>Only education facility is at Frederickton - school. |

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| | | | | | documentation. | | | | |
| MCoA | 2.17 | Construction | The construction noise objective for the project is to manage noise from construction (as measured by a LA10 (15minute) descriptor) so that it does not exceed the background LA90 noise level by:a) more than 20 dB(A) for a construction period of equal to or less than four weeks;b) more than 10 dB(A) for a construction period of greater than four weeks, but not exceeding 26 weeks; andc) more than 5 dB(A) for a construction period greater than 26 weeks.Any activities that could exceed the construction noise objectives specified under this condition shall be identified and managed in accordance with the Construction Noise and Vibration Management Plan specified under condition 6.5c) of this approval. If the noise from construction is substantially tonal or impulsive in nature (as described in Chapter 4 ofthe NSW Industrial Noise Policy), 5dB(A) shall be added to the measured construction noise level when comparing the measured noise with the construction noise objectives. The Proponent shall implement all reasonable and feasible noise mitigation measures with the aim of achieving the construction noise objective. | Open | Provisions included in Noise & Vibration Sub Plan | Construction ManagerEnviro Manager | Noise and Vibration Sub Plan in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports. | NVMP | Condition satisfied through the NVMP. Monitoring ongoing in accordance with the NVMP. |
| MCoA | 2.18 | Construction | The Proponent shall ensure that air blast overpressure generated by blasting associated with the project does not exceed the criteria specified in Table 1 when measured at the most affected residence or other sensitive receiver.<br><br>Table 1 - Airblast Overpressure Criteria<br>Airblast Overpressure (dB(Lin Peak)) — Allowable Exceedance<br>115 — 5% of total number of blasts over a 12 month period<br>120 — 0%<br>Subject to the Proponent demonstrating to the Director General that consultation with the community and landowners on the proposed blasting program has occurred, these criteria do not apply to Stage 2 Frederickton to Eungai where the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.<br>Note:<br>1. The agreement may be terminated by the landowner at any time should concerns about the increased blasting limits be unresolved.<br>2. The Airblast Overpressure level of 125 dBL shall not be exceeded.<br>3. The agreement does not apply where the property is a heritage property. | Closed | Sensitive noise receptors to be identified and monitored (including background), constraints to be included in subbies agreements, work methodologies, site inductions. | Construction Manager Enviro Manager | Relevant information included in F2E Noise and Vibration Management Sub Plan in CEMP.<br>This is monitored through weekly inspections, Monthly Environmental Performance Reports & associated procedures, as well as within the 6 monthly compliance reports.<br><br>NOTE: Blasting is unlikely to be required on the F2E project due to poor rock strength.<br><br>No blasting to date. | NVMP | Condition satisfied and closed Addressed in the NVMP. No blasting required on the project to date. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
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| MCoA | 2.19 | Construction | The Proponent shall ensure that ground vibration generated by blasting associated with the project does not exceed the criteria specified in Table 2 when measured at the most affected residence or other sensitive receiver.<br><br>Table 2 – Peak Particle Velocity Criteria<br>Peak Particle Velocity (mms-1) Allowable Exceedance<br>5 5% of total number of blasts over a 12 month period<br>10 0%<br>However, these criteria do not apply to the Stage 1 Kempsey Bypass where the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.<br>Subject to the Proponent demonstrating to the Director General that consultation with the community and landowners on the proposed blasting program has occurred, these criteria do not apply to Stage 2 Frederickton to Eungai where the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.<br>Note:<br>1. The agreement may be terminated by the landowner at any time should concerns about the increased blasting limits be unresolved.<br>2. The Peak Particle Velocity vibration level of 25 mm/s shall not be exceeded.<br>3. The agreement does not apply where the property is a heritage property. | Closed | Sensitive vibration receptors to be identified and monitored (if blasting), constraints to be included in subbie agreements, work methodologies, pre-start meetings with subbies. | Construction Manager Enviro Manager | Noise and Vibration Sub-Plan in CEMP. Note no blasting to date (4/03/14) or currently proposed.<br><br>No blasting to date. | NVMP | Condition satisfied and closed Addressed in the NVMP. No blasting required on the project to date. |
| MCoA | 2.20 | Operation | Unless otherwise agreed to by the Director General, the Proponent shall submit for the approval of the Director General a review of the operational noise mitigation measures for the project within six months of commencing construction. The Review shall take into account the detailed design of the project and shall be prepared in consultation with the DECCW. Consideration of operational noise mitigation measures shall include, but not necessarily be limited to, those operational noise mitigation measures specified in section 16.5 of the document referred to in condition 1.1b) of this approval. For the purpose of this condition, the Proponent is only required to consider reasonable and feasible noise mitigation measures to meet the noise criteria stipulated in Environmental Criteria for Road Traffic Noise (EPA, 1999) and the Environmental Noise Management Manual' (RTA, 2001). | Open | ONMP developed and saved at \\TCFS.thiess.aus\Groups\NSW\F2E\01 Environment\2 Planning\2.4 Aspects and Impacts\02 Noise\ONMP. The Report has been submitted to RMS for review. | Design Manager | An Operational Noise Management Report has been developed and The Dept. of Planning & Environment approved the ONMP (v.D5 April 2014) on the 2 May 2014 (letter reference MP06_0224). | Refer to Incite Correspondence F2E-RMS-CORR-00156 | The Dept. of Planning & Environment approved the ONMP (v.D5 April 2014) on the 2 May 2014. Refer to Incite Correspondence F2E-RMS-CORR-00156. Status updated to closed. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
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| MCoA | 2.21 | Construction | Unless otherwise agreed with the DECCW, the Kempsey Local Aboriginal Land Council and the Dunghutti Elders group, the Proponent shall:<br>a) salvage any identified artefacts from sites KE14, KE15, KE16 and KE42; and<br>b) undertake subsurface testing for sites KE PAD 1 to 12 inclusive, and salvage any artefacts of significance identified at those sites.<br>The subsurface investigations and salvage of artefacts shall be undertaken prior to the commencement of construction works that may impact on those sites and in consultation with the DECCW, the Kempsey Local Aboriginal Land Council and the Dunghutti Elders group.<br>The approach to salvage shall be in accordance with a methodology developed in consultation with the DECCW, the Kempsey Local Aboriginal Land Council and the Dunghutti Elders group.<br>The salvage and storage of Aboriginal objects may proceed in the absence of an approved Construction Environmental Management Plan, subject to the activities being undertaken in accordance with a salvage strategy, prepared in consultation with the DECCW, the Kempsey Local Aboriginal Land Council and the Dunghutti Elders group, and approved by the Director General. | Open | Subsurface investigation and salvage of KE14, KE15, KE16 and KE PAD 6 to 12 prior to the commencement of Stage 2 works which may impact on those sites. | Enviro Manager<br>Community Liaison | Included in Heritage Management Plan -App D for PAD 6-12 + KE 14, 15, 16 report.<br>Draft report issued 8/4/13.<br>Copy of final report. + PAD 1-5 report to be sourced from RMS and referenced. | 1. Records of salvage and sub-soil testing<br>2. Heritage Management Plan | Additional supervision of topsoil stripping was completed at KE 14 & 16 on the 3 June and KE 15 on the 28 July 2014 for access tracks on the former Blair property. Representatives from the Dunghutti Elders Council and Kempsey Local Aboriginal Land Council were in attendance for the works. |
| MCoA | 2.23 | Pre-construction | An archival record shall be prepared by an appropriately qualified heritage expert for sites KEH3, KEH6, KEH7 and Ferry Lane Memorial Avenue (KEH1) prior to commencement of construction works that may affect those items. A copy of the record shall be provided to Kempsey Shire Council. | Closed | Not applicable. Sites listed in Condition 2.23 are not within Stage 2 (F2E). Undertaken by NOHC in 2011. | RMS | Archival recording of KEH1 was submitted to Kempsey Shire Council in December 2010.<br>KEH3, KEH6 and KEH7 were submitted in September 2011 | N/a | Condition satisfied and closed. |
| MCoA | 2.24 | Design | The Proponent shall replace the boat ramp, access road, parking and amenities removed as part of the Frederickton Levee construction. The replacement facilities shall be located and constructed in consultation with Kempsey Shire Council and the NSW Maritime Authority | Closed | Not applicable. The Frederickton Levee is not within Stage 2. | RMS | N/a | N/a | Not applicable to F2E |
| MCoA | 2.25 | Design | The Proponent shall consult directly affected property owners (as defined in Chapter 15 of the document referred to under condition 1.1b of this approval) in relation to the design and location of reasonable and feasible measures to permit movement of livestock and agricultural machinery between the parts of their properties that may be separated by the project. Those measures shall be installed and function so that farm operations are not disrupted by either construction or operation of the project. | Closed | Consultation undertaken by RMS and further consultation undertaken by Thiess/ RMS. Location and requirements of the farm accesses provided in SWTC Appendix 9 and Appendix 14. Design compliance demonstrated in DC002 . Package references for | RMS<br>Community Liaison<br>Construction Manager | CIP<br>DC001, DC002, and DC003, Severn Hills BR07 and Collombatti BR06. Note Variations in place to remove 2 underpasses from the SWTC, tracked via the design register & RFI system. | N/a | Condition satisfied and closed. |

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| | | | | | Severn Hills BR07 and Collombatti BR06. | | | | |
| MCoA | 2.26 | Construction | The Proponent shall construct the project in a manner that minimises dust emissions associated with construction works, including wind-blown and traffic-generated dust. | Open | Ensure work methodologies reflect condition; inform team via inductions | Construction Manager Enviro Manager | Air Quality Management Plan in CEMP. This is monitored through weekly inspections, Monthly Environmental Performance Reports & associated procedures, as well as within the 6 monthly compliance reports. | AQMP | Controls and monitoring of the AQMP being implemented during construction.<br>No exceedance or unresolved complaints relating to dust during the reporting period. |
| MCoA | 2.27 | Construction | The Proponent shall take all reasonable and feasible measures to minimise soil erosion and the discharge of sediments and pollutants from the project during construction and operation in accordance with Managing Urban Stormwater: Soils and Construction (Department of Housing and Landcom, 2004); | Open | Designers to consider permanent controls, Construction team to manage temporary controls | Design Manager Construction Manager Enviro Manager | Soil and Water Management Plan in CEMP, Drainage and Basin Design Drawings Controls and monitoring of the SWMP being implemented during construction. | SWMP, PESCP | Controls and monitoring of the SWMP being implemented during construction.Progressive Erosion and Sediment Controls Plans are prepared for all Ground Disturbance Permits. Weekly inspections with the soil conservationist occurring to assist with planning effective erosion and sediment controls. |
| MCoA | 2.28 | Construction | Where available and of appropriate chemical and biological quality for its proposed purpose, the Proponent shall use stormwater, recycled water or other water sources in preference to potable water for construction, including concrete mixing and dust control. | Open | Water sourcing strategy to be determined: relevant approvals to be sought prior to water extraction activities | Construction Manager | Soil and Water Management Plan in CEMP. Implemented and tracked via water movement permit system, monthly report and 6 monthly compliance reports. . | SWMP | Surface water and groundwater is being used for construction water. Licenses have been obtained from the Office of Water for surface water and groundwater extraction. |

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| MCoA | 2.29 | Construction | The Proponent shall ensure that ancillary facilities are located so as to satisfy the following criteria, unless otherwise approved by the Director General:<br>a) be located within or directly adjacent to the project;<br>b) have ready access to the road network;<br>c) be located to minimise the need for heavy vehicles to travel through residential areas;<br>d) be sited on relatively level land;<br>e) be separated from nearest residences by at least 200 metres (or at least 250 metres for a temporary batch plant);<br>f) not be within 100 metres of, or drain directly to, a wetland listed under State Environmental Planning Policy No. 14 – Coastal Wetlands;<br>g) be located above the 20 year ARI flood level in other areas unless a contingency plan to manage flooding is prepared and implemented;<br>h) not require vegetation clearing beyond that already required for the project;<br>i) not impact on heritage sites beyond those already impacted by the project; and<br>j) not affect the land use of adjacent properties.<br>The location of the Ancillary Facilities shall be identified in the Construction Environmental Plan required under condition 6.4 and include consideration against the above criteria.<br>Where the above criteria cannot be met for any proposed Ancillary Facility, the Proponent shall demonstrate to the Director General that there will be no adverse impact from that facility's construction or operation. | Open | Shortlisted sites have been checked against these criteria in project planning: Refer to RMS/ ER approvals for ancillary sites. Monitored through pre-commencement consistency assessments in consultation with RMS, & 6 monthly compliance reports. | Construction Manager Enviro Manager | Ancillary Site Compliance Checklist in CEMP. Consistency Assessments completed for ancillary sites. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.1 Planning App | Condition satisfied through Environmental Review / Consistency Assessment for new ancillary facilities New ancillary facilities established during this reporting period were:<br>- Stockpile Site No1. (previously used site opposite the F2E southern site compound.<br>- Rock Crushing Facility at Saul Property (F2E-00G-CA-ENV-019-00-00).<br>- The southern site compound consistency assessment was also updated to accommodate batch plant activities. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
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| MCoA | 3.1 | All Stages | Prior to the commencement of construction, the Proponent shall develop and implement a Monitoring Program to target the effectiveness of the mitigation measures identified in Condition 2.10(d) for the listed threatened species directly impacted by the project. The program shall include (but not necessarily be limited to) the monitoring of Maundia triglochinoides, Green-thighed Frog, Glossy Black Cockatoo and the Brush-tailed Phascogale. The Program shall be developed in consultation with the DECCW and suitably qualified ecologist(s) and shall include but not necessarily be limited to:a) the monitoring of threatened species in and adjacent to the project footprint. The methodology shall be decided in consultation with DECCW;b) an adaptive monitoring program to assess the effectiveness of the mitigation measures identified in Condition 2.10 (d) and allow their modification if necessary. The monitoring program shall include targets against which effectiveness will be measured;c) monitoring shall be undertaken during construction (for construction-related impacts) and from opening of the project to traffic (for operation/ongoing impacts) until such time as the effectiveness of mitigation measures can be demonstrated to have been achieved over a minimum of three successive monitoring periods, or as otherwise agreed by the Director General in consultation with DECCW;d) provision for the assessment of the data to identify changes to habitat usage and if this can be attributed to the project;e) details of the contingency measures that would be implemented in the event of changes to habitat usage patterns directly attributable to the construction or operation of the project; andf) provision for annual reporting of monitoring results to the Director General and the DECCW, or as otherwise agreed by those agencies.The Program shall be submitted to the Director General prior to the commencement of construction and shall be updated to incorporate the monitoring methodology for threatened species, once agreed to, in accordance with condition of this approval. | Open | RMS has provided ecological Monitoring Program (Doc ID 120) plus updates. | RMS Enviro Manager | F2E ecological monitoring program was approved by DP&E on 25.7.13<br><br>Flora and Fauna Management Plan in CEMP. 2141112Frederickton-Eungai Ecological Monitoring Program Version 5 | Objective file numbers:<br>- SF2012/005795<br>SF2012/005800 | Target monitoring of Brush-tailed Phascogale and Glossy Black Cockatoo was undertaken in May 2014 in accordance with the approved ecological monitoring program.<br>The first annual ecological monitoring report for the project is currently being compiled for submission to DP&E and EPA during the next compliance period. |

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| MCoA | 3.2 | Operation | No later than one year after commencement of operation of the project, or as otherwise agreed by the Director General, the Proponent shall undertake operational noise monitoring to confirm the predicted noise performance of the project against actual performance and prepare an Operational Noise Report. The Report shall include, but not necessarily be limited to:<br>a) noise monitoring to assess compliance with the operational noise outcomes predicted in the documents specified under condition 1.1 of this approval;<br>b) a review of the operational noise levels and in terms of criteria and noise goals established in the Environmental Criteria for Road Traffic Noise (EPA 1999) and the Environmental Noise Management Manual' (RTA, 2001);<br>c) methodology, location and frequency of noise monitoring, to be undertaken in accordance with the Environmental Noise Management Manual' (RTA, 2001);<br>d) identification of monitoring sites at which background noise and project noise levels can be ascertained, with specific reference to locations indicative of impacts on sensitive receivers;<br>e) details of any complaints and enquiries received in relation to operational noise generated by the project between the date of commencement of operation of the project and the date the report was prepared;<br>f) any required recalibrations of the noise model taking into consideration factors such as noise monitoring undertaken and actual traffic numbers and proportions; and<br>g) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of all reasonable and feasible mitigation measures; and<br>h) any additional noise mitigation measures required and timetables for implementation. | Open | Scope is outside of TPL works, ONMP to be developed and provided to RMS<br><br>This COUR has been closed as it is an Operational requirement. | RMS | Not Applicable | N/a | Not applicable to this period (operational phased commitment). |
| MCoA | 3.3 | Operation | Within 60 days, or as otherwise agreed by the Director General, of completing the operational noise monitoring referred to under condition 3.2 of this approval, the Proponent shall provide the Director General and the DECCW with a copy of the Operational Noise Report. If the Report identifies any non-compliance with the noise objectives specified in the Environmental Criteria for Road Traffic Noise (EPA 1999), the Proponent shall detail what additional measures would be implemented to ensure compliance, clearly indicating these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director General. | Open | Scope is outside of tender | RMS | Not Applicable | | Not applicable to this period (operational phased commitment). |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

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| MCoA | 4.1 | All Stages | The Proponent shall develop and implement a Compliance Tracking Program to track compliance with the requirements of this approval. The Program shall be submitted to the Director General for approval prior to the commencement of construction. The Program shall include, but not necessarily limited to:a) provisions for periodic review of the compliance status of the project against the requirements of this approval (specified under condition 1.1c);b) provisions for the notification of the Director General prior to the commencement of construction and prior to the commencement of operation of the project;c) provisions for periodic reporting of compliance status to the Director General during construction;d) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing;e) mechanisms for recording incidents during construction and actions taken in response to those incidents;f) provisions for reporting environmental incidents to the Director General during construction; andg) mechanisms for rectifying any non-compliance identified during environmental auditing or review of compliance. | Open | Include in CEMP | Enviro Manager | Compliance tracking program incorporated into CEMP. Quarterly reviews to be completed in accordance with Compliance Tracking Program. Refer to section 2.2 for notification strategy. | Appendix A11 - Compliance tracking program, Pre-construction report (include link) | Quarterly reviews of conditions completed in June and September.<br><br>An independent audit was conducted on 24 & 25 June 2014. |
| MCoA | 5.1 | Construction | Subject to confidentiality, the Proponent shall make all documents required under this approval available for public inspection on request. | Open | All approved documents provided to RMS for website upload as applicable. Documents available at Site Compound. | Community Liaison Enviro Manager | Included in CEMP/ CIP | CEMP/ CIP | Documents published on RMS website - http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html |

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| MCoA | 5.2 | Construction | The Proponent shall prepare and implement a Community Communication Strategy for the project. This Strategy shall be designed to provide mechanisms to facilitate communication between the Proponent, the Contractor, the Environmental Representative, Council and local community (broader and local stakeholders) on the detailed design, progress and the related environmental management of the project. The Strategy shall include, but not necessarily limited to:<br>a) identification of stakeholders to be consulted as part of the Strategy, including affected and adjoining landowners;<br>b) procedures and mechanisms for the regular distribution of information to stakeholders on the progress of the project, detailed design and matters associated with environmental management;<br>c) procedures and mechanisms through which stakeholders can discuss or provide feedback to the Proponent and/or Environmental Representative in relation to the environmental management, detailed design and delivery of the project;<br>d) the formation of community-based forums (focus groups) that focus on key design, environmental management and construction issues for the project. The Strategy shall provide detail on the structure, scope, objectives and frequency of the community based forums;<br>e) procedures and mechanisms through which the Proponent can respond to any enquires or feedback from stakeholders in relation to the environmental management, detailed design and delivery of the project; and<br>f) procedures and mechanisms that would be implemented to resolve any issues/disputes that may arise between parties on the matters relating to environmental management and the delivery of the project. This may include the use of an appropriately qualified and experienced independent mediator.<br>Key issues that should be addressed in the Community Communication Strategy should include (but not necessarily be limited to):<br>i) traffic management (including property access);<br>ii) community infrastructure;<br>iii) property acquisition;<br>iv) business impacts;<br>v) landscaping/ urban design matters;<br>vi) heritage;<br>vii) flood management;<br>viii) construction activities; and<br>ix) noise and vibration mitigation and management.<br>The Proponent shall maintain and implement the Strategy throughout construction. The Strategy shall be approved by the Director General prior to the commencement of construction, unless otherwise agreed by the Director General. | Open | Community communication strategy to incorporated into CIP | Community Liaison Enviro Manager | The CIP was approved by DP&E on the 19/8/13 (letter ref 11119471). Ongoing implementation of the CIP | F2E-00G-PL-CIP-001-03 | Ongoing implementation of the Community Involvement Plan. |

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| MCoA | 5.4 | All Stages | Prior to the commencement of construction of the project, the Proponent shall ensure that the following are available for community enquiries and complaints for the duration of construction:<br>a) a telephone number on which complaints and enquiries about the project may be registered.<br>b) a postal address to which written complaints and enquires may be sent.<br>c) an email address to which electronic complaints and enquiries may be transmitted.<br>The telephone number, the postal address and the email address shall be published in a newspaper circulating in the local area prior to the commencement of construction and prior to the commencement of operation. This information shall also be provided on the Proponent's website. | Open | Community communication strategy to incorporated into CIP | Community Liaison | Details provided on RMS website at http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/index.html | F2E-00G-PL-CIP-001-03 | - Phone: 1800 668 240<br>- Email: community-enquiries @F2E.incite.com.au<br>- Mail: Frederickton to Eungai Pacific Highway Upgrade, PO Box 53 Frederickton NSW 2440 |
| MCoA | 5.5 | Construction | Prior to the commencement of construction of the project, the Proponent shall prepare and implement a Construction Complaints Management System consistent with AS 4269: Complaints Handling and maintain the System for the duration of construction. Information on all complaints received, including the means by which they were addressed and whether resolution was reached with or without mediation, shall be included in the construction compliance reports referred to under condition 4.1c) and made available to the Director General on request. | Open | Complaint system to be included in CIP | Community Liaison | CIP/ Consultation Manager | F2E-00G-PL-CIP-001-03 | Community Involvement Plan details complain response process and all consultation is recorded in Consultation Manager. |
| MCoA | 5.6 | Construction | Prior to the commencement of construction, the Proponent shall dedicated pages within its project website, for the provision of electronic information associated with the project. The Proponent shall, publish and maintain up-to-date information on these dedicated pages including, but not necessarily limited to:<br>a) a copy of the documents referred to under condition 1.1 of this approval, and any documentation supporting modifications to this approval that may be granted from time to time;<br>b) a copy of this approval and each relevant environmental approval, licence or permit required and obtained in relation to the project;<br>c) subject to confidentiality requirements, a copy of each strategy, plan and program required under this approval; and<br>d) the outcomes of compliance tracking in accordance with condition 4.1 of this approval. | Open | Permits, Licences and Approvals provided to RMS via hold point release system. | Community Liaison | CIP, CEMP | CIP and CEMP provided to RMS. Approvals & permits provided to RMS in accordance with G36 requirements. | Condition satisfied and ongoing. Details available on the RMS website http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.htm |

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| MCoA | 6.1 | Construction | Prior to the commencement of construction of the project or each stage of the project, or as otherwise agreed by the Director General, the Proponent shall nominate for the approval of the Director General, a suitably qualified and experienced Environmental Representative(s) independent of the project design and construction personnel. The Proponent shall employ the Environmental Representative(s) for the duration of construction, or as otherwise agreed by the Director General. The Environmental Representative(s) shall:<br>a) be the principal point of advice in relation to all questions and complaints concerning the environmental performance of the project;<br>b) monitor the implementation of all environmental management plans and monitoring programs required by the conditions of this approval;<br>c) monitor the outcome of all environmental management plans and advise the Proponent upon the achievement of all project environmental outcomes;<br>d) ensure that environmental auditing is undertaken in accordance with all relevant project Environmental Management Systems;<br>e) have responsibility for considering and advising the Proponent on matters specified in the conditions of this approval, and all other licences and approvals related to the environmental performance and impacts of the project; and<br>f) given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur | Closed | Role of Env Rep included in CEMP - See section 4.2.1 | Enviro Manager | Appointment of Murray Curtis as ER was approved by DP&E on 16.12.09<br><br>Appointment & responsibilities included in CEMP. | Objective file number: SF2012/005795 | Condition satisfied. Murray Curtis remains appointed as ER. |
| MCoA | 6.3 | Design | Prior to the commencement of construction of the project, or as otherwise agreed by the Director General, the Proponent shall prepare an Urban Design and Landscape Plan in consultation with relevant Council(s), relevant Government agencies and the community. The Plan shall include, but not necessarily be limited to:<br>a) sections and perspective sketches;<br>b) location and identification of existing and proposed vegetation including use of indigenous and endemic species where possible;<br>c) location of mounds, bunds, structures (noise walls, bridges) or other proposed treatments, finishes of exposed surfaces (including paved areas);<br>d) progressive landscaping strategies incorporating other environmental controls such as erosion and sedimentation controls, drainage, noise mitigation; and<br>e) monitoring and maintenance procedures. | Closed | Submission of the UD&LMP to DP&E | Design Manager | UD&LP to be submitted to D&PI as per RMS RFI response.<br>Original extension granted til 28 February 2014.<br>DP&E extension letter ref: 4483_001_urban_design_extension<br>Following consultation and revision, the Department approved the UD&LMP on the 2 June 2014 (letter reference 09/03204). | F2E-00G-PL-LMP-001-05 | Condition satisfied and closed. Following consultation and revision, the Department approved the UD&LMP on the 2 June 2014 (letter reference 09/03204). |

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| MCoA | 6.4 | Pre-construction | Prior to the commencement of construction of the project or each stage of the project, the Proponent shall prepare and implement a Construction Environmental Management Plan to outline environmental management practices and procedures to be followed during construction of the project. The Plan shall be prepared in consultation with relevant Government agencies and local councils, and in accordance with Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004) and shall include, but not necessarily be limited to:a) a description of all activities to be undertaken during construction of the project including an indication of stages of construction, where relevant;b) statutory and other obligations that the Proponent is required to fulfil during construction including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;c) details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;d) a description of the roles and responsibilities for all relevant employees involved in the construction of the project;e) the additional plans listed under condition 6.5 of this approval; andf) complaints handling procedures during construction as set out in condition 5.5 of this approval.The Plan shall be submitted for the approval of the Director General no later than one month prior to the commencement of any construction works associated with the project, or within such period otherwise agreed by the Director General. Construction works shall not commence until written approval has been received from the Director General. | Closed | CEMP developed and approved 19/8/13 (Letter reference 11/19471) | Enviro Manager | CEMP to include all sections as specified in requirement. CEMP approved 19/8/13. | 4437_001_Approval | CEMP to include all sections as specified in requirement. CEMP approved 19/8/13. |
| MCoA | 6.5 | Pre-construction | As part of the Construction Environmental Management Plan for the project required under condition 6.3 of this approval, the Proponent shall prepare and implement the following sub plans:<br>a) a Construction Flora and Fauna Management Plan to detail how construction impacts on ecology will be minimised and managed. The Plan shall be developed in consultation with the DECCW and include, but not necessarily be limited to:<br>i) details of work practices (such as fencing and construction worker education) to minimise the potential for damage to vegetation and native fauna during construction;<br>ii) weed management measures focusing on early identification of invasive weeds and determining effectiveness of management controls;<br>iii) procedures to install and monitor mitigation measures, such as nest boxes, relocated hollows and fauna fencing for effectiveness and maintenance; and<br>iv) an auditing program for construction work practices to ensure that there is no impact on threatened species or their habitats additional to that already permitted.<br>b) a Construction Heritage Management Plan to detail how construction impacts on Aboriginal and non-Aboriginal heritage will be minimised and managed. The Plan shall be developed in consultation with the Department's Heritage Branch, the DECCW, Kempsey Aboriginal Land Council and the Dunghutti Elders group and shall include, but not necessarily be limited to:<br>i) results and recommendations arising from investigations into | Closed | CEMP developed and approved 19/8/13. | Enviro Manager | CEMP developed and approved 19/8/13.<br><br>Flora and Fauna Management Sub Plan in CEMP<br><br>Heritage Management Sub Plan in CEMP<br><br>Noise and Vibration Management Sub Plan in CEMP<br><br>Condition satisfied. | 4437_001_Approval | The 12 Mth executive review of the CEMP will be completed in Sept 2014. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| | | | Potential Archaeological Deposits;<br>ii) a strategy for the salvage and curation of salvaged Aboriginal objects;<br>iii) an education program for construction and project supervision personnel on their obligations for Aboriginal cultural materials;<br>iv) procedures to be implemented if previously unidentified Aboriginal objects and / or Non-Indigenous heritage items are discovered during construction; and<br>v) a program for construction work practices to ensure that there is no impact on heritage items additional to that already permitted<br>c) a Construction Noise and Vibration Management Plan to detail how construction noise and vibration impacts would be minimised and managed. The Plan shall be developed in consultation with the DECCW and include, but not necessarily be limited to:<br>i) details of construction activities and a schedule for construction works;<br>ii) identification of construction activities that have the potential to generate noise and/or vibration impacts on surrounding sensitive receivers, particularly residential areas;<br>iii) a detailed description of what actions and measures would be implemented to ensure that these works would comply with the relevant noise and vibration criteria/ guidelines;<br>iv) procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints; and<br>v) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, how the results of this monitoring would be recorded; and, if any non-compliance is detected. | | | | | | |
| MCoA | 6.6 | Commissioning | Prior to the commencement of operation, the Proponent shall incorporate the project into its existing environmental management systems and shall ensure that key operational environmental impacts are monitored and managed, including but not limited to:<br>a) ecological factors, including effectiveness of fauna crossings;<br>b) noise impacts;<br>c) soil erosion and the discharge of sediment and other pollutants to lands and/or waters; and<br>d) landscaping and urban design. | Open | RMS Responsibility, though Thiess may operate under RMS OEMP for Landscape Maintenance Works | - | N/a at this time. | | Not applicable to this period. |
| SoC | EM1 | Pre-construction | A construction environmental Management plan will be prepared and implemented | Closed | CEMP prepared and approved on the 19/8/13 | Enviro Manager | CEMP - Condition satisfied. | Approval | As per previous reporting period. The 12 Mth executive review of the CEMP will be completed in September 2014. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | C1 | Construction | Newsletters and media releases will be used regularly to provide project updates. The newsletters and media releases will provide contact details and phone numbers of relevant project staff. | Open | Include in CIP | Community Liaison | CIP - Condition satisfied. | http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html | Condition satisfied and ongoing. Details available on the RMS website http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html |
| SoC | C2 | Construction | A project internet site which contains periodic updates of work progress, consultation activities and proposed work schedules will be established prior to the commencement of pre-construction work. The internet site will be regularly updated during the construction phase. The internet site will also provide a description of relevant approval authorities and their areas of responsibility and contact details and phone numbers of relevant project staff. | Open | Include in CIP | Community Liaison | CIP - Condition satisfied and monitoring/ updating is ongoing. | http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html | Condition satisfied and ongoing. Details available on the RMS website http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html |
| SoC | C3 | All Stages | A 24 hour, toll free complaints and community information telephone number will be established for the Proposal and will be advertised, prior to the commencement of pre-construction activities. | Open | Include in CIP. The following number has been set up : 1800 668 240 | Community Liaison | Advertised on the Project website and on community correspondence | The following number has been set up : 1800 668 240 | Condition satisfied and ongoing. he following number has been set up : 1800 668 240 |
| SoC | C4 | All Stages | A system to receive, record, track and respond to complaints within a specified timeframe will be established. | Open | Include in CIP/ Tracked via *Consolation Manager* (database) | Community Liaison | CIP - Condition satisfied and monitoring/ updating is ongoing. | http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html | Condition satisfied and ongoing. Consultation Manager (database) in use. |
| SoC | C5 | Construction | Property owners will be consulted about the implementation of mitigation measures that affect their property and any issues raised will be addressed where reasonable and feasible. | Open | Flood consultation records available at: \\tcfs.thiess.aus\Groups\NSW\F2E\02 Community\02_06 Communications & Notifications\02_06_06_Consultation\Flood impacts | Community Liaison Enviro Manager | CIP - Condition satisfied and monitoring/ updating is ongoing. | http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/project-documents.html | Condition satisfied and ongoing. |
| SoC | T1 | Pre-construction | Pre-construction road condition reports will be prepared for all roads likely to be used by construction traffic. | Closed | Road Condition Reports to be developed. | Traffic/ Design/ Community Managers | Road dilapidation information. Condition satisfied. | G:\NSW\F2E\04 Manage Project\04_06 Execute the Works\Road Delap\F2E DILAP | Condition satisfied and closed. |
| SoC | T2 | Commissioning | Post–construction road condition reports will be prepared for the roads assessed in Statement of Commitment T1. Copies of the reports will be provided to the relevant roads authority. Any damage resulting from construction, (not normal wear and tear), will be repaired at the proponent's cost, unless an alternative arrangement is agreed with the relevant roads authority. | Open | Include reference to Council correspondence | Traffic Manager/ Design Manager | Applicable to post construction period. | | Not applicable to this period. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | T3 | Construction | Construction vehicle movement arrangements will be developed to minimise impacts on all road users (including pedestrians, vehicles, cyclists and disabled persons) and to maintain pre-construction road / intersection capacities, with specific regard to any other road works in the area, local traffic movement requirements and peak traffic volumes, including long weekends and holiday periods. | Open | Construction Traffic Management Sub Plan./ TCPs e.g. \\tcfs.thiess.aus\Groups\NSW\F2E\04 Manage Project\04_06 Execute the Works\Traffic Management\TCPS. | Traffic Manager | Traffic Management Plan - condition satisfied and monitoring/ updating is ongoing. | TMSP | Condition satisfied through the development of Traffic Management Plans |
| SoC | T4 | Design | Where any legal property access is temporarily or permanently affected by the project, alternative property access to an equivalent standard will be provided where feasible and reasonable or other alternative arrangements agreed in consultation with the property owner. | Open | Consultation undertaken by RMS. Location and requirements of the property accesses provided in SWTC Appendix 9. | RMS | Consultation undertaken by RMS. Location and requirements of the property accesses provided in SWTC Appendix 9. Design compliance demonstrated in DC001, DC002, and DC003 and PA design lots. | Property Agreements PA Design Lots | Property adjustment works ongoing.<br>An addendum to the Property Adjustment Consistency Reviews was prepared to assess post approval changes in the IFC design drawings. |
| SoC | T5 | Construction | In consultation with the Department of Primary Industries (Forests), access to and within State Forest lands adjacent to the Proposal will be retained for forestry operations, fire management activities and recreation purposes. | Closed | Access to and within State Forest lands adjacent to Stage 2 works will be retained for forestry operations, fire management activities and recreation purposes. | RMS | Consultation undertaken by RMS. Location and requirements of the property accesses provided in SWTC Appendix 9. Design compliance demonstrated in DC001, DC002, and DC003. Condition satisfied. | | Condition satisfied by RMS and closed. |
| SoC | CN1 | Pre-construction | Pre–construction noise monitoring and traffic counting will be undertaken at locations used to identify the background noise levels for the Environmental Assessment and/or at representative noise sensitive locations. | Closed | Noise monitoring detailed in the NVMP and Operational Noise Management Plan. | Enviro Manager | Noise and Vibration Management Sub Plan in CEMP/ Monitoring completed and background data used in the development of NVMP.<br>Condition satisfied. | NVMP | Condition satisfied and closed. Refer to the ONMP. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | CN2 | Construction | Construction activities will be restricted to construction hours for the Proposal. The hours will be 7am to 6pm Monday to Friday; 8am to 1pm Saturdays and no work on Sunday or public holidays except in accordance with commitment CN4 below. | Open | Requirement included in NVMP | Construction Manager Enviro Manager | Noise and Vibration Management Sub Plan in CEMP.<br>This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports.<br>Works outside of the specified working hours managed through the Out of Hours Works Permit as outlined in the NVMP. | NVMP | Refer to MCoA 2.14 above |
| SoC | CN3 | Construction | Rock breaking, rock hammering, sheet piling, pile driving and any similarly noisy project activity will be scheduled only between the hours of 9am to 3pm, Monday to Friday; and 9am to 12 noon, Saturday except in accordance with commitment CN4 below | Open | Requirements included NVMP. NVMP approved by DP&E on 19/8/13. | Construction Manager Enviro Manager | Noise and Vibration Management Sub Plan in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports. | NVMP | Pile driving activities completed in this reporting period. Works were extended to the Standard Construction Hours following consultation and agreement with affected residences. All consultation is recorded in Consultation Manager (database). |
| SoC | CN4 | Construction | Works outside standard construction hours will be limited to:<br>(i) Any works that do not cause construction noise to be audible at any sensitive receivers; or<br>(ii) The delivery of materials required outside these hours by the Police or other authorities for safety reasons; or<br>(iii) Emergency work to avoid the loss of lives, property and/or to prevent environmental harm; or<br>(iv) Any other work as agreed after appropriate consultation with affected residences, the Department of Environment and Climate Change, and local council. | Open | Requirements included NVMP. NVMP approved by DP&E on 19/8/13. | Construction Manager Enviro Manager | Noise and Vibration Management Sub Plan in CEMP.<br><br>This monitored through weekly inspections, Monthly Environmental Performance Reports, the Out of Hours notifications & associated procedures, as well as within the 6 monthly compliance reports.<br><br>Works outside of the specified working hours managed through the Out of Hours Works Permit as outlined in the NVMP. | NVMP | Refer to MCoA 2.14 above |

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| SoC | CN5 | Construction | All plant and equipment will be well maintained and fitted with adequately maintained silencers which meet the plant and equipment design specifications. | Open | Included in NVMP controls - Table 8.1. Also plant maintenance records saved at G:\NSW\F2E\07 Health and Safety\07_15 Plant & Equipment\7.15.15 Plant Register Documentation\Plant Documentation. | Plant Manager | Noise and Vibration Management Sub Plan in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, as well as within the 6 monthly compliance reports. | NVMP | Condition satisfied in previous reporting period through the NVMP. |
| SoC | CN6 | Construction | Prior consultation and written notification will be undertaken with nearby residents that may be affected by noise or vibration generating activities. | Open | Included in CIP & CEMP. | Community Liaison Enviro Manager | Noise and Vibration Management Sub Plan in CEMP, CIP.<br><br>Ongoing implementation of the CIP and NVMP. | Regular community updates/ community information sessions and direct consultation e.g. piling operations. | Condition satisfied and ongoing when works outside of standard construction hours or high noise impact works are proposed. All consultation is recorded in Consultation Manager (database). |
| SoC | CN7 | Construction | Public address systems (including amplified telephone ringers) used at any construction site will not be used outside normal construction hours except in accordance with commitment CN4 above. Public address systems will be designed to limit noise spillage off-site. | Open | Included in NVMP controls. | Construction Manager | PA not currently used however PA system may be used at site compound. This site is in excess of 200m from residents. | NVMP | A public address systems has not been installed to date. |
| SoC | CN8 | Construction | Blasting trials will be undertaken if blasting is to be used or if production blasting fails to comply with the relevant performance criteria, with results from the trials used to modify / determine site-specific blast designs to satisfy relevant performance criteria. | Closed | Blasting to be identified and adequate time for trials to be scheduled in prior to blasting. Site specific blast designs will be formulated following trials. | Construction Manager | Noise and Vibration Management Sub Plan in CEMP - see Table 8.1 (NV22).<br>This monitored through weekly inspections, Monthly Environmental Performance Reports, as well as within the 6 monthly compliance reports.<br><br>Not applicable to date. | NVMP | Not applicable to this period. No blasting required on the project to date. |
| SoC | CN9 | Construction | All reasonable attempts will be made to contact sensitive receivers located within 500 metres of a blast location. The contact will be made at least 48 hours before a blast and advice given to the receiver will include a schedule of blast time(s) and a telephone number and contact name. | Closed | No blasting anticipated - to be reviewed should blasting be nominated as a construction methodology. | Community Liaison Enviro Manager | Noise and Vibration Management Sub Plan (see Table 8.1 (NV20)) in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, as well as within the 6 monthly compliance reports.<br><br>Not applicable to date. | NVMP | Not applicable to this period. No blasting required on the project to date. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | CN10 | Construction | Construction noise and vibration monitoring will be undertaken at sensitive locations during construction to determine the effectiveness of mitigation strategies. | Open | Scheduled and 'as necessary' noise monitoring included in the NVMP/ Monthly Reported. | Enviro Manager | Noise and Vibration Management Sub Plan in CEMP. This monitored through weekly inspections, Monthly Environmental Performance Reports, as well as within the 6 monthly compliance reports. | NVMP | Noise monitoring undertaken and reported monthly in the Environmental Performance Reports |
| SoC | ON1 | Design | A reasonable and feasible approach will be adopted to limit operational noise impacts in accordance with the NSW Government's Environmental Criteria for Road Traffic Noise. The approach to operational noise impacts will be finalised during detailed design and in consultation with relevant property owners. | Closed | Considered and applied in the development of the Operation Noise Management Report | Design Manager | An Operational Noise Management Report has been developed and The Dept. of Planning & Environment approved the ONMP (v.D5 April 2014) on the 2 May 2014 (letter reference MP06_0224). | ONMP | The Dept. of Planning & Environment approved the ONMP (v.D5 April 2014) on the 2 May 2014. Refer to Incite Correspondence F2E-RMS-CORR-00156<br>Status updated to closed. |
| SoC | ON2 | Design | Operational noise mitigation measures (e.g.. low- noise pavement, road design, noise mounds or noise barriers) will be further reviewed and optimised during detailed design and installed at the locations identified and set out in section 3.7.1 and 3.7.2 of Technical Report 3 – Noise and Vibration Assessment. | Closed | ONMP - see MCoA 2.20. | Design Manager | An Operational Noise Management Report has been developed and The Dept. of Planning & Environment approved the ONMP (v.D5 April 2014) on the 2 May 2019 (letter reference MP06_0224). | ONMP | Not applicable to this period (operational phased commitment). |
| SoC | ON3 | Design | Architectural treatments will be provided to properties identified in section 3.7.3 of Technical Report 3 – Noise and Vibration Assessment following detailed design and consultation with the property owner. | Open | Architectural treatments to be provided | RMS | 53 properties have been identified as requiring architectural treatments. RMS are currently preparing contracts for the work. It is anticipated that works would be scheduled to commence early 2015 and take approximately 6 months to complete. | | Scoping inspections have continued to been undertaken and contracts are being developed. |
| SoC | ON4 | Operation | Monitoring of operational noise will be undertaken between six months and one year after opening along the proposed highway upgrade. Should the monitoring indicate traffic noise levels exceeding the relevant noise level criteria in NSW Government's Environmental Criteria for Road Traffic Noise; the RTA will investigate and implement further "reasonable and feasible" mitigation measures. The selection of these measures will be undertaken in consultation with affected property owners. | Open | Considered and applied in the development of the Operation Noise Management Report | Design Manager | Operation phase commitment. | ONMP | Not applicable to this period (operational phased commitment). |
| SoC | F1 | Design | Waterway crossings will be designed to facilitate fish passage where appropriate and in consultation with the relevant government agencies. | Closed | Compliance requirements provided in SWTC Appendix 5. Design compliance demonstrated in | Enviro Manager | Cross Drainage packages DC001, DC002, and DC003. Temp Works EWMS F2E-00G-WMS-ENV-012-01. All prepared in consultation and EPA. | G:\NSW\F2E\01 Environment\2 Planning\2.11 EWMS\F2E-00G-WMS-ENV-012-01 Temp Access works near waterways\F2E- | Consultation between RMS with EPA and DPI(Fisheries) for Boriragalla Creek ongoing during this reporting period. Closed for all other waterways. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
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| | | | | | Cross Drainage packages DC001, DC002, and DC003. Consultation with Fisheries has also occurred for temporary platforms and access tracks. Also refer to MCoA 2.8. | | | 00G-WMS-ENV-012-01 | |
| SoC | F2 | Construction | Frog breeding ponds suitable for the green-thighed frog will be designed and constructed in consultation with a suitably qualified and experienced ecologist knowledgeable in the breeding requirements of this species. | Open | Compliance requirements provided in SWTC Appendix 4 and Appendix 14. Consultation with OEH undertaken. Design compliance demonstrated in Longitudinal Drainage packages DL001, DL002, and DL003. | Enviro Manager | DL001, DL002, and DL003<br><br>Areas for construction of frog breeding ponds were included within the ecological monitoring program, which was approved by DP&E on 25.07.13 | Refer to Keystone for design reports/ drawings. | No update this period. |
| SoC | F3 | Design | Riparian vegetation disturbed by the Proposal will be replaced with endemic species to maintain creek bank stability. | Closed | Species for riparian vegetation specified in the UD&LMP and Landscape Design Packages (LA0002). | Enviro Manager | UD&LP to be submitted to DP&E as per RMS RFI response.<br>Original extension granted til 28 February 2014.<br>DP&E extension letter ref: 4483_001_urban_design_ extension<br>Following consultation and revision, the Department approved the UD&LMP on the 2 June 2014 (letter reference 09/03204). | FFMP/ UD&LMP | Reinstatement works in accordance with LA001 & LA 002 has commenced with progressive hydro mulching of batters. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | F4 | Construction | Threatened plants in proximity to the Proposal to be retained will be protected during construction through exclusion fencing, warning sign posting and education of construction workers through the site induction process. | Open | Included in SWTC App reqmts / included in Flora and Fauna Sub Plan controls. | Enviro Manager | CEMP; Flora & Fauna Sub-Plan/ site induction/ GDP. Monitored via weekly inspections, 6 mthly compliance reports.<br><br>Controls to address condition included in the FFMP. Implementation of these controls including inductions, delineation of clearing limits and environmental NO GO signage ongoing during this quarter. | FFMP. | Implementation of controls to protect threatened plants in the proximity of the proposal ongoing. |
| SoC | F5 | Pre-construction | The feasibility of relocating individuals of Maundia triglochinoide directly affected by the Proposal to suitable habitat on nearby land in secure tenure will be further investigated and resultant action determined on the basis of expert advice. | Closed | Final Maundia translocation plan recommended that translocation was not reasonable or feasible. No further actions to implement. | RMS | Final Maundia translocation plan was provided to the DP&E on 13.5.13, which recommended that translocation was not reasonable or feasible.<br><br>No further actions to implement. | Flora & Fauna Sub-Plan / 2121213 Maundia Report-VersionB | Condition satisfied and closed |
| SoC | F6 | Construction | A suitably qualified and experienced ecologist will undertake specific searches for native fauna immediately prior to clearing activities or demolition activities. Searches will include checks for nests and large hollow-bearing trees and target habitats of hollow-dwelling species, koalas, bats and frogs. | Open | Included via prior project pre-clearing system (FFMP). | Project Ecologist | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. | FFMP | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. |
| SoC | F7 | Construction | Stands containing hollow-bearing trees will be cleared using a two stage clearing process with adjacent non hollow-bearing trees to be cleared first. | Open | Included via prior project pre-clearing system (FFMP). | Project Ecologist | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. | FFMP | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. |
| SoC | F8 | Construction | Fauna species found in areas to be cleared, immediately prior to clearing activities, will be relocated by qualified ecologist into suitable habitat as close as possible to the area in which they were found. | Open | Included via prior project pre-clearing system (FFMP). | Project Ecologist | FFMP | | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. |
| SoC | F9 | Construction | Strategies will be developed to deal with incidents involving individual animals during construction activities in consultation with local Department of Environment and Climate Change officers, WIRES and / or other relevant local wildlife carer groups. | Open | Included via prior project pre-clearing system (FFMP). | Project Ecologist | FFMP | | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. |
| SoC | F10 | Construction | Habitat features and resources for native fauna (such as hollow-bearing trees, hollow logs and bush rocks), identified by a qualified ecologist, will be distributed along the route of the Proposal. Such relocation will be undertaken in a manner to limit damage to existing vegetation and will not occur in high condition remnant vegetation. | Open | Included in FFMP of CEMP | Enviro Manager | Flora and Fauna Management Sub Plan in CEMP/ will be monitored through regular inspections, & maintenance inspections. | FFMP. | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | F11 | Construction | Nest boxes will be utilised to help offset the removal of hollow-bearing trees in areas where habitat trees are in short supply (<4 suitable trees per hectare) and in consultation with adjacent property owners. If used, nest boxes will be fixed to suitable retained vegetation and in a way that does not damage the tree. | Closed | Included via prior project fauna design provisions and fauna management strategies (FFMP). | RMS | FFMP - Controls to address condition included in the FFMP. Nest box installation was completed in December 2013 (250 nest boxes have been installed to date). Condition now closed. | FFMP | Condition satisfied and closed. |
| SoC | F12 | Design | Culverts and bridge structures identified during the detailed design as having a potential role in fauna crossing will be designed to facilitate fauna movements. | Closed | Included via prior project fauna design provisions and fauna management strategies (FFMP). | - | Provided within design reports DC001, DC002, and DC003 –<br><br>Condition satisfied with the exception of Borirgalla Creek. Consultation regarding the fauna underpass for the highway and service road are ongoing. | FFMP | Condition satisfied with the exception of Borirgalla Creek. Consultation between RMS with EPA and DPI (Fisheries) for Boriragalla Creek ongoing during this reporting period. Closed for all other waterways. |
| SoC | F13 | Design | Expert advice will be sought to assist in identifying the need for, and location of, glider crossing points. If required, and in consultation with relevant government agencies, the location and design of crossing points will be incorporated into the Proposal. | Closed | SWTC App4 4.9 | - | Compliance requirements provided in SWTC Appendix 4, Appendix 5 and Appendix 14. Road furniture packages RF000, FR001, RF002, RF003. Consultation with EPA (Ian Gaskell) with regard to glider crossings has occurred. | | Expert advice sought from Ben Lewis regarding post clearing sighting of glider crossings. RFI will be raised to capture any proposed changes to locations to those illustrated on the IFC drawings |
| SoC | F14 | Construction | Fauna exclusion fencing (e.g.. floppy-top fencing) will be erected along the Proposal at appropriate locations to direct fauna movement towards fauna crossing structures. | Open | Included in SWTC 5.18, SWTC App 4 4.14 and App 5 5.4. Demonstrated compliance in RF000 | - | Approved RF000 design package. Installation of fauna fencing has commenced. Some minor design amendments near Forestry land being considered by RMS. | | Installation of fauna fencing ongoing. Following consultation with ecological expert Ben Lewis , an RFI has been raised and approved by the RMS and PV for the design of the Phascogale fence and combined Phascogale and Frog Fence (refer to Incite F2E-TPL-RFI-00287). |
| SoC | F15 | Design | Flora species used in landscaping will be selected such that wildlife is not attracted for feeding or other purposes. | Closed | Included in landscape management plan & UD&L designs. | Design Manager Enviro Manager | UD&LP to be submitted to DP&E as per RMS RFI response. Original extension granted til 28 February 2014. DP&E extension letter ref: 4483_001_urban_design_extension Following consultation and revision, the Department approved the UD&LMP on the 2 June 2014 (letter reference | UD &LMP | No update this compliance period. Design phase closed. |

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| | | | | | | | 09/03204). | | |
| SoC | F16 | Operation | Adjoining vegetation will be maintained to limit overhang of fauna fences or other barriers. | Open | Included in FFMP of CEMP/ Landscape Maintenance Plan | Enviro Manager | Flora and Fauna Management Sub Plan in CEMP<br>Clearing of limits inspected to lop overhanging or unsafe trees. | Included in Section 8 of the UD&LMP | Not applicable to this period (operational phased commitment). |
| SoC | F17 | Construction | Water quality control measures will be installed as early as possible in the construction program and will be designed / selected to meet identified receiving water objectives. | Open | Water to be treated as per Soil and Water Mgt Plan, all water to be tested prior to release. Also a requirement of the EPL. | Enviro Manager | Demonstrated compliance in Approved Earthworks and early drainage (EA000, EA001, EA002 and EA003) design package and Longitudinal Drainage (DL000, DL001, DL002, DL003) design packages. .<br><br>Soil and Water Management Plan in CEMP. Monitored via weekly inspections, 6 mthly compliance reports.<br><br>Installation of water quality control measures including clean water diversion drains and sediment basins has occurred during. | SWMP | Construction of construction and operations sediment basins and swale drains ongoing during period.<br>Permanent spillways and basin furniture being installed in operational basins. |
| SoC | F18 | Construction | The limits of clearing and other native vegetation disturbance will be clearly marked on relevant work plans and on site prior to clearing. | Open | Included in LMP see S3.1.4. Also clearing limits to be physically delineated. | Enviro Manager | Flora and Fauna Management Sub Plan in CEMP. Monitored via weekly inspections, 6 mthly compliance reports. Limits of clearing marked by surveyors prior to commencement of clearing and verified for G40 Hold Point submission. Maintenance of flagging tape ongoing. | FFMP. | Controls to address condition included in the FFMP. Implementation of these controls is ongoing. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | F19 | Operation | Weeds in areas disturbed by construction activities will be managed for a minimum of two years after construction completion. | Open | Landscape maintenance plan (check) | Enviro Manager | Not applicable to this period. | Included in Section 8 of the UD&LMP | Not applicable to this period (operational phased commitment). |
| SoC | F20 | Design | Native and locally indigenous plants will be used in the landscaping and disturbed areas will be progressively revegetated. | Closed | Included in FFMP (Table 5.1) and UD&LMP. | Design ManagerEnviro Manager | Flora and Fauna Management Sub Plan in CEMP / UD&L UD&LP to be submitted to DP&E as per RMS RFI response. Original extension granted til 28 February 2014. DP&E extension letter ref: 4483_001_urban_design_ extensionFollowing consultation and revision, the Department approved the UD&LMP on the 2 June 2014 (letter reference 09/03204). | FFMP. | Reinstatement works in accordance with LA001 & LA 002 has commenced with progressive hydro mulching of batters. |
| SoC | F21 | Construction | A compensatory habitat (or other suitable offset) package will be developed in consultation with the Department of Environment and Climate Change and other relevant government agencies. | Open | Follow up with RMS | RMS | RMS have an extension for the submission of the Biodiversity Offsets Package until 30 September 2014. | Objective reference: SF2012/005795 | Biodiversity Offset Package is currently being developed. The package will be submitted to DP&E and EPA. |
| SoC | F22 | Pre construction, Construction and Operation | An adaptive monitoring program will be developed and implemented to allow the effectiveness of mitigation and offset measures to be assessed and allow for their modification if necessary. The program will be for a minimum of three years after construction completion. | Open | RMS has provided ecological Monitoring Program (Doc ID 120) plus updates. | RMS | Flora and Fauna Management Plan in CEMP. 2141112Frederickton-Eungai Ecological Monitoring Program Version 5 | Frederickton to Eungai Ecological monitoring program, Version 5 | An adaptive ecological monitoring program was developed and approved by DP&E on 25.07.13. Targeted Brush-tailed Phascogale and Glossy Black Cockatoo monitoring occurred in May 2013 in accordance with the monitoring program. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | AH1 | All Stages | Any Aboriginal heritage items directly affected by the Proposal will be managed in consultation with Aboriginal stakeholders and the Department of Environment and Climate Change | Open | GDP used to show heritage sites that require further actions, however the majority of sites/PADs have been investigated and salvaged. | Enviro Manager Community Liaison | Heritage Mgt Plan of CEMP / GDP system<br><br>Salvage at KE14 and KE15 was completed on the 10.12.2013. The works included a site walk over of the area to be disturbed by construction activities, followed by removal of the topsoil into bunds and a second review by the Aboriginal Representatives (2 from KLALC and 2 from the Dunghutti Elders) and 2 Archaeologists. There were no artefacts found during these monitoring works and thus no further investigations were deemed warranted. | HMP | Incident investigation relating to the placement of a topsoil mound in an area identified as being archaeologically sensitive is ongoing in this reporting period. A factual report describing the incident was provided to RMS for review. Additional supervision of topsoil stripping was completed at KE 14 & 16 on the 3 June and the 11 August 2014 for access tracks on the former Blair property. Representatives from the Dunghutti Elders Council and Kempsey Local Aboriginal Land Council were in attendance for the works. |
| SoC | AH2 | Design | Aboriginal heritage sites and potential archaeological deposits will be clearly identified on construction drawings. | Closed | Heritage to be included in all Induction training, as well as toolbox talks whenever working nears areas of known heritage. Link to GDP folder. | Enviro Manager | Training section of CEMP + Heritage Mgt Plan of CEMP<br>+ Induction GDP, Training section of CEMP + Heritage Mgt Plan of CEMP + Induction;<br>Sites continue to be identified on GDPs and fencing retained in field. | HMP | Sites continue to be identified on GDPs |
| SoC | AH3 | Construction | All relevant construction personnel will receive training on their obligations for protection of Aboriginal cultural materials, including information on site locations, conservation management requirements and legal obligations in regard to Aboriginal cultural materials. | Open | Heritage to be included in all Induction training, as well as toolbox talks whenever working nears areas of known heritage | Enviro Manager | Training section of CEMP + Heritage Mgt Plan of CEMP + Induction;<br>Induction program ongoing. | Induction Program | Condition satisfied through general project induction. Status ongoing. |
| SoC | AH4 | Design | If any part of the project (such as an ancillary facility) is located in an area which has not been subject to detailed Aboriginal heritage field survey and assessment, additional survey and assessment will be undertaken before that part of the project proceeds. | Closed | Consistency Assessments including Heritage Assessment are undertaken for new activities and approved via RMS. | Enviro Manager | Process outlined in CEMP for consistency assessments/heritage assessments.<br><br>Additional potential impacts to heritage addressed through Consistency Assessments for additional works. | Consistency Assessments | New ancillary facility opposite Southern Site Compound covered by former Aboriginal heritage site. The consistency review confirmed that the requirements for this site had been satisfied during the KBA stage of the works. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | AH5 | Construction | Subsurface investigations will be conducted of the identified potential archaeological deposits (PADs) at sites KE PAD 1 to 12 with support from the local Aboriginal stakeholders. Any subsequent salvage that may be warranted would occur at that time. | Closed | Subsurface investigation and salvage of KE14, KE15, KE16 and KE PAD 6 to 12 prior to the commencement of Stage 2 works which may impact on those sites. | Enviro ManagerCommunity Liaison | Included in Heritage Management Plan -App D for PAD 6-12 + KE 14, 15, 16 report. Draft salvage report issued 8/4/13.<br>Sites continue to be identified on GDPsand fencing retained in field | HMP | *Aboriginal Archaeological Assessment: Archaeological test excavation of KE PAD 6-12 and KE PAD 11* was approved by DoPE on 8.05.14<br><br>Additional supervision of topsoil stripping was completed at KE 14 & 16 on the 3 June, and KE 15 on the 28 July 2014 for access tracks on the former Blair property. Representatives from the Dunghutti Elders Council and Kempsey Local Aboriginal Land Council were in attendance for the works. |
| SoC | AH6 | Construction | Aboriginal heritage items identified within the construction corridor and not directly impacted by the Proposal will be marked on construction plans, fenced and signposted where necessary in consultation with DECC and the Aboriginal stakeholders | Open | Implemented via GDP process. | Enviro Manager | Heritage Management Sub Plan in CEMP<br><br>Sites continue to be identified on GDPs and fencing retained in field | HMP | Incident investigation relating to the placement of a topsoil mound in an area identified as being archaeologically sensitive is ongoing in this quarter (incident occurred prior to this reporting period).<br>A factual report describing the incident was provided to RMS for review. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | AH7 | Construction | Aboriginal stakeholders will observe initial ground disturbance works / topsoil stripping and salvage artefacts identified at sites KE14, KE15, KE16 and KE42 (regardless of the results of potential archaeological deposit investigations at each of these sites). | Closed | Apply to KE14, KE15 and KE16. - Monitoring completed 10/12/13. Refer to 140120_Memo re topsoil monitoring v2 | Enviro Manager | Heritage Management Sub Plan in CEMP. Salvage at KE14 and KE15 was completed on the 10.12.2013. The works included a site walk over of the area to be disturbed by construction activities, followed by removal of the topsoil into bunds and a second review by the Aboriginal Representatives (2 from KLALC and 2 from the Dunghutti Elders) and 2 Archaeologists. There were no artefacts found during these monitoring works and thus no further investigations were deemed warranted. | HMP | Additional supervision of topsoil stripping was completed at KE 14 & 16 on the 3 June, and KE 15 on the 28 July 2014 for access tracks on the former Blair property. Representatives from the Dunghutti Elders Council and Kempsey Local Aboriginal Land Council were in attendance for the works. |
| SoC | AH8 | Construction | If any presently unknown Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find will cease until Aboriginal heritage specialist advice is obtained | Open | Included in Project Induction/ HMP. | Enviro Manager Construction Manager | Heritage Management Sub Plan in CEMP/ relevant procedures.<br><br>No presently unknown Aboriginal heritage items are uncovered during the works to date. | HMP | Condition satisfied through general project induction.<br><br>A tooth that appeared to be a unexpected heritage item was discovered during drilling for installation of soft soil settlement instrumentation in Fill 19 (CH 28670, floodplain north of Johnson Creek) on the 7 March 2014.<br>The drilling contractor was assessing the cuttings from the drilling at a depth of approximately 4-6m. He happened by chance to catch what appears to be a tooth. The RMS Standard Management Procedure – Unexpected Heritage Item was implemented. The tooth was confirmed by several experts to NOT be of human origin. |
| SoC | AH9 | All Stages | The RTA will comply with the NSW Government's Aboriginal Participation in Construction Guidelines. | Closed | Guidelines consulted and referenced in heritage mgt plan. Also included in F2E APP - Indigenous Participation Plan | Enviro Manager HR Advisor | Heritage Management Sub Plan in CEMP | HMP | Implementation through the Indigenous Participation Plan - 06052013. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | - 06052013 Submission1 & 2 | | | | |
| SoC | NAH1 | Construction | An archival record will be prepared for the Ferry Lane Memorial Avenue (Frederickton Memorial Avenue), Frederickton ferry ramp (KEH6), impacted sections of the Frederickton Butter Factory (KEH7) and the early 20th Century house (KEH3) by an appropriately qualified and experienced heritage expert. | Closed | Not applicable. Sites listed in Commitment NAH1 are not within Stage 2. Note this has been completed by NOHC in 2011. | RMS | Archival recording of KEH6, KEH7 and KEH1 has been undertaken. Archival recording of KEH1 was submitted to Kempsey Shire Council in December 2010, with KEH3, KEH6, and KEH7 submitted in September 2011. An addendum to the Frederickton Butter Factory Archival Recording (NOHC 2011) was prepared in December 2011 following a heritage find, was provided to Kempsey Shire Council | HMP | Condition satisfied and closed |
| SoC | NAH2 | Construction | All relevant construction personnel working on site will receive training in their responsibilities under the Heritage Act, 1977. Site specific training will be given to personnel required to work in the vicinity of identified heritage items. | Open | Induction/ HMP | Enviro Manager | Heritage Management Plan/ Project Induction . This is monitored through weekly inspections, Monthly Environmental Performance Reports & associated procedures, as well as within the 6 monthly compliance reports. Training Section of CEMP | HMP | Condition satisfied through general project induction. Status ongoing. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | NAH3 | Construction | Should any additional heritage items be uncovered during works, all works in the vicinity of the find would cease until specialist heritage advice is obtained | Open | Heritage to be included in all Induction training, as well as toolbox talks whenever working nears areas of known heritage | Enviro Manager | Training section of CEMP + Heritage Mgt Plan of CEMP + Induction | Induction Program | Refer to SoC AH8 |
| SoC | NAH4 | Construction | Non-Aboriginal heritage items identified within the construction corridor and not directly impacted by the Proposal will be marked on construction plans, fenced and sign posted where necessary. | Open | Implemented via GDP process. | Supervisor Enviro Manager | Heritage Management Plan in CEMP + GDP<br><br>SEPs in CEMP | HMP | Refer to SoC AH6 |
| SoC | NAH5 | Construction | Pedestrian access will be provided via the re-alignment of Ferry Lane between the two parts of the Ferry Lane Memorial Avenue (Frederickton Memorial Avenue) (KEH1a) separated by the Proposal. | Closed | outside of F2E project scope | RMS / KBA Design Manager | The need for pedestrian access was identified when it was proposed to construct a raised embankment for the highway that would bisect the avenue.<br>The design has since been modified and this section of the Kempsey Bypass comprises an elevated bridge with access along Ferry Lane maintained below. As such, the need to join the two sections of the avenue is no longer pertinent.<br>This was supported at the Ferry Lane stakeholder meeting held on 28.10.10. | N/a | Condition satisfied and closed |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | NAH6 | Construction | The condition and health of the remaining Frederickton Memorial Avenue trees will be investigated by a suitably qualified and experienced arborist. The outcomes of the investigation will be used to develop and implement a restoration plan for the significant remaining elements of the Frederickton Memorial Avenue in accordance with the mitigation measures outlined in Table 17.3 of the Environmental Assessment. | Closed | outside of F2E project scope | RMS / KBA Design Manager | The Ferry Lane Management Plan was finalised following the stakeholder meeting help on 28.10.10. It was submitted to the DP&E and Kempsey Shire Council on 13.12.10. An arborist assessment of the Ferry Lane memorial trees is included in the Ferry Lane Management Plan. | N/a | Condition satisfied and closed |
| SoC | NAH7 | Construction | A plan of management for the Frederickton Memorial Avenue will be developed to assist the local community with its long-term maintenance and management of the Avenue. The plan of management will be developed in consultation with Kempsey Shire Council, Kempsey Macleay RSL Sub Branch and other relevant stakeholders. | Closed | outside of F2E project scope | RMS / KBA Design Manager | Stakeholder meetings were held with KSC, RSL and adjoining property owners on 29.03.10, 28.10.10 and 29.12.12. Ferry Lane Management stakeholder meeting was held on 29 February 2012 in order to finalise the requirements of the Ferry Lane Management Plan. At the meeting a number of outstanding matters relating to Ferry Lane Management Plan were resolved. The participants concluded that no further Stakeholder Meetings, as such, would be required. *Findersia Australis* (Crows Ash) was chosen as the replacement tree. | N/a | Condition satisfied and closed |
| SoC | HF1 | Design | Flood modelling will be undertaken during the detailed design phase to further refine the bridging, drainage structure and flood mitigation requirements for the Macleay River and Collombatti Creek floodplains. | Closed | Refer WMA Water Collombatti Creek Flood Study for Collombatti Creek floodplain in FS000 Appendix K, and HAJV design package FS000 for other floodplains. | Design Manager | Completed. The DP&E has reviewed the Hydrological Mitigation Report and considers that it addresses the department's comments sent by email on September 2013, and generally satisfies the requirements of condition 2.5. | Refer to Keystone for Flood Report<br><br>Refer to email from Michael Young dated 21 Feb 2014. | Condition satisfied and closed in February 2014 |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | HF2 | Design | Reasonable and feasible, property specific flood mitigation measures (e.g.: ring levees, scour protection, etc.) will be further developed and implemented for properties identified as flood affected by the Proposal (in Section 10.2.2 of the Environmental Assessment) in consultation with affected landholders. | Closed | Refer WMA Water Collombatti Creek Flood Study for Collombatti Creek floodplain in FS000 Appendix K, and HAJV design package FS000 for other floodplains - Refer to MCoA 2.5 for further information. | Design Manager | Completed. The DP&E has reviewed the Hydrological Mitigation Report and considers that it addresses the department's comments sent by email on September 2013, and generally satisfies the requirements of condition 2.5. | Refer to Keystone for Flood Report | Condition satisfied and closed in February 2014 |
| SoC | HF3 | Design | Where reasonable and feasible, houses identified as flood-affected by the Proposal (in Section 10.2.2 of the Environmental Assessment) will be raised so that the floor level is a minimum of 0.5m higher than the modelled 100 year ARI peak flood level. In consultation with affected landowners, alternative strategies to reduce damage during flooding would be developed and implemented for those premises that cannot be raised by the minimum required. | Closed | N/a - outside the scope of F2E project | RMS | N/a - outside the scope of F2E project | Refer to Keystone for Flood Report | Condition satisfied and closed in February 2014 |
| SoC | HF4 | Design | Stock mounds, yards and truck loading facilities will be provided for affected landholders along South West Rocks Road to assist in the refuge and / or evacuation of stock during floods. The location of the facilities will be determined in consultation with the affected landowners. | Closed | Not part of the F2E SWTC. | RMS | N/a | N/a | Consistency assessment in preparation for two (2) cattle refuge flood mounds (KEZ2 & 5) on RMS property near Raymond's Land and private property at Kemps Access. Approval pending. |
| SoC | HF5 | Design | A levee and associated flood control devices will be constructed at Frederickton prior to the commencement of construction of the Proposal on the Macleay River floodplain. | Closed | Not part of the F2E SWTC. | RMS | N/a | N/a | Na. to F2E |
| SoC | SW1 | Construction | Water quality will be monitored upstream and downstream of the project site to determine the effectiveness of mitigation strategies. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. Condition satisfied. | SWMP | Condition satisfied in previous reporting period through SWMP. Water quality monitoring undertaken and reported monthly in the Environmental Performance Reports. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | SW2 | Construction | Construction activities that could cause soil erosion or have the potential to discharge sediment from the site during construction will be identified and control methods and techniques will be implemented during those activities. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Demonstrated compliance in Approved Earthworks and early drainage (EA000, EA001, EA002 and EA003) design package and Longitudinal Drainage (DL000, DL001, DL002, DL003) design packages. .<br><br>Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting.<br><br>PESCPs. | SWMP | Managed through the preparation, review and implementation of Progressive Erosion and Sediment Control Plans that are reviewed by the Project Soil Conservationist |
| SoC | SW3 | Construction | Where feasible and reasonable, the area of soil exposure during construction will be minimised | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | SWMP | Managed through the preparation, review and implementation of Progressive Erosion and Sediment Control Plans that are reviewed by the Project Soil Conservationist |
| SoC | SW4 | Construction | There will be progressive revegetation of earthworks areas and stabilisation and restoration works | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | SWMP | Reinstatement works in accordance with LA001 & LA 002 has commenced with progressive hydro mulching of batters. |
| SoC | SW5 | Construction | Specific construction methods will be developed and implemented for in-stream works in consultation with relevant government agencies to limit water quality impacts. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. Consultation with EPA and DPI Fisheries occurring with regard to these works through the ERGs. | SWMP | Consultation between RMS with EPA and DPI (Fisheries) for Boriragalla Creek ongoing during this reporting period. Closed for all other waterways.<br><br>EPA have also investigated soft scour protection for fauna crossings which RMS are investigating. |
| SoC | SW6 | Construction | Erosion and sediment control measures installed during construction will be regularly inspected including after each rainfall event that causes runoff to occur from the site and maintained to ensure the controls are working efficiently and effectively. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Condition satisfied through the approved Soil and Water Management Plan. Monitored via regular inspections. | SWMP | Conditions satisfied through site inspections recorded in Thiess iForm and Environmental inspection Portal. Inspection records (post rainfall, soil conservationist, weekly inspections and RMS joint inspections) saved to Incite under records > environmental > site inspections. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | SW7 | Design | Design requirements for construction and operation phase water quality control structures will be determined in consultation with relevant government agencies to limit water quality impacts on the basis of a site-specific investigation that considers the sensitivity of the receiving environment and the proximity of the discharge point to receiving waters. | Closed | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Demonstrated compliance in Approved Earthworks and early drainage (EA000, EA001, EA002 and EA003) design package and Longitudinal Drainage (DL000, DL001, DL002, DL003) design packages. .<br><br>Soil and Water Management Plan in CEMP. Monitored via weekly inspections, 6 mthly compliance reports. | SWMP | Design phase condition closed. |
| SoC | SW8 | Construction | Rumble grids or other similar devices will be installed at key entry and exit points (where there is the potential for soil tracking) to minimise the tracking of soil and particulates onto local paved road. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. Progressive installation of rumble grids has occurred to date. | SWMP | Control included in the SWMP. Implementation of these controls is ongoing. |
| SoC | SW9 | Construction | Areas of creek banks and river banks, within the Proposal boundaries, at risk of erosion as a result of the Proposal will be identified and scour protection will be installed, as necessary, to limit the erosion. Fish passage and fauna movement issues will be considered and addressed when developing and installing the scour protection measures | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | SWMP | Waterway inlet and outlet scour protection treatments specified in the Cross Drainage design packages (DC-00#). Sites regularly inspected during ERG site inspections with RMS, EPA and Fisheries. |
| SoC | SW10 | Construction | Culverts and permanent stream protection measures will be installed as early as possible in the construction program to facilitate transverse drainage during the early stages of construction | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Cross Drainage packages DC001, DC002, and DC003. Temp Works EWMS F2E-00G-WMS-ENV-012-01. Cross drainage construction works occurring in accordance with DC001, DC002, and DC003 in all zoned this reporting period. | SWMP | Culverts have been installed as early as possible in the construction program with the exception of permanent culverts in areas of soft soil settlement. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | SW11 | Construction | The potential for changes in the groundwater table will be investigated before any major earthworks (defined as a cut or fill area with depth or height exceeding five metres) are undertaken. Where a potential for change is identified, the significance of the change and any resultant impacts will be determined and where necessary, measures to manage the changes will be designed and implemented in consultation with relevant government agencies. | Closed | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | The Geotechnical Interpretation Report and Earthworks Design (Design Package GT002) satisfies the requirements for assessment of the predicted and acceptable effects to groundwater. Based on the findings of the Geotechnical Interpretation Report and Earthworks Design, Thiess conclude that there is no further requirement for groundwater bore monitoring to compare the actual effects to the predicted and acceptable effects resulting from the project works. This monitoring requirement will be achieved by visual observation of seepage into the cut faces and reported in the Environmental Impacts Report that will be prepared prior to the date of construction completion (as referenced in the Construction Environmental management Plan Appendix A15 – Monitoring Schedule). | SWMP | Request for Agreement was approved in relation to SWTC clause 2.14 (c) - Monitoring of actual groundwater conditions (F2E-TPL-RFAG-00014). Based on the predicted effects of the cuts to licensed extraction bores and hanging swamp, the associated monitoring requirement is 'none' and as monitoring of groundwater bores will cease. RMS and PV agreed with the RFAG. Status changed to closed.Condition closed in March - May period. |
| SoC | SW12 | Construction | Areas of potential acid sulfate soils (PASS) and actual acid sulfate soils (ASS) will be identified and the oxidisation of acid sulfate soil material will be limited, any exposed acid sulfate soil will be neutralised and surface water drainage and potential acid runoff will be controlled. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting.<br><br>Acid Sulphate Soil Treatment Area (ASSTA) established and identified in the EPL. | SWMP | Area of ASS risk identified in the SWMP, Appendix C. Material excavated from these area have been taken to ASS treatment areas that have been identified on the EPL where they are neutralized with lime in accordance with the Acid Sulphate Soil Management Strategy. Treated ASS is placed within the road formation. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | SW13 | Construction | Containment strategies will be identified and implemented to ensure that any acidic leachate associated with the oxidation of acid sulfate soil is contained for treatment or removal and is prevented from entering downstream watercourses. | Open | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting.<br><br>Acid Sulphate Soil Treatment Area (ASSTA) established and identified in the EPL. | SWMP | Control measures are contained within the Acid Sulphate Soil Management Strategy. |
| SoC | AQ1 | Construction | Potential dust sources and dust suppression measures will be identified in consultation with the Department of Environment and Climate Change. | Open | Included within the approved Air Quality Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Soil and Water Management Plan. Monitored via regular inspections and reporting. | AQMP | Controls and monitoring of the AQMP being implemented during construction. No exceedance or unresolved complaints relating to dust during the reporting period. |
| SoC | AQ2 | Construction | A dust monitoring program will be undertaken to determine the effectiveness of dust suppression measures, with dust deposition gauges installed at sensitive locations to determine the effectiveness of dust suppression measures. | Open | Included within the approved Air Quality Management Plan. Monitored via regular inspections and reporting. | Enviro Manager | Included within the approved Air Quality Management Plan. Monitored via regular inspections and reporting. Dust monitoring undertaken and reported monthly in the Environmental Performance Report. Reported in Monthly Environmental Performance Reports and the Six Monthly Compliance Reports. | AQMP | Dust monitoring results are presented in the Monthly Environmental performance reports. Data also published in the six monthly compliance report (http://www.rms.nsw.gov.au/documents/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/frederickton-construction-compliance-report-1-march-2014.pdf). |
| SoC | G1 | Construction | Energy efficient work practices will be adopted to limit energy use. Measures will include conducting awareness programs for all site personnel regarding energy conservation methods and conducting energy audits during the project to identify and address energy waste. | Open | Included within the approved Waste and Energy Mgt Plan. Monitored via regular inspections and reporting. Energy efficiency to be included in all site inductions. | Site Establishment Mgr/ Enviro Manager | Included within the approved Waste and Energy Mgt Plan. Monitored via regular inspections and reporting. Energy efficiency to be included in all site inductions. Induction program ongoing. | Project Induction | Included within the approved Waste and Energy Mgt Plan. Monitored via regular inspections and reporting. Energy efficiency to be included in all site inductions. Induction program ongoing. |
| SoC | G2 | Construction | Plant and office-based equipment (including lights and computers) will be operated in an efficient manner and regularly maintained. If economically available, electrical energy derived from a renewable energy source accredited by the National Green Power Accreditation Steering Group (or equivalent) will be used for the supply of at least 50 per cent of the on-site electrical energy required during construction. | Open | Energy efficiency to be included in all site inductions. | Enviro Manager | Energy efficiency to be included in all site inductions. Induction program ongoing. | | Condition satisfied through general project induction. Status ongoing. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | CS1 | Construction | Further soil contamination investigations will be carried out, within the boundaries of the Proposal, in the area of the Frederickton Interchange and within the South Kempsey commercial area. | Closed | Not applicable. The Frederickton Interchange and South Kempsey commercial area are not within Stage 2. | Enviro Manager | N/a | - | Na. to F2E |
| SoC | CS2 | Construction | If site contamination is identified and the contamination is found to pose unacceptable risk to either the environment or human health receptors a remedial action plan will be developed in consultation with the relevant government authorities and remediation works will be undertaken. | Open | Assess contam land risks: determine controls as necessary. CL mitigation controls included in Soil and Water Management Plan, refer to Appendix F. | Enviro Manager Design Manager | CEMP, SWMP. No new areas of site contamination identified during to date. | Soil and Water Mgt Appendix F. | No update this period. |
| SoC | UD1 | Design | The project will be designed in accordance with the urban design and landscape objectives and principles identified in the Environmental Assessment. | Closed | Managed via Urban Design and Landscape Management Plan. | Enviro ManagerDesign Manager | UD&LMP/ _ Beyond the Pavement – RTA Urban and Regional Design Practice Notes (RTA 2004). _ Pacific Highway Urban Design Framework (RTA 2005). _ Chapter 19 of the Environmental Assessment.The UD&LMP was prepared and submitted to DP&E on the 28.2.14 for review. | UD&LMP | Reinstatement works in accordance with LA001 & LA 002 has commenced with progressive hydro mulching of batters. The UDLMP was approved by the Department of Planning & Environment on the 2 June 2014 (Let ref. 09/03204). |
| SoC | UD2 | Design | The schedule of species to be used in landscaping will include native and locally indigenous plants selected in consultation with a qualified landscape officer. | Closed | Managed via Urban Design and Landscape Management Plan. | Enviro Manager Design Manager | UD&LMP | UD&LMP | Reinstatement works in accordance with LA001 & LA 002 has commenced with progressive hydro mulching of batters.<br>The UDLMP was approved by the Department of Planning & Environment on the 2 June 2014 (Let ref. 09/03204). |
| SoC | UD3 | Construction | Disturbed areas will be progressively revegetated with consideration to related controls such as erosion and sedimentation controls and drainage and future road user safety requirements. | Open | Managed via Urban Design and Landscape Management Plan. | Enviro Manager Design Manager | UD&LMP, _ RMS D&C Specification (Frederickton to Eungai version) R178 - Vegetation. _ RMS D&C Specification (Frederickton to Eungai version) R179 - Landscape Planting. Temporary reinstatement of batters stockpiles has occurred. | UD&LMP | Reinstatement works in accordance with LA001 & LA 002 has commenced with progressive hydro mulching of batters. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | UD4 | Operation | Landscape and rehabilitation works will have a minimum maintenance period of three years. | Open | Managed via Urban Design and Landscape Management Plan. | Enviro Manager Design Manager | _ RMS D&C Specification (Frederickton to Eungai version)<br>R174 - Landscape Maintenance.<br>Refer to UD&LMP | UD&LMP | Not relevant to this period. |
| SoC | HR1 | Construction | Bunded storage areas will be located at least 50 metres away from watercourses and will be established for oils and other hazardous liquids in accordance with Australian Standards. Any spillages will be contained and collected for appropriate disposal. | Open | Included in HRMP | Enviro Manager/ Construction Manager | Addressed in G36 6.12.1 and included in HRMP, monitored via regular inspections. | HRMP | Included in HRMP, monitored via regular inspections. |
| SoC | HR2 | Construction | Activities with the potential for spillage such as refuelling, maintenance of equipment, mixing of cutting oil and bitumen will be conducted in bunded areas or in other areas where suitable containment measures and/or practices are in place to prevent discharge into watercourses. | Open | Included in HRMP | Enviro Manager/ Construction Manager | Condition satisfied in the HRMP.<br>Implementation of controls ongoing. | HRMP | Included in HRMP, monitored via regular inspections. |
| SoC | HR3 | Construction | Potentially hazardous and contaminating activities (such as washing construction plant and handling hazardous chemicals) will be conducted in suitably bunded areas away from watercourses or in other areas where suitable containment measures are in place. | Open | Included in HRMP | Enviro Manager/ Construction Manager | Included in HRMP, monitored via regular inspections. | HRMP | Included in HRMP, monitored via regular inspections. |
| SoC | WR1 | Construction | The waste minimisation hierarchy principles of avoid / reduce / re-use / recycle / dispose will be applied to all aspects of the Proposal. | Open | Included in WEMP | Enviro Manager/ Construction Manager | Condition satisfied in the WEMP.<br>Implementation of controls ongoing. | WEMP | Included in WEMP, monitored via regular inspections. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | WR2 | Construction | Waste will be handled, stored and disposed of in accordance with relevant guidelines. | Open | Included in WEMP | Enviro Manager/ Construction Manager | Condition satisfied in the WEMP. Implementation of controls ongoing. | WEMP | Section 143 declarations have been received for all waste not going to registered landfills. During this reporting period the following declarations were received:<br>- s143_WHEELER_Kendall for Timber Pile Offcuts for fencing,<br>- s143_RMS_ExCarroll Property_Ramsey PA: for storage of felled timber,<br>- s143_EIA_Blueberry Farm: for raw mulch<br>- s143_TOLSON_Avacado Farm Fishermans Reach: for raw mulch<br>- s143_ROWE_Kempsey showground: for felled timber<br>- s143_STYLES_Nivarna Way: for concrete pipe offcuts<br>- s143_FISHERS_South Kempsey:for raw mulch. |
| SoC | WR4 | Design | Secondary waste materials (e.g.: fly ash) will be used as construction materials where reasonable and feasible. | Open | Included in WEMP | Enviro Manager/ Construction Manager | Condition satisfied in the WEMP. Implementation of controls ongoing. | WEMP | Fly-ash is included in concrete mix used this reporting period. |
| SoC | P1 | Pre-construction | All property acquisitions will be negotiated in accordance with the RTA Land Acquisition Policy and compensation will be assessed under the provisions of the Land Acquisition (Just Terms Compensation) Act 1991. | Closed | RMS Responsibility - N/a to F2E project team | RMS | Condition satisfied. | | N/a. RMS responsibility |
| SoC | P2 | Pre-construction | Negotiations for agricultural property acquisition will include consultation on property adjustments where required to limit impact on farm management practices. | Closed | RMS Responsibility - N/a to F2E project team | RMS | Condition satisfied. | | Conditions satisfied and closed by RMS. |
| SoC | P3 | Pre-construction | The Department of Primary Industries (Forests) will have access to areas of State Forest land identified for acquisition to remove any harvestable timber within the footprint of the Proposal. | Closed | Included in FFMP and Clearing procedures - Completed during Clearing stage of the project. | Enviro Manager/ Construction Manager | DPI Forests identified and collected harvestable timber from former DPI lands. Requirement satisfied. | | Conditions satisfied and closed. |
| SoC | P4 | Pre-construction | A risk assessment will be undertaken to determine which structures or properties may be affected by construction activities and therefore need to be inspected. The risk assessment will be undertaken by geotechnical and construction engineering experts with appropriate registration on the National Professional Engineers Register. | Closed | Undertake assessment to determine structures and properties for which dilapidation | RMS | Building condition Reports completed. Condition satisfied. | | Conditions satisfied and closed. |

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | reports will be required. | | | | |
| SoC | P5 | Pre-construction | Property inspections will be conducted, subject to landowner agreement, on all structures within 200 metres of proposed blasting locations, within 50 metres of construction activities that generate vibration impacts and at any other locations identified in the risk assessment. The property inspections will be carried out by suitably qualified / experienced person(s). | Closed | Undertake assessment to determine structures and properties for which dilapidation reports will be required. | RMS | Condition satisfied. | | Conditions satisfied and closed. |
| SoC | P6 | Pre-construction | The owners of all properties on which property inspections are to be conducted will be advised of the inspection, its scope and methodology and of the process for making a property damage claim at least two weeks prior to the inspection. The owners of all properties on which property inspections are to be conducted will be given a copy of the property inspection report at least three weeks prior to the commencement of any construction that could affect the property. | Closed | Consultation and condition surveys. | RMS | Condition satisfied. | G:\NSW\F2E\02 Community\02_08 Building Inspections\Reports | Conditions satisfied and closed. |
| SoC | P7 | Construction | Where liable, any property damage caused by the project's construction will be rectified at no cost to the property owner(s). Alternatively the RTA may negotiate compensation for the damage with the property owner. | Open | Addressed via project complaints and disputes resolution process. Additionally works that may affect adjacent property are carried out in consultation with affected residents. | Construction Manager Enviro Manager | Community communication strategy incorporated into CIP.<br><br>Ongoing implementation of the CIP.<br><br>The CIP was approved by DP&E on the 19.8.13 (letter ref 11119471). | | No unresolved or outstanding complaints this period. |
| SoC | P8 | Construction | Where a licensed bore, dam or other property water supply is adversely affected by the project, water supply of equivalent quality and quantity will be reinstated. Alternatively the RTA may negotiate compensation for the loss with the landowner. | Closed | Addressed via land sale negotiations between RMS and the landowner. Water extractions/ use managed via the Office of Water Approvals process - refer to G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits | RMS/ Enviro Manager | G36, submission of permits & licences to RMS.<br><br>Notification from one resident on Cooks Lane that existing groundwater bore had run dry. Geotechnical expert (DP) consulted and concluded potential that extraction at Cooks Lane compound may have impacted landowners bore. Thiess have therefore provided alternate water to landowner. | E.g. Water extractions/ use managed via the Office of Water Approvals process - refer to G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits | No reports of any licensed bore, dam or other property water supply is adversely affected by the project this period. |

**Appendix 1 – Project Obligations (COURs) Register**
**MCoA and SoC – Construction – 4 Mar 2014 - 3 Sep 2014 –**

| Ref. | Source Ref. | Timing | Commitment, Obligation, Undertaking, Requirement (COUR) | Construction Status | How COUR will be complied with | Responsibility | Addressed where / how | Evidence Reference | March - Sept 2014 Compliance Report |
|---|---|---|---|---|---|---|---|---|---|
| SoC | US1 | Construction | Utilities and services potentially affected by construction will be identified and requirements for their diversion, protection and / or support identified. Alterations to services will be determined in negotiation with the service providers and will ensure that disruption to services resulting from the project are limited and advised to customers. | Open | Utility relocations have been designed and shall be constructed in consultation (or by) the relevant Utility provider. | Services Manager | Design Package UT000 completed.<br><br>Ongoing protection / relocation of serviced. Managed through Ground Disturbance Permit. | UT000 | Ongoing protection / relocation of serviced. Managed through Ground Disturbance Permit. |
| SoC | AF1 | Construction | Sites chosen for ancillary facilities will satisfy the criteria provided in the Environmental Assessment, unless otherwise approved through the construction environmental management plan (CEMP) | Open | Shortlisted sites have been checked against these criteria in project planning: Refer to RMS/ ER approvals for ancillary sites. Monitored through pre-commencement consistency assessments in consultation with RMS, & 6 monthly compliance reports. | Construction Manager Enviro Manager | Ancillary Site Compliance Checklist in CEMP. Consistency Assessments completed for ancillary sites. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.1 Planning App | Refer to MCoA 2.29 |

# Appendix 2

# Compliance with Environmental Protection Licence

**Thiess Pty Ltd Environmental Protection Licenced**
**(Lic No. 20318, Version date 14 May 2014)**
**Construction Phase**
**4 March - 3 September 2014**

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| Administrative Conditions - What the license authorises and regulates | A1.1 | This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.<br>Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.<br>-Crushing, grinding or separating >100000-500000T processed<br>-Extractive Activities >500000-2000000T extracted, processed or stored<br>-Road Construction >10-30km constructed, widened or re-reouted | Works to be carried out in accordance with EPL conditions, and the maximum scale. | Earthworks Quantities Records | The license anniversary date was the 28.8.2014. An annual return will be prepared and submitted by the 27.10.2014 with payment of an administration fee. |
| Administrative Conditions - Premise or plant to which this licence applies | A2.1 | The licence applies to the following premises:<br>229 Cooks Lane<br>NSW Clybucca 2444<br>The premises stretches for approximately 27 kilometres from Frederickton linking in with the northern end of the Kempsey Bypass running through the Eungai Rail locality | The premises maps will be updated if the premises changes | Premise Maps as per EPL application submitted 16 January 2014 F2E-00G-SKT-RG001-0791/0808 (R01) - 13 November 2013 | Commencement of varied condition to identify the premise address as 229 Cooks Lane Clybucca (main Site Compound Office). |
| | A2.2 | In relation to Condition A2.1, the premises is defined as the licence boundary detailed on the Project Drawings titled "Pacific Highway Upgrade Frederickton to Eungai Environmental Protection Licence (EPL) Premise Maps". A copy of the current drawing (**Number F2E-00G-SKT-RG001-0791, Revision 1, dated 13 November 2013**) sheets 1 to 18 contained in Attachment D are part of the Thiess Pty Ltd EPL application documents received on the 10 July 2013. The application, drawings and supporting documents are filed in Grafton EPA office file LIC13/239 and kept at 49 Victoria Street, Grafton NSW 2460. | * Premise Maps | Premise Maps as per EPL application submitted 16 January 2014 F2E-00G-SKT-RG001-0791/0808 (R01) - 13 November 2013 | No change to the premise area during this reporting period. |

**Thiess Pty Ltd Environmental Protection Licenced**
**(Lic No. 20318, Version date 14 May 2014)**
**Construction Phase**
**4 March - 3 September 2014**

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| Administrative Conditions - Information supplied to the EPA | A3.1 | Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.<br>In this condition the reference to "the licence application" includes a reference to:<br>a) the applications for any licenses (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Tribunal) Regulation 1998; and<br>b) the licence information form provided by the licensee to the EPA in connection with the issuing of this licence. | Noted | N/a | All works to date have been carried out in accordance with relevant approval documentation. |
| Discharge to land and water and application to land - Location of monitoring/discharge points | P1.1 | The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point. | Noted | Soil and Water Management Plan, Sediment Basin Release data spread sheet. | Note only. |
| | P1.2 | The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.<br>EPA ID#1- Discharge water quality- The outlet from sediment basins referred to in condition P1.3 of this licence.<br>EPA ID#- Discharge water quality- The outlet for sediment basin/s from the acid sulphate soil treatment area/s referred to in condition P1.4 of this licence. | * Soil and Water Management Plan ( SWMP )/ Monitored through Water Movement Permit System/ Inspections, Monthly Environmental Performance Report and 6 Monthly Compliance Report. | Soil and Water Management Plan, Sediment Basin Release data spread sheet. Monthly Reports | Reference note to link table to condition P1.3 and P1.4 |
| | P1.3 | For the purpose of this licence the discharge points referred to at Condition P1.1 and P1.2 of this licence are those from sediment basins identified in the Thiess Pacific Highway Upgrade -Frederickton to Eungai, Attachment E -Licence Discharge Points as revised and retained on EPA file number LIC13/239. | * Soil and Water Management Plan (SWMP)* Dewatering Procedure* Sediment Basin Management Procedure | Water Movement Permit System, Inspection Records, Monthly Environmental Performance Report. | Attachment E was revised on the following dates:<br>- 13 March 14<br>- 5 May 14<br>- 23 May 14 to identify 80th and 85th percentile basins following the 14 May variation of the License. .<br>- 7 July 14, and<br>- 27 August 14. |
| | P1.4 | For the purpose of this Licence, the acid sulphate soil treatment area referred to in Discharge Point 2 of Condition P1.2 of this licence are those identified in Table E-2: *Licenced discharge points* contained in Appendix E of the *EPL application documents, Frederickton to Eungai Project* contained in the EPA administrative file for the premises. | * Soil and Water Management Plan ( SWMP )<br>* Acid Sulphate Soils Management Strategy | Water Movement Permit System, Inspection Records, Monthly Environmental Performance Report. | Refer to update for condition P1.3 above |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | P1.5 | The licensee, in **commissioning a new sediment basin**, may only vary the discharge point locations identified in Condition P1.1 and P1.2 if it provides the EPA with a copy of the revised documents identified at Condition P1.3 of this licence, at least 7 days prior to the commissioning on the premises, unless otherwise agreed to in writing by the EPA for each new activity. | * Soil and Water Management Plan ( SWMP ) | Attachment E of EPL. | The discharge point locations of all basins is listed in Attachment E. Refer to Condition P1.3 for record of updated to this attachment. |
| | P1.6 | The licensee, in **decommissioning an existing sediment basin**, may only vary the discharge point locations identified in Condition P1.1 and P1.2 if it provides the EPA with a copy of the revised documents identified at Condition P1.3 of this licence, at least 21 days prior to the decommissioning on the premises, unless otherwise agreed to in writing by the EPA for each decommissioning activity. | * Soil and Water Management Plan ( SWMP ) *EPL issued to all staff via Incite. | Attachment E of EPL. Correspondence of basin decommissioning report. | The discharge point locations of all basins is listed in Attachment E. Refer to Condition P1.3 for record of updated to this attachment.<br><br>The updated to Attachment E this period included decommissioning of the following basins: TB17000, TB34700, TB37300, TB30800E, TB17000, TB22750, ASSTA Fill 16 & ASSTA Cut 13. |
| Limit Conditions - Pollution of Waters / Concentration Limits | L1.1 | Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.<br>(*NB. Section 120 related to the prohibition of pollution of waters*). | * Construction Environmental Management Plan (CEMP) Project Induction, water movement permit system | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | Refer to update for condition L2.1 & L2.5 below. |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | L2.1 | For each monitoring/discharge point or utilisation area specified in the tables below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan ( SWMP )<br>* Dewatering Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | 163 basin discharge events occurred during this reporting period. All basin releases complied with EPL requirements. (Reference: Monthly Env. Performance Reports).<br><br>Refer to condition L2.5 for overtopping events during which the pH and TSS exceeded the specified limits. |
| | L2.2 | Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges. | * Construction Environmental Management Plan (CEMP)* Soil and Water Management Plan ( SWMP )* Dewatering Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | Refer to update for condition L2.1 above. |
| | L2.3 | To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan ( SWMP )<br>* Dewatering Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | Refer to update for condition L2.1 & L2.5. |
| | L2.4 | Water and/or Land Concentration Limits:<br>POINT 1<br>Oil and grease should not be visible<br>pH- 6.5-8.5<br>TSS- 50mg/L<br>POINT 2<br>Dissolved Aluminium- 0.055mg/L<br>Conductivity- 200mS/cm<br>Dissolved Iron- 0.3mg/L<br>TSS- 50mg/L | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan ( SWMP )<br>* Dewatering Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | L2.4 table details only |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | L2.5 | Exceeding the limits specified for Point 1 in Condition L2.4 of this licence for pH and total suspended solids (TSS) for discharges from the sediment basins identified by Conditions P1.1 and P1.2 is only permitted when the discharge occurs solely as a result of rainfall measured at the premises. The rainfall must exceed the 5 day rainfall depth value for the corresponding discharge point in the table below over a consecutive 5 day period for discharge to be considered to occur solely as a result of rainfall.<br><br>**Table in License**<br>Licenced discharge points- Attachment E to EPL application documents- design 5 day rainfall event 46MM, classification of basin- 85th<br><br>Licenced discharge points- Attachment E to EPL application documents- design 5 day rainfall event 36.5MM, classification of basin- 80th | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan ( SWMP )<br>* Dewatering Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS<br><br>G38 4.2.1 BASIN PERFORMANCE REPORT | Condition amended in the 14 May 2014 License Version to include additional line in the Table under L2.5 to identify 80th percentile Classification of Basins with a design 5 day rainfall event of 36.5mm. |
| | L2.6 | The concentration limit for Iron (dissolved) and Aluminium (dissolved) is deemed not to have been breached if:<br>(a) The sample complied with the pH limit at the time of discharge; and<br>(b) The EPA is advised within 3 working days of completion of testing of Iron (dissolved) and Aluminium (dissolved) of any Iron (dissolved) and Aluminium (dissolved) results above the licence limit.<br>Note: The purpose of this condition is to expedite the assessment and subsequent discharge of the treated water from the acid sulfate soil treatment areas. The correlation between Iron (dissolved) and Aluminium (dissolved) and pH will be subject to ongoing review based on the test results. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan ( SWMP )<br>* Dewatering Procedure | Incite correspondence record of EPA notification testing of Iron (dissolved) and Aluminium (dissolved) of any Iron (dissolved) and Aluminium (dissolved) results above the licence limit within 3 days. | No releases from ASS treatment areas to date. |
| | L2.7 | If the licensee uses turbidity (NTU) in place of TSS to determine compliance with Condition L2.4, the licensee must develop a statistical correlation which identifies the relationship between NTU and TSS for water quality in the sediment basin/s in order to determine the NTU equivalent of 50 *mg/L* TSS before its use. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan ( SWMP )<br>* Dewatering Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | Based on data from the previous quarter, the statistical correlation was updated and approved on the 2 May 2014 (refer F2E-TPL-CORR-02045).<br>Due to lack of data during the previous June to Aug quarter, the statistical correlation was not updated again. EPA were notified of this on the 4 July. |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | L2.8 | The licensee must provide the EPA with a copy of the statistical correlation assessment methodology and results before using NTU in place of TSS. | correlation procedure | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL\TSS NTU Correlation | Refer to update for condition L2.7. |
| | L2.9 | The licensee must develop and implement a method to enable the ongoing verification of the relationship between NTU and TSS. | correlation procedure | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL\TSS NTU Correlation | Method for ongoing verification of the relationship between NTU and TSS is included in TSS:NTU Correlation Procedure (refer F2E-TPL-CORR-01479) . Refer to update for condition L2.7 for updated on the correlation. |
| | L2.10 | The licensee must provide the EPA with any amendments the licensee makes to the statistical correlation as a result of the ongoing verification required by Condition L2.8 before using the revised statistical correlation. | correlation procedure | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL\TSS NTU Correlation | Refer to update for condition L2.7. |
| Limit Conditions - Blasting | L3.1 | The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP) | N/a to date. No blasting to date. | N/a to date. No blasting to date. |

**Thiess Pty Ltd Environmental Protection Licenced**
**(Lic No. 20318, Version date 14 May 2014)**
**Construction Phase**
**4 March - 3 September 2014**

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | L3.2 | The overpressure level from blasting operations at the premises must not exceed 115dB (LinPeak) for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP) | N/a to date. No blasting to date. | N/a to date. No blasting to date. |
| | L3.3 | Ground vibration peak particle velocity from the blasting operations at the premises must not exceed *10mm/sec* at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP) | N/a to date. No blasting to date. | N/a to date. No blasting to date. |
| | L3.4 | Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mmlsec for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP) | N/a to date. No blasting to date. | N/a to date. No blasting to date. |
| | L3.5 | To determine compliance with condition(s) L3.1 and L3.3<br>a) Airblast overpressure and ground vibration levels must be measured and electronically<br>recorded at the most affected residence or noise sensitive location that is not owned by the<br>licensee or subject to a private agreement between the owner of the premises or noise sensitive<br>location and the licensee for all blasts carried out in or on the premises; and<br>b) Instrumentation used to measure the airblast overpressure and ground vibration levels must<br>meet the requirements of Australian Standard AS 2187.2-2006. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP) | N/a to date. No blasting to date. | N/a to date. No blasting to date. |

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**Construction Phase**
**4 March - 3 September 2014**

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| Limit Conditions – Hours of operation | L4.1 | Standard construction hours<br>Unless otherwise specified by any other condition of this licence, all construction activities are:<br>a) restricted to between the hours of 7:00am and 6:00pm Monday to Friday;<br>b) restricted to between the hours of 8:00am and 1:00pm Saturday; and<br>c) not to be undertaken on Sundays or Public Holidays. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Out of Hours Work Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.9 Out of Hours Works | Refer to condition L4.2 - L4.4 for works outside of standard working hours. |
| | L4.2 | Exemptions to standard construction hours The three categories of works that may be undertaken outside the standard hours of operation permitted by Condition L4.1 are: a) the delivery of oversized plant or structures that police or other authorised authorities determine require special arrangements to transport along public roads; b) emergency work to avoid the loss of lives or property, or to prevent environmental harm; c) works that are not more than 5 dB(A) over the rating background level at the nearest noise sensitive receiver as assessed by acoustic investigation. The licensee must notify the EPA via a quarterly forecast prior to the undertaking of any works referred to in Condition L4.2 a) and c) as well as providing the EPA with a copy of the results of any acoustic investigation made in relation to Condition L4.2 c) to be reported as per condition R1.9. | * Construction Environmental Management Plan (CEMP)* Noise and Vibration Management Plan (NVMP)* Out of Hours Work Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.9 Out of Hours Works | Quarterly Forecasts were issued to the EPA on the 3 March, 2 April and 25 June 2014. |

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| | L4.3 | Works agreed outside of standard construction hours<br>The licensee may undertake works outside of standard construction hours if agreement between the licensee and representatives of potentially affected noise sensitive receivers has been reached. Any agreement(s) between the licensee and the potentially affected noise sensitive receivers must be recorded in writing and a copy of the agreement(s) kept on the premises by the licensee for the duration of this licence. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Out of Hours Work Procedure, tracked via Monthly Performance Report | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.9 Out of Hours Works | Agreed out of hours works completed this quarter were:<br>- Saturday afternoon works along Zone 1 & 2<br>- Saturday afternoon works along Zone 3<br>- Saturday Afternoons June to September 2014<br>- OoHW Saturday Bridge 12 Piling 28/6/14 |
| | L4.4 | Other out-of-hours works implemented in accordance with the projects Conditions of Approval<br>Notwithstanding condition L4.3, the licensee may undertake critical out-of-hours works where it has been demonstrated to the EPA's satisfaction that:<br>a) all reasonable and feasible measures have been undertaken to consult with any affected sensitive receptors on each occasion that out-of hours works are proposed under this condition;<br>b) the Environmental Representative has assessed the works to be undertaken and signs-off on their support for the out-of-hours works;<br>c) the EPA and other relevant agencies, such as Roads and Maritime Services and NSW Department of Planning have been consulted where necessary prior to proceeding with the proposed out-of-hours works;<br>d) any works undertaken under this provision are documented and reported on in the Monthly EPL Compliance Report. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Out of Hours Work Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.9 Out of Hours Works | Other (critical) out of hours works this period were:<br><br>OoHW Saw-cutting at SPR Interchange (F2E-TPL-REC-00573). |

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| | L4.5 | The licensee must notify, by letterbox drop and by detailing works on the project website, potentially affected noise sensitive receivers of the timing and duration of work agreed to under Condition L4.3 at least 48 hours prior to that work commencing. A copy of the notification must be kept by the licensee and made available to the EPA on request.<br>Note: where no project website currently exists, a website for this purpose must be created. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Out of Hours Work Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.9 Out of Hours Works | Refer to update for condition L4.3.<br><br>Project website updated are http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/index.html |
| | L4.6 | Blasting operations at the premises may only take place between 9:00am and 5:00pm Monday to Friday and 9:00am and 1:00pm Saturday. (Where compelling safety reasons exist, the EPA may permit a blast to occur outside the above hours. A prior written request for approval of any such blast must be made to the EPA). | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Out of Hours Work Procedure | N/a to date. No blasting to date. | N/a to date. No blasting to date. |
| | L4.7 | Any work generating high noise impact, excluding blasting operations covered in Condition L4.5, must only be undertaken: a) between the hours of 8:00am and 6:00pm Monday to Friday; b) between the hours of 8:00am and 1 :00pm Saturday; and c) in continuous blocks of no more than 3 hours, with at least a 1 hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers; except as expressly permitted by another condition of this licence. For the purposes of this Condition 'continuous' includes any period during which there is less than a 1 hour respite between ceasing and recommencing any of the work the subject of this Condition. | * Construction Environmental Management Plan (CEMP)* Noise and Vibration Management Plan (NVMP)* Out of Hours Work Procedure | | No work generating high noise impact to date. |
| Operating Conditions | O1.1 | Licensed activities must be carried out in a competent manner. This includes:<br>a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and<br>b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity. | Note | | Noted. |

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| | O2.1 | All plant and equipment installed at the premises or used in connection with the licensed activity:<br>a) must be maintained in a proper and efficient condition; and<br>b) must be operated in a proper and efficient manner. | Note | G:\NSW\F2E\07 Health and Safety\07_15 Plant & Equipment\7.15.15 Plant Register Documentation\Plant Documentation | Pre-works inspections carried out to assess plant working conditions. Regular maintenance implemented. |
| | O3.1 | All operations and activities occurring at the premises must be carried out in a manner that will minimise the generation and emission of dust.<br>Note: Deposited dust levels are assessed against the criteria identified in the Approved methods publication for the modelling and assessment of air pollutants in NSW, published by the Department of Environment and Conservation August 2005. | * Construction Environmental Management Plan (CEMP)<br>* Air Quality Management Plan (AQMP)<br>* Air Quality Monitoring Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\01 Air Quality | Dust levels Monitoring ongoing. An additional 6 DDGs were installed in April to provide a better assessment of background air quality .<br>One exceedance was recorded in March from 62 Nirvana Way of the maximum target of 4g/$m^2$/month.<br><br>The average +2g/$m^2$/month target was exceeded on three additional occasions, however these results were below the maximum target.<br><br>Dust monitoring results are presented in the Monthly Environmental performance reports. |
| | O4.1 | The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The licensee must develop a Pollution Incident Response Management Plan in accordance with the requirements in Part 5.7 A of the Protection of the Environment Operations (POEO) Act 1997 and POEO regulations. | * Construction Environmental Management Plan (CEMP)<br>* Pollution Incident Response Management Plan (PIRMP) | PIRMP is saved at G:\NSW\F2E\01 Environment\10 Emergency Planning and Response\F2E-00G-PL-PIR-ENV-00-01, and has been distributed & uploaded to Keystone. | Plan developed and uploaded to Thiess website 2/11/2013 - http://www.thiess.com.au/files/documents/F2E%20Pollution%20Incident%20Response%20Management%20Plan%20Dec%202013.pdf |
| | O5.1 | All works must be carried out in accordance with the "Interim Construction Noise Guideline", OECC July 2009 to minimise the emission of noise and vibration from the premises. | * Construction Environmental Management Plan (CEMP)*<br>Noise and Vibration Management Plan (NVMP)*<br>Interim Construction Noise Guideline | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.4 Environmental Reporting\01 Monthly Environmental Performance Report | Mitigation measures outlined in the NVMP are implemented for works that exceed the management levels specified in Table 2 of the Interim Construction Noise Guideline. |

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| | O5.2 | The licensee must maximise the diversion of run-on waters from lands upslope and around the site whilst land disturbance activities are being undertaken. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Primary Erosion and Sedimentation Management Plans (PESCP's) completed and approved by the Environmental representative, area engineer, foreman and final sign off by the Soil Conservationist and approval by Roads and Maritime Services (RMS) and the Project Verifier (PV) | G:\NSW\F2E\01 Environment\2 Planning\2.14 ESCPs | Clean water diversion drains continue to be constructed in accordance with the Longitudinal Drainage Design Lots (DL00#) throughout this quarter. |
| | O5.3 | The licensee must maximise the diversion of stormwater runoff containing suspended solids to sediment basins installed on the premises. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Progressive Erosion and Sedimentation Management Plans (PESCP's), Inspection Records, Actions Register. | G:\NSW\F2E\01 Environment\2 Planning\2.14 ESCPs | Basins construction is +95% complete. Diversion of water from site to basins is maximised through cut off drains and kick ups on fills. Utilisation of the long drainage via pits commenced this quarter to direct site water to basins. |
| | O5.4 | The drainage from all areas that will mobilise suspended solids when stormwater runs over these areas must be controlled and diverted through appropriate erosion and sediment control measures. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Progressive Erosion and Sedimentation Management Plans (PESCP's), Inspection Records, Actions Register. | G:\NSW\F2E\01 Environment\2 Planning\2.14 ESCPs | All possible areas are direct to basins (refer conditions 5.3). Where water can not be directed to basins, catchments are managed in accordance with Blue Book. |
| | O5.5 | The licensee must minimise the area of the site that is able to generate suspended material when water runs over it. | * Construction Environmental Management Plan (CEMP)* Soil and Water Management Plan (SWMP)* Progressive Erosion and Sedimentation Management Plans (PESCP's), Inspection Records, Actions Register. | G:\NSW\F2E\01 Environment\2 Planning\2.2 CEMP (incl. S-Plans) | Batters are being progressively reinstated with topsoil and hydro mulched to reduce the area of the site that is able to generate suspended material when water runs over it. |

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| | O5.6 | Unless otherwise approved in writing by the EPA, where sediment basins are necessary, all sediment basins and associated drainage must be installed and commissioned prior to the commencement of any clearing and grubbing works within the catchment area of the sediment basin that may cause sediment to leave the site.<br>Note: This condition does not apply to those works associated with the actual installation of sediment basins or associated drainage. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Progressive Erosion and Sedimentation Management Plans (PESCP's), Inspection Records, Actions Register. | G:\NSW\F2E\01 Environment\2 Planning\2.14 ESCPs | Clearing methodology implemented to achieve this requirement. |
| | O5.7 | The sediment basins and other erosion and sediment controls must be planned, designed (stability, location, type and size), constructed, operated and maintained, **as a minimum**, in accordance with the guideline "Managing Urban Stormwater - Soils and Construction, Volume 20, Main road construction" OECC 2008, to be read and used in conjunction with volume 1 "Managing urban stormwater: soils and construction" Landcom 2006. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Progressive Erosion and Sedimentation Management Plans (PESCP's), Inspection Records, Actions Register. | G:\NSW\F2E\01 Environment\2 Planning\2.14 ESCPs | Commencement of varied condition to include words 'as a minimum'.<br>All basins & PESCP designed in accordance with BB - reviewed by Soil Conservationist. Catchment sizes are reviewed to ensure basins / catchment size continues to comply with blue book as earthworks modify catchment sizes. |
| | O5.8 | All erosion and sediment control measures installed on the premises must be inspected and works undertaken to repair and/or maintain these controls:<br>a) Weekly during normal construction hours outlined in Condition L4.1;<br>b) daily during periods of rainfall; and<br>c) within 24 hours of the cessation of a rainfall event causing runoff to occur on or from the premises.<br>The licensee must record all such inspections including observations and works undertaken to repair and/or maintain erosion and sediment controls. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Primary Erosion and Sedimentation Management Plans (PESCP's) , inspections, daily diaries (e.g. foremen) | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.5 Inspections | Regular inspections are carried out, including weekly and daily during rainfall events. Improved record keeping is required to demonstrate the total extend of all inspections/ e.g. including all Foremen' inspection.<br>Regular inspections are carried out, including weekly and daily during rainfall events. Improved record keeping is required to demonstrate the total extend of all inspections/ e.g. including all Foremen' inspection. |
| | O5.9 | The licensee must ensure the design storage capacity of the sediment basins installed on the premises is reinstated within 5 days of the cessation of a rainfall event that causes runoff to occur on or from the premises. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Primary Erosion and Sedimentation Management Plans (PESCP's) , reported via monthly report. | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | Basin capacity is being restored within 5 days following rainfall as far as practical.<br>163 discharge events occurred during the month of which 3 failed to be discharged within the 5 day period. The maximum period was 9 days. These failures to restore basin capacity within 5 days did not result in any overtopping events. |

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| | O5.10 | The licensee must ensure that sampling point(s) for water discharged from the sediment basin(s) are provided and maintained in an appropriate condition to permit:<br>a) the clear identification of each sediment basin and discharge point;<br>b) the collection of representative samples of the water discharged from the sediment basin(s); and<br>c) access to the sampling point(s) at all times by an authorised officer of the EPA. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Primary Erosion and Sedimentation Management Plans (PESCP's) | | Basin identification is being progressively installed / maintained. Access points available. Permanent spillways are being installed in operational basins during this reporting period. |
| | O5.11 | The licensee must endeavour to maximise the reuse of captured stormwater on the premises. | * Construction Environmental Management Plan (CEMP)* Soil and Water Management Plan (SWMP)* Primary Erosion and Sedimentation Management Plans (PESCP's) | | Reuse prioritised for dust suppression and earthworks. |
| | O5.12 | The licensee must ensure that any polymer based flocculants used to treat water before discharge from the premises has an EC50 greater than 100 milligrams per litre for water fleas and fish. For the purpose of this condition "EC50" means the concentration of material that is estimated to be lethal to fifty precent of the test organisms, after an exposure period of 48 hours for water fleas and 96 hours for fish.<br><br>Note: In accordance with the EPA Approved Methods Publication any analysis should be undertaken by a laboratory accredited to perform those analyses by an independent accreditation body acceptable to the EPA, such as the National Association of Testing Authorities (NATA), or equivalent. | * Construction Environmental Management Plan (CEMP)<br>* Soil and Water Management Plan (SWMP)<br>* Progressive Erosion and Sedimentation Management Plans (PESCP's)<br>* Water Quality Monitoring Procedure | G:\NSW\F2E\01 Environment\11 Document and Record Management\11.8 Monitoring Results\02 Water Quality\BASINS | N/a at this time - only Gypsum being used. |
| Monitoring and Recording Conditions | M1.1 | The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition. | * Soil and Water Management Plan (SWMP)<br>*Erosion and Sedimentation Management Plans (PESCP's)<br>* Water Quality Monitoring Procedure<br>* Water Results Register<br>* Monthly Environmental Report<br>* Consultation with EPA as necessary | G:\NSW\F2E\01 Environment\11 Document and Record Management | Monitoring reported through the monthly performance reports. |

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| | M1.2 | All records required to be kept by this licence must be:<br>a) in a legible form, or in a form that can readily be reduced to a legible form;<br>b) kept for at least 4 years after the monitoring or event to which they relate took place; and<br>c) produced in a legible form to any authorised officer of the EPA who asks to see them. | * Water Results Register<br>* Monthly Environmental Report | Keystyone (Monthly Reports) and G:\NSW\F2E\01 Environment\11 Document and Record Management | Refer to condition M1.1 |
| | M1.3 | The following records must be kept in respect of any samples required to be collected for the purposes of this licence:<br>a) the date(s) on which the sample was taken;<br>b) the time(s) at which the sample was collected;<br>c) the point at which the sample was taken; and<br>d) the name of the person who collected the sample. | * Water Results Register<br>* Monthly Environmental Report<br>* Water Quality Monitoring Procedure | Keystyone (Monthly Reports) and G:\NSW\F2E\01 Environment\11 Document and Record Management | Refer to condition M1.1 |
| | M2.1 | For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns: | * Water Quality Monitoring Procedure | Keystyone (Monthly Reports) and G:\NSW\F2E\01 Environment\11 Document and Record Management | Refer to condition M1.1 |
| | M2.2 | Water and/ or Land Monitoring Requirements<br>**1**<br><br>Note- Special frequency 1 means <24 hours prior to a controlled/scheduled discharge and daily for any continued controlled/scheduled discharge. | * Soil and Water Management Plan (SWMP)<br>* Water Quality Monitoring Procedure | Keystyone (Monthly Reports) and G:\NSW\F2E\01 Environment\11 Document and Record Management | Refer to condition M1.1 |
| | M3.1 | Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted. | * Soil and Water Management Plan (SWMP)<br>* Water Quality Monitoring Procedure | Keystyone (Monthly Reports) and G:\NSW\F2E\01 Environment\11 Document and Record Management | Monitoring is being completed in accordance with the CEMP sub plans. No express provision to the contrary has been made during this reporting period. |

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| | M4.1 | Rainfall at the premises must be measured and recorded in millimetres per 24 hour period at the same time each day from the time that the site office associated with the activities permitted by this licence is established. | * Soil and Water Management Plan (SWMP)<br>* Weather Stations | Monthly reports | Weather station and two automated rain gauges were installed during this reporting period. Data available via https://new.mhl.nsw.gov.au/MHLWeb/main.php |
| | M4.2 | The rainfall monitoring data collected in compliance with Condition M4.1 can be used to determine compliance with Condition L2.5. | * Soil and Water Management Plan (SWMP)<br>* Weather Stations | Monthly reports | Noted |
| | M5.1 | The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies. | Community Involvement Plan / Consultation Manager | Monthly reports | Records kept in Consultation Manager (IT system) and reported within Monthly Environmental Performance Report. |
| | M5.2 | The record must include details of the following:<br>a) the date and time of the complaint;<br>b) the method by which the complaint was made;<br>c) any personal details of the complainant which were provided by the complainant or, if no such details | Consultation Manager | Consultation Manager | Records kept in Consultation Manager (IT system) and reported within Monthly Environmental Performance Report. |

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| | M5.3 | The record of a complaint must be kept for at least 4 years after the complaint was made. | Consultation Manager | Consultation Manager | Records kept in Consultation Manager (IT system) and reported within Monthly Environmental Performance Report. |
| | M5.4 | The record must be produced to any authorised officer of the EPA who asks to see them. | Consultation Manager | Consultation Manager | N/a to date however records available from Consultation Manager (IT system) and reported within Monthly Environmental Performance Report. |
| | M6.1 | The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence. | Community Involvement Plan | CIP/ Website at http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/index.html | CIP and RMS website 1800 668 240 or email community-enquiries@F2E.incite.com.au. |
| | M6.2 | The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint. | Community Involvement Plan | CIP/ Website at http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/index.html | CIP and RMS website 1800 668 240 or email community-enquiries@F2E.incite.com.au. |
| | M6.3 | The preceding two conditions do not apply until 3 months after a) the date of the issue of this licence or b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.<br>Note: where no project website currently exists, a website for this purpose must be created. | Noted | Noted | Noted |

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| | M6.4 | Prior to the commencement of the licensed activity, the licensee must ensure the project's website provides ready access to clear and concise information about:<br>a) how to make a complaint on the telephone complaints line referred to in Condition M6.1; and<br>b) how complaints on the telephone complaints line will be processed. | RMS Project Website | CIP/ Website at http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/index.html | CIP/ Website at http://www.rms.nsw.gov.au/projects/northern-nsw/port-macquarie-to-coffs-harbour/frederickton-to-eungai/index.html |
| | M6.5 | In response to any noise or vibration complaint made by any persons or bodies other than the EPA, the licensee must:<br>a) investigate the complaint within 2 hours of the complaint being received or within the timeframe agreed with the complainant;<br>b) offer to attend the complainant's premises to undertake noise or vibration monitoring at the complainant's premises as soon as is practical, or at a time agreed with the complainant; and<br>c) advise the complainant of the results of the investigation and any proposed remedial action. | Community Involvement Plan | Consultation Manager | Complaints are reported to Environment Manager and monitoring offered & scheduled. Results of monitoring summaries in the monthly report (refer condition M1.1). |
| | M6.6 | In response to any complaint referred by the EPA to the licensee, the licensee must respond to the referred complaint in a manner and timeframe specified by the EPA. | Community Involvement Plan | Consultation Manager | Complaints are reported to Environment Manager and monitoring offered & scheduled. Results of monitoring summaries in the monthly report (refer condition M1.1). No complaints have been referred by the EPA during this reporting period. |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | M7.1 | Noise monitoring must be carried out in accordance with Australian Standard AS 2659.1 -1998: Guide to the use of sound measuring equipment -Portable sound level meters, and the compliance monitoring guidance provided in the NSW Industrial Noise Policy. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Interim Construction Noise Guideline | Monthly reports | Noise monitoring completed in accordance AS 2659.1 -1998 of monitoring summaries in the monthly report (refer condition M1.1). |
| | M7.2 | Vibration monitoring must be carried out in accordance with the guidance provided in the Environmental Noise Management Assessing Vibration: A Technical Guideline, published by the Department of Environment and Conservation, February 2006. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Environmental Noise Management Assessing Vibration: A Technical Guideline<br>* Interim Construction Noise Guideline | | No vibration monitoring required during this period. |
| | M7.3 | The licensee must undertake noise and vibration monitoring as directed by an authorised officer of the EPA. | * Construction Environmental Management Plan (CEMP)<br>* Noise and Vibration Management Plan (NVMP)<br>* Interim Construction Noise Guideline | N/a at this time | N/a to date - means to comply are available should direction from EPA be received. |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| Reporting conditions | R1.1 | The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:<br>a) a Statement of Compliance; and<br>b) a Monitoring and Complaints Summary.<br>At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA. | CEMP/ EPL compliance. | N/a to date. | Annual return to be submitted in accordance with this condition. Included in the CEMP reporting schedule. The annual return will be due on the 27 October (60 days after the anniversary date). |
| | R1.2 | An Annual Return must be prepared in respect of each reporting period, except as provided below.<br>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period. | CEMP/ EPL compliance. | N/a to date. | Refer to condition R1.1 |
| | R1.3 | Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.<br>Note: An application to transfer a licence must be made in the approved form for this purpose. | CEMP/ EPL compliance. | N/a to date. | N/a to date |
| | R1.4 | Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence -the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence -the date from which notice revoking the licence operates. | CEMP/ EPL compliance. | N/a to date. | N/a to date |
| | R1.5 | The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date'). | CEMP/ EPL compliance. | N/a to date. | Refer to condition R1.1 |
| | R1.6 | The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA. | CEMP/ EPL compliance. | N/a to date. | Noted. Record maintained on Incite. |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | R1.7 | Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:<br>a) the licence holder; or<br>b) by a person approved in writing by the EPA to sign on behalf of the licence holder. | CEMP/ EPL compliance. | N/a to date. | Refer to condition R1.1 |
| | R1.8 | A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence. | CEMP/ EPL compliance. | N/a to date. | Noted |
| | R1.9 | The licensee must provide the EPA with a Monthly Report containing the following information:<br>a) details of all non-compliances with the conditions of this licence and measures taken, or proposed, to prevent a recurrence of such a non-compliance; and<br>b) details of all discharges from the sediment basins where the water quality results exceed the limits prescribed by Condition L2.4 including the results of rainfall measurements to demonstrate compliance with Condition L2.5; and<br>c) details of the results of any acoustic investigation made in relation to L4.2<br>d); and the report referred to in this condition must be received by the EPA within 10 working days of the end of each month. | * Environmental Performance Monthly Report | Monthly reports and Keystone submission records. | All monthly reports have been submitted on time to date.<br><br>Refer to condition M1.1<br><br>Environmental monitoring data published on http://www.thiess.com.au/publications/reports?category=environmental-reports&project=frederickton-to-eungai-pacific-highway-upgrade |
| | R2.1 | Notifications must be made by telephoning the Environment Line service on 131 555.<br>Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act. | Note | N/a to date. | No material harm incidents during this reporting period |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | R2.2 | The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred. | * Incident Report | N/a to date. | Not applicable this period |
| | R3.1 | Where an authorised officer of the EPA suspects on reasonable grounds that:<br>a) where this licence applies to premises, an event has occurred at the premises; or<br>b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event. | N/a to date | N/a to date. | Not applicable this period |
| | R3.2 | The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request. | * Incident Report | N/a to date. | Not applicable this period |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | R3.3 | The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters. | * Incident / investigation report | N/a to date. | Not applicable this period |
| | R3.4 | The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request. | * Incident Report | | Not applicable this period |
| General conditions | G1.1 | A copy of this licence must be kept at the premises to which the licence applies. | * Licence available to all Thiess employees on the sites local drive and Keystone. Hard copy maintained at the Premise. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL | No change this period |
| | G1.2 | The licence must be produced to any authorised officer of the EPA who asks to see it. | * Licence available to Thiess employees on the sites local drive and Keystone. Hard copy maintained at the Premise. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL | No change this period |

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| | G1.3 | The licence must be available for inspection by any employee or agent of the licensee working at the premises.<br>Note: Condition G1.1 above only applies from the time that the site office associated with the activities permitted by this licence is established. | * Licence available to all Thiess employees on the sites local drive and Keystone. Hard copy maintained at the Premise. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL | No change this period |
| | G2.1 | The licensee must provide the EPA with up to date contact details to enable the EPA:<br>a) to contact either the licensee or a representative of the licensee who can respond at all times to incidents relating to the premises, and<br>b) to contact the licensee's senior employees or agents authorised at all times to:<br>i) speak on behalf of the licensee, and<br>ii) provide any information or document required under licence. | Provided to EPA via application. / Included within CEMP. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL\EPL - Application\130705_scanned version | No change this period |
| | G2.2 | The contact details required by Condition G2.1 above must include:<br>a) the full name and title of the authorised representatives and the scope of their respective authorisations; and<br>b) the direct telephone number, mobile number, pager number, fax number, email address and postal address for contacting each authorised representative. | Provided to EPA via application. / Included within CEMP. | G:\NSW\F2E\01 Environment\3 Legal and Other Compliance\3.2 Approvals, Licences and Permits\3.2.2 Lic\EPL\EPL - Application\130705_scanned version | No change this period<br>(The CEMP updated outstanding). |

**Thiess Pty Ltd Environmental Protection Licenced**
**(Lic No. 20318, Version date 14 May 2014)**
**Construction Phase**
**4 March - 3 September 2014**

| Key Elements of Obligation | Source Ref. | Commitment, Obligation, Undertaking, Requirement (COUR) | How COUR will be complied with | Evidence Reference | Compliance review for March - Sept 2014 Reporting Period |
|---|---|---|---|---|---|
| Special conditions | E1.1 | In this Licence, unless the contrary is indicated, the terms below have the following meaning:Noise Sensitive Locations- Means buildings used as a residence, hospital, school, child care centre, places of public worship and nursing homes. A noise sensitive location includes the land within 30m of the building. NSW Industrial Noise Policy- Means the document titled :NSW Industrial Noise Policy" published by the Environment Protection Authority in January 2000. Works generating high noise impact- Means an LAeq(15min) noise measurement of 75 dB(A) as described in the document titled "Interim Construction Noise Guideline" published by the Department of Environment and Climate Change in July 2009. Critical out-of-hours works - Means works undertaken under a Road Occupancy Licence that dictates that the works must occur out-of-hours for traffic safety reasons, time critical works associated with concrete paving or other time critical works that cannot be undertaken under licence conditions L4.2c) or L4.2d) or L4.3Reasonable and feasible - For the purposes of this licence the term "reasonable and feasible" has the same meaning as that defined under the "Interim Construction Noise Guideline DECC 2009/265". | Noted. | Note only. | Commencement of varied condition to include definitions of 'Critical out-of-hours works' and 'Reasonable and feasible'.No change this period |

# Appendix 3

# Environmental incidents and complaints

**Table 1 Environmental incidents and near misses which occurred during the reporting period**

| Environmental Aspect (Thiess Classification) | RMS Incident Classification | Incident | Date | Actions |
|---|---|---|---|---|
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Oil leaking from waste bin<br>Oil was spotted on the hardstand under and around the waste bin. Upon investigation hydrocarbon fluid from oily rags had escaped through a crack in the underside of the waste bin onto adjoining ground. | 4/03/14 | Spill material was immediately placed over the affected area and the waste disposed to an appropriately licenced facility. Suitable covered bins have been ordered for the workshop to place all oily materials in the future. Issue to be raised at next toolbox and message reiterated on appropriate disposal methods for hydrocarbon waste. |
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Spill from concrete washout<br>Washout bay exceeded its designed capacity and leaked onto adjoining ground. | 12/03/14 | Spill contained to within site boundary and cleaned up. |
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Hydraulic hose break Bridge 6 piling platform<br>Truck and dog tipping rock blew a hydraulic line. | 17/03/14 | Excavator removed contaminated material and disposed of in appropriate contaminated waste bin. Truck removed from site until repaired. |
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Tannins overtops timber stockpile bund<br>Tannin overtopped a timber stockpile perimeter bund and filtered through grass and a sediment fence before leaving site upstream of CML303. Here the tannins mixed with water runoff from the catchment and has pooled above and within CML303 rocked drainage line. A bund downstream of CML303 has prevented runoff of tannin affected water downstream. This event occurred following a period of rainfall totalling 86mm. | 31/03/14 | Tannin water within the diversion of CML303 is being pumped out and used for dust suppression. Dewatering of CML303 will result in the draw down and removal of tannin affected water caught immediately upstream of CML303. |
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Dicks diesel oil spill<br>Oil leaked from undercarriage while watering haul road. | 13/02/14 | Clean up spill and repair hose. |

| Environmental Aspect (Thiess Classification) | RMS Incident Classification | Incident | Date | Actions |
|---|---|---|---|---|
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Tannins overtopped timber stockpile bunds<br>Tannins overtopped their stockpile perimeter bunds along Macleay Valley Way following a 110mm rain event and entered a clean water flow path. The flow path takes water runoff from the existing highway and is diverted through Macleay Valley Way construction works via CSR 309 & 310. Tannin affected water has largely pooled within project boundaries and there was no evidence of tannin affected water within the waterbody downstream. | 01/04/14 | Tannin water caught behind the bunds and within the project boundary was pumped out and used for dust suppression. Additional bunds to be installed and clean water better diverted around site to further reduce the possibility of mixing clean water with tannin leachate. |
| Near Hit - Environmental | Category Two | Small oil leak from ISUZU Concrete pump in Fill 23<br>A spot of hydraulic oil was identified under plant number 0344 (ISUZU Concrete Pump) as the truck was sitting up to pump. Approximately 200mL of oil was on the fill. The cause of the oil leak was from the overfilling of oil in the tank from the servicing of the truck from the previous day. | 08/04/14 | The employee identified the spot of oil and used half a bag of kitty litter and three pads to soak up the oil. Once the oil had soaked up, this was excavated along with a small amount of fill and placed in a hydrocarbon bag and taken to a bunded area for correct disposal. The site mechanic took the truck to ensure there are no additional issues. |
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Water cart blew hydraulic hose<br>Water cart blew hose on fill | 12/04/14 | Spill contained and cleaned up by site team. Contaminated material covered until removed from site to an appropriately licenced facility. Fitter fixed hose. |
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Hydraulic hose leak Cut 9<br>Air compressor for was being used for shotcrete works. The Air compressor had a mechanical failure which resulted in a minor hydraulic oil leak less than 5L. The spill was contained on site. | 16/04/14 | A spill kit was used to clean up spill and all contaminated material is to be disposed of to approved location and removed from site to a licensed facility. Spill kit to be restocked. Air compressor was removed from site. All compressors to be checked during prestart to identify any issues beforehand to prevent similar incidents from occurring in the future. |

| Environmental Aspect (Thiess Classification) | RMS Incident Classification | Incident | Date | Actions |
|---|---|---|---|---|
| Class 3 Environmental Harm – Contamination of land/groundwater | Category Two | Oil spill at main batch plant<br>Truck and dog dumping material at the Cooks Lane batch plant broke a hydraulic hose fitting and thus resulted in an oil spill. Spill was contained to the work area within the site boundaries and no environmental harm resulted. | 16/04/14 | Spill cleaned up and plant repaired prior to re-entry on site. |
| Class 3 Environmental Harm – Flora and Fauna | Category Two | Cut 13 storage of material outside clearing limits<br>Clearing limits were set out as part of G40 hold point. Clearing tape was damaged by cattle. Construction materials were placed within project boundary on an area designated not to be cleared. Materials included mulch (100m3), topsoil (2m3) and plant. Part of that area is mapped as EEC however there was no clearing or impact to EEC associated with the incident. | 14/05/14 | Materials removed and area seeded. Flagging tape reinstated.<br>Area to be disturbed during landscaping works. LA002 landscape drawings detail P6 tree planting for the area. |
| Class 3 Environmental Harm - Contamination of Land / Groundwater | Category Two | Moxy Oil leak Fill 33<br>Moxy transporting sheared timber within the project had a warn hose causing a hydraulic leak onto the ground. | 20/06/14 | Parked up moxy, contained and removed spill, and fitter fixed hose |
| Class 3 Environmental Harm - Contamination of Land / Groundwater | Category Two | Blow out of hydraulic hose from moxy water cart. Moxy was watering haul roads when<br>hydraulic hose blew. All spilled oil was contained to the project alignment. 101 L of hydraulic oil along the length of Cut 10. | 25/06/14 | Bund put around water cart to prevent oil going off site. Grader used to clean up haul road. Contaminated material pick up with Excavator and placed in oil bin to<br>be disposed of at licensed facility. Water cart to be repaired prior being used again on site. |

| Environmental Aspect (Thiess Classification) | RMS Incident Classification | Incident | Date | Actions |
|---|---|---|---|---|
| Class 3 Environmental Harm - Dust, Odour & Emissions to Atmosphere | Category Two | Cut 8 Mulch fire<br>A mulch stockpile began to smoulder causing medium levels of smoke to move beyond the project boundary. The smoke was identified by a community member who notified the project team on Sunday the 29 June 2014. | 29/06/14 | Project personnel arrived on site on Sunday the 29 June and assessed the situation. An excavator was called in to carry out containment measures. Smoke level at this time was low being dispersed by moderate winds.<br><br>Project personnel arrived at the site on Monday 30 June to re assess the site. Due to cool, still conditions the impact of smoke was moderate. The EPA Pollution Hotline was notified (Event Number 42752) along with RMS, Kempsey Shire Council and Kempsey Rural Fire Service and affected community members.<br><br>Mitigation measures were undertaken immediately to reduce the level of smoke being produced. The smoke was travelling in a north easterly direction and was visible from the Pacific Highway. Smoke did not have an impact on passing motorist.<br><br>The stockpile was extinguished by 9:30am on the 30 June with no further smoke being generated. The fire was extinguished by spreading the mulch out with an excavator into a temporary stockpile site adjacent to the project area. The Environmental Manager assessed the area prior to spreading the mulch and deemed it a suitable location that did not contain any sensitive aspects (EEC, threatened species or heritage). The mulch will remain in this location until it has cooled and can be placed back within the clearing limits (approximately two weeks).<br><br>Relevant stakeholders were updated |

| Environmental Aspect (Thiess Classification) | RMS Incident Classification | Incident | Date | Actions |
|---|---|---|---|---|
| Class 3 Environmental Harm – Dirt or Mud on Public Roads | Category Two | Material on Local road<br>Carting concrete from Batch Plant (Cooks Lane) to Fill 33 – Gate 11- North Stuarts Point road - for concrete pour to mainline paver. Left rear grain lock loosened releasing a small amount of concrete onto local road (Three wheelbarrows). Distance of spill covered approximately 20 meters. | 24/07/14 | The driver stopped and contacted Batch Plant on UHF 10 for assistance. Traffic control was set up and a Loader, ground personnel and a sweeper water cart were used to swiftly remove the spillage. |
| Class 3 Environmental Harm – Contamination of Land / Groundwater | Category Two | 5L fuel leak from spansaw saw cutting machine<br>Saw cutting machine was working on base paving in the northern zone, at approximate chainage 38160. The saw cutting machine has dual fuel tanks to allow for the tank volumes to equalise. However, due to the grade of the new pavement, the lower tank overtopped slightly due to the applied head of pressure. | 5/08/14 | The spill kit was used immediately and absorbent material was placed on the spill. Materials were retrieved and are being retained at the bunded area at the workshop at the Cooks Lane Compound. |
| Class 3 Environmental Harm - Contamination of Land / Groundwater | Category Two | 2L fuel leak from spansaw saw cutting machine<br>The same saw cutting machine was working on base paving in the northern zone, at approximate chainage 38160. The saw cutting machine has the same spill as yesterday due to the grade of the pavement. | 6/08/14 | The spill kit was used immediately. The oil contaminated material was stored at the workshop as per all oily waste incidents. |
| Class 3 Environmental Harm - Contamination of Land / Groundwater | Category Two | Hydraulic hose break<br>While rolling select a hydraulic hose burst. Approximately 5L of hydraulic oil was spilled. All spilled material was contained to the site and control measures implemented immediately and contaminated material disposed of to licenced facility. The roller was repaired prior to being reused onsite. | 11/08/14 | Roller parked up, kitty litter used to absorb spill, roller to be repaired prior to reuse. Contaminated material to be disposed of to licenced facility. |
| Report Only | Not Reportable | Injured Kangaroo found on Cut 11<br>Project Ecologist responded to a call of an injured Kangaroo within the project boundaries by site personnel. The cause of injury is unknown and the injured wildlife was found on a wet weather day with the majority of site activities cancelled including bulk earthworks. | 25/08/14 | Upon arrival at the scene the Kangaroo was captured and transported to a local veterinary clinic for treatment. |

**Table 2 Summary of environmental management related complaints received during the reporting period.**

| Porte, Monica : All Actions | Action Requested | Action Taken |
|---|---|---|
| Events<br>Complaint - 05 Mar 2014<br><br>Set By: Porte, Monica<br>Deadline: 05 Mar 2014<br>Date Resolved: 05 Mar 2014 | Resident would like the truck driver found and spoken to in regards to speeding. | CM to initialise report on who owns the truck and advise him of the speeding complaint.<br><br>CLOSED |
| Events<br>Complaint - 05 Mar 2014<br><br>Set By: Porte, Monica<br>Deadline: 05 Mar 2014<br>Date Resolved: 05 Mar 2014 | Resident would like the truck driver cautioned about his driving behaviour and would like something done about the condition of Collombatti Rd. | CM sent an email to Aimee Harkness to get ID of truck for further action.<br><br>CLOSED |
| Events<br>Complaint - 07 Mar 2014<br><br>Set By: Porte, Monica<br>Deadline: 07 Mar 2014<br>Date Resolved: 07 Mar 2014 | Resident wanted the driver from a truck to stop speeding | CM said the driver would be issued with a verbal warning.<br><br>CLOSED |
| Events<br>Complaint - 10 Mar 2014<br><br>Set By: Porte, Monica<br>Deadline: 10 Mar 2014<br>Date Resolved: 10 Mar 2014 | Resident called to say that she had been travelling behind a truck when a rock had come off the back of the truck and cracked her windscreen. She asked what could be done. | CM said that she would try to identify the driver / company and would pass on the claim for them to deal with.<br><br>CLOSED |
| Events<br>Complaint - 07 Mar 2014<br><br>Set By: Porte, Monica | Resident would like the trucks to stop speeding before there is a serious accident. | CM responded to resident in regards to complaint and advised that the work in that area has now ceased.<br><br>CLOSED |

| Porte, Monica : All Actions | Action Requested | Action Taken |
|---|---|---|
| Deadline: 14 Mar 2014<br>Date Resolved: 11 Mar 2014 | | |
| Events<br>Complaint - 07 Apr 2014<br><br>Set By: Porte, Monica<br>Deadline: 07 Apr 2014<br>Date Resolved: 07 Apr 2014 | Resident would like be bad driving behaviour from the project staff rectified. | CM to send an email to Matt Perkins to find the driver and issue a warning as that sort of behaviour is unacceptable.<br><br>CLOSED |
| Events<br>Complaint - 08 Apr 2014<br><br>Set By: Porte, Monica<br>Deadline: 08 Apr 2014<br>Date Resolved: 08 Apr 2014 | Resident was very distraught and said she was a "prisoner in her own house" due to the noise.<br><br>She said there was some screeching noise in the vicinity and lots of activity. | CM suggested that she provide weekly updates on the construction programming so she would be aware of when particularly noisy or busy activities were planned adjacent to her property.<br><br>CM committed to call Jane back within the next two days to advise what was coming up, any discoveries in relation to the noise generation and pass on her concerns to RMS.<br><br>CM spoke with the superintendent, CW, to ask the contractor to repair the machine so it did not emit such a loud noise.<br><br>CLOSED |
| Events<br>Complaint - 04 Apr 2014<br><br>Set By: Porte, Monica<br>Deadline: 11 Apr 2014<br>Date Resolved: 04 Apr 2014 | Resident would like all of the barbed wire laying around in properties taken away as it is a hazard to her dogs and wildlife in general. | CM informed resident that she would go and see the fencing contractors immediately and make sure that barbed wire is removed.<br><br>CLOSED |
| Events<br>Complaint - 04 Apr 2014 | Resident would like a better faster sweeper and restricting drivers to a single path for crossing Stuarts | CM to liaise with the traffic manager to discuss options as requested by resident. |

| Porte, Monica : All Actions | Action Requested | Action Taken |
|---|---|---|
| Set By: Porte, Monica<br>Deadline: 11 Apr 2014<br>Date Resolved: 07 Apr 2014 | point road, this would cut cleaning time considerably.<br><br>Resident also thought that the project needed more than one person managing the traffic especially in peak times. | CLOSED |
| Events<br>Complaint - 12 Apr 2014<br><br>Set By: Porte, Monica<br>Deadline: 12 Apr 2014<br>Date Resolved: 12 Apr 2014 | Resident called to complain about the trucks travelling along Stuarts Point Road and asked if they could be stopped.<br><br>Resident indicated that they would take further action themselves. | CM called Craig Wheeler and advised him of the threatening phone call.<br><br>CM said he would pass it on to the truck drivers so they could be on their guard.<br><br>CLOSED |
| Events<br>Complaint - 30 Apr 2014<br><br>Set By: Porte, Monica<br>Deadline: 30 Apr 2014<br>Date Resolved: 30 Apr 2014 | Resident wants the signs on her front lawn removes so that she can mow the grass. | CM rang and spoke to the traffic manager to make sure that the signs are removed today.<br><br>CLOSED |
| Events<br>Complaint - 07 May 2014<br><br>Set By: Porte, Monica<br>Deadline: 07 May 2014<br>Date Resolved: 07 May 2014 | Resident felt that the only solution to the construction noise was to leave the property. Resident agreed to put her request in writing | CM said she would have to discuss it with RMS and asked if the resident could put her request in writing.<br><br>CLOSED |
| Events<br>Complaint - 10 May 2014<br><br>Set By: Porte, Monica<br>Deadline: 10 May 2014<br>Date Resolved: 10 May 2014 | Resident asked if we could stop the increased truck movements on Stuarts Point Road on Saturdays at 1pm. | CM explained that we had approvals in place for work extended hours on Saturday until the end of May. She said the work would then revert to normal hours (ie: cease work at 1pm on Saturdays).<br><br>CM said there was only about 4-5 more weeks of hauling |

| Porte, Monica : All Actions | Action Requested | Action Taken |
|---|---|---|
| | | left.<br><br>CLOSED |
| Events<br>Complaint - 10 May 2014<br><br>Set By: Porte, Monica<br>Deadline: 17 May 2014<br>Date Resolved: 12 May 2014 | Resident wanted to know how long you expect us to put up with the increased truck movements on a weekend. | CM advised that the increased truck movements are expected to take about another 4-5 weeks (weather permitting)<br><br>In regards to Saturday work, our current approvals only permit us to haul until 5pm on Saturday until the end of this month. Following that, we will cease Saturday operations at 1pm.<br><br>CLOSED |
| Events<br>Complaint - 28 May 2014<br><br>Set By: Porte, Monica<br>Deadline: 28 May 2014<br>Date Resolved: 28 May 2014 | Resident wants something done about the truck driving behaviour on the project. | CM advised that this issue will be raised with the truck drivers.<br><br>Craig Wheeler advised that he will be addressing the crew in the morning personally.<br><br>CLOSED |
| Events<br>Complaint - 03 Jun 2014<br><br>Set By: Porte, Monica<br>Deadline: 03 Jun 2014<br>Date Resolved: 03 Jun 2014 | Residents want the trucks on Fishermans Reach Road to stop speeding | CM organised to have VMS board installed on Fishermans Reach Road and encouraged residents to call back if they had any specific details of trucks speeding.<br><br>CLOSED |
| Events<br>Complaint - 29 May 2014<br><br>Set By: Porte, Monica<br>Deadline: 05 Jun 2014 | Resident would like her house and water tank cleaned as she believes that the dust from the construction has made the house and water dirty. | CM advised that we have not had a complaint in regards to this issue and would organise some dust monitoring and evaluate the issue once the results were available.<br><br>CLOSED |

| Porte, Monica : All Actions | Action Requested | Action Taken |
|---|---|---|
| Date Resolved: 30 May 2014 | | |
| Events<br>Complaint - 11 Jun 2014<br><br>Set By: Porte, Monica<br>Deadline: 11 Jun 2014<br>Date Resolved: 11 Jun 2014 | Resident called to say she wanted to report a "road rage" incident involving personnel in a Thiess vehicle with licence plate number ( BT 99 NT). | CM will speak with the plant department and identify the driver who will then be repremanded.<br><br>CW severely reprimanded the driver and issued with a verbal warning.<br><br>CLOSED |
| Events<br>Complaint - 19 Jun 2014<br><br>Set By: Porte, Monica<br>Deadline: 19 Jun 2014<br>Date Resolved: 19 Jun 2014 | Resident also asked for a copy of the noise report. | CM told resident she would send a copy of the noise report as soon as it was available.<br><br>CLOSED |
| Events<br>Complaint - 23 Jun 2014<br><br>Set By: Porte, Monica<br>Deadline: 23 Jun 2014<br>Date Resolved: 23 Jun 2014 | Resident rang to complain about the number of trucks and also asked if we might consider stopping the trucks during the school holidays. | CM advised resident that we would also give some consideration to her suggestion to stop the trucks running in school holidays.<br><br>CLOSED |
| Events<br>Complaint - 03 Jul 2014<br><br>Set By: Porte, Monica<br>Deadline: 03 Jul 2014<br>Date Resolved: 03 Jul 2014 | Resident called to complain about the delay at the traffic lights at Stuarts Point Road. | CM rang TM (MP) who said he would speak with the traffic controller first and advise what other action would be taken.<br><br>CLOSED |
| Events<br>Complaint - 17 Jul 2014<br><br>Set By: Porte, Monica<br>Deadline: 17 Jul 2014 | Resident said she could not understand why we couldn't fence the property as it should not be her obligation to do so and wanted this complaint escalated to RMS. | CM asked if there was anything in her contract that specified when the fence would be done (as Thiess did not have an instruction to temp fence).<br><br>CM said she would escalate her concerns to RMS her |

| Porte, Monica : All Actions | Action Requested | Action Taken |
|---|---|---|
| Date Resolved: 17 Jul 2014 | | concerns<br><br>CM sent an email to RMS with the details of the complaint.<br><br>CLOSED |
| Events<br>Complaint - 28 Jul 2014<br><br>Set By: Porte, Monica<br>Deadline: 28 Jul 2014<br>Date Resolved: 28 Jul 2014 | Resident wanted assurance that the access on Seven Hills Road would not be closed as it would be a disastrous situation in an emergency. | CM advised resident the the person responsible for leaving the gate locked has received an official warning and that it was a human error that we have absolutely no intention of repeating.<br><br>CLOSED |
| Events<br>Complaint - 27 Aug 2014<br><br>Set By: Porte, Monica<br>Deadline: 04 Sep 2014<br>Date Resolved: 29 Aug 2014 | Resident wants the access to her driveway repaired as soon as possible as she cannot drive on it without getting bogged. | CM apologised and said the Utilities Manager and Site Manager were heading there now to investigate and we would have it repaired today.<br><br>CLOSED |

**Report Parameters:**
Event Type matches Complaint
Event Date Between Saturday, 4 March 2014, Sunday, 3 September 2014

# Appendix 4
# Monitoring data

### Table 1 – Total Insoluble Solids

| Gauge Number | Type | Monthly Results - Total Insoluble Solids - (g/m$^2$/month) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Max target | Ave +2g/m$^2$ Target[1] | March | April | May | June | July | August |
| DDG1 - Frederickton | A - Test | 4 | 3.0 | - | 0.7 | 3.0 | 0.9 | 1.5 | 2.4 |
| | B - Control | 4 | 3.0 | 0.3 | 0.2 | 1.6 | 0.1 | 2.1 | 0.2 |
| DDG2 – Kemps Access | A - Test | 4 | 3.0 | - | 0.4 | 0.5 | 0.3 | 0.7 | 0.4 |
| | B - Control | 4 | 3.0 | 0.8 | 0.6 | 0.8 | 0.4 | 1.2 | 1.2 |
| DDG 3 – Cooks Lane | A - Test | 4 | 3.0 | - | 1.8 | 1.2 | 1.9 | 3.1 | 1.4 |
| | B - Control | 4 | 3.0 | 0.4 | 0.5 | 0.6 | 0.6 | 0.8 | 0.4 |
| DDG 4 – Nirvana Way | A - Test | 4 | 3.0 | **8** | 1.2 | 3.2 | 1.5 | 2.2 | 0.7 |
| | B - Control | 4 | 3.0 | - | 0.2 | 0.3 | 0.3 | 0.6 | 0.3 |
| DDG 5 – Stuarts Point Road | A - Test | 4 | 3.0 | - | 0.7 | 0.7 | 0.6 | 1.5 | 1.9 |
| | B - Control | 4 | 3.0 | 0.7 | 0.4 | 0.9 | 0.5 | 0.5 | 0.5 |
| DDG 6 – Eungai Rail | A - Test | 4 | 3.0 | - | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 |
| | B - Control | 4 | 3.0 | 0.3 | 0.3 | 0.2 | 0.5 | 0.3 | 0.2 |

### Table 2 – Total Ash Content

| Gauge Number | Type | Monthly Results – Ash Content - (g/m2/month) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Max target | Ave +2g/m$^2$ Target[1] | March | April | May | June | July | August |
| DDG1 - Frederickton | A - Test | 4 | 2.6 | - | 0.5 | 2.7 | 0.6 | 1 | 1.9 |
| | B - Control | 4 | 2.6 | 0.2 | 0.2 | 0.7 | 0.1 | 1 | 0.2 |
| DDG2 – Kemps Access | A - Test | 4 | 2.6 | - | 0.4 | 0.4 | 0.2 | 0.3 | 0.4 |
| | B - Control | 4 | 2.6 | 0.6 | 0.6 | 0.7 | 0.3 | 0.7 | 1.2 |
| DDG 3 – Cooks Lane | A - Test | 4 | 2.6 | - | 1.6 | 1.1 | 1.7 | 2.5 | 1.4 |
| | B - Control | 4 | 2.6 | 0.3 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 |
| DDG 4 – Nirvana Way | A - Test | 4 | 2.6 | 1.6 | 0.9 | 2.7 | 1.2 | 2 | 0.8 |
| | B - Control | 4 | 2.6 | - | 0.2 | 0.1 | 0.1 | 0.5 | 0.2 |
| DDG 5 – Stuarts Point Road | A - Test | 4 | 2.6 | - | 0.5 | 0.5 | 0.5 | 1.1 | 1.6 |
| | B - Control | 4 | 2.6 | 0.3 | 0.3 | 0.5 | 0.3 | 0.3 | 0.3 |
| DDG 6 – Eungai Rail | A - Test | 4 | 2.6 | - | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 |
| | B - Control | 4 | 0.4 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 |

**Table 3 – Gauge Locations**

| Gauge Number | Type | Address | Proximity to Construction work |
|---|---|---|---|
| DDG1 B | Test (impact) | Frederickton School. Corner Great Northern Road / Pacific Highway | App. 850m to nearest construction area (west of corridor). |
| DDG2 B | Control | 101 Kemps Access | App. 740m to nearest construction area (west of corridor) |
| DDG3 B | Test (impact) | 92 Cooks Lane | App. 1000m to nearest construction (east of corridor) |
| DDG4 A | Control | 62 Nirvana Way | App 370m to nearest construction (west of corridor) |
| DDG5 B | Test (impact) | 165/175 Stuarts Point Road | App 1000m to nearest construction and 200m from proposed upgrade to access along Stuarts Point road (east of corridor) |
| DDG6 B | Control | Road Reserve. 26 – 30 Vacant blocks | App 700m to nearest construction (west of corridor) |
| DDG1 A | Test (impact) | Southern Compound | App. 140m to nearest construction area (west of corridor). |
| DDG2 A | Control | 243 Kemps Access | App. 90m to nearest construction area (west of corridor) |
| DDG3 A | Test (impact) | 229 Cooks Lane | App. 230m to nearest construction area (east of corridor) |
| DDG4 B | Control | Powerline Easement south of Nirvana Way, opposite Kawana Lane | App. 315m to nearest construction area (east of corridor) |
| DDG5 A | Test (impact) | 21 Stuarts Point Road | App. 35m to nearest construction area (east of corridor) |
| DDG6 A | Control | 3420 Pacific Highway | App. 70m to nearest construction area (west of corridor) |

**NOISE MONITORING**

**Frederickton to Eungai Noise Monitoring Summary Report**

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 19A | 6/03/2014 | 1605 | *41* | *52* | 75 | | Yes | 47.8 | Compliant. Controls as per NVMP adequate | Construction works in this area included scrapers dropping material in Fill 11. A grader, a smooth drum roller and a padfoot were working back and forth to the south in fill 11. Also, there was one jackhammer drill working in the soil which was working on soil samples. Background noise consisted of pacific highway traffic, residents' barking dog and an overhead plane. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26A | 7/03/2014 | 16:16 | *44* | *52* | 75 | | Yes | 46.7 | Compliant. Controls as per NVMP adequate | Reading was taken at the back of the residence approximately 84 metres from the house at their fenceline. The pacific highway noise dominated the reading. A mulcher was hear in the distance at about 300 m to the alignment boundary. A dozer was working, and an excavator and two moxies were hauling in cut 20 to the south. These works were not heard from this location. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 27A | 7/03/2014 | 15:00 | *44* | *54* | 75 | | Yes | 48.7 | Compliant. Controls as per NVMP adequate | Construction works to the north included a dozer pushing matieral, as well as an excavator loading three moxies and then driving north. The loudest noise measured was due to the squeaking sound from the dozer. Some background noise was encountered with a cow, dogs barking, pacific highway draffic and crickets throughout. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 28C | 7/03/2014 | 14:20 | *51* | *60* | 75 | | Yes | 54.6 | Compliant. Controls as per NVMP adequate | Construction works consisted of works in Barraganyatti Creek on finishing the pipework. To the south, a dozer was pushing material, with an excavator not far from it loading up a line of moxies which were hauling the material past the monitoring point and to the north. A water cart was also servicing this area, driving back and forth. There was another two excavators working on batters to the north adjacent to the Mango Farm. The highest readings were noticed when the moxies were slowing down on the water diversion humps which were on their haul path. | |
| Out of Hours Works Assessment | OoHW - SS Monitoring (Mar 2014) | 19A | 11/03/2014 | 19:35 | *44* | *41* | 41 | 38.7-66.5 | Yes | 44.5 | Background noise was primary contributor to noise. See comments. | Settlement monitoring, nightworks.<br>Works being undertaken included 2 light vehicles and 4 people working on the ground. All construction activities were inaudible. Main source of noise was traffic on highway. | NO Actions carried out as works were inaudiable |
| Out of Hours Works Assessment | OoHW - SS Monitoring (Mar 2014) | 19A | 11/03/2014 | 22:15 | *41* | *41* | 41 | 36.8-49.2 | Yes | 41.5 | Background noise was primary contributor to noise. See comments. | Settlement monitoring, nightworks .<br>Works being undertaken included 2 light vehicles and 4 people working on the ground. All construction activities were inaudible. Main source of noise was traffic on highway. | NO Actions carried out as works were inaudiable |
| Periodic (monthly) monitoring | Bulk Earthworks | 20D | 12/03/2014 | 1305 | *40* | 59 | 75 | | Yes | 40.3 | Compliant. Controls as per NVMP adequate | Construction works in this area included a dozer and excavator working on Kemps Access itself, which was approximately 200m away from the monitoring location. A traffic controller was operating less than 10m away from the monitoring location and radio talk was heard. A few light veicles travelled by the monitoring location. In terms of background noise, the receivers dog and rooster were generating noise. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 22B-1 | 12/03/2014 | 10:35 | *41* | 53 | 75 | | Yes | 52.9 | Compliant. Controls as per NVMP adequate | There was a variety of construction activity occuring in this noise catchment. The closest piece of plant was an excavator digging out drains at about 80m away from the monitoring location. At about 100m away, a water cart drove past and also stopped at the basin to load water into the cart. To the south, approximately 1km away, timber piling works were occuring which was heard from the monitoring location. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 12/03/2014 | 12:10 | *41* | 44 | 75 | | No | 38.7 | Compliant | Reading was taken at the construction and receivers boundary which is about 670m away. Construction works in this catchment included scraper hauling past, a water cart was also passing through this circuit keeping up with the scraper activity. An excavator and roller were working about 200m away to the north where some scrapers were dropping off material. The actual noise reading at the monitoring point was 61.6. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26C | 14/03/2014 | 8:15 | *44* | 56 | 75 | | Yes | 49.4 | Compliant. Controls as per NVMP adequate | Reading was taken in response to a stakeholder complaint. Excavator was working in a drainage line approx. 250m from the receiver. LAeq was 49.4dB(A) and this resulted in a predicted level at the receiver of 41dB(A), which is below the noise objective of 44dB(A) for daytime works – background + 10dB(A). | |
| Periodic (monthly) monitoring | Bulk Earthworks | 29A | 14/03/2014 | 13:50 | *52* | 55 | 75 | | Yes | 46.4 | Compliant | The construction noise which was heard was the hauling of material by a moxie fleet. Although, it was hard to distinguish between the moxie haul and the pacific highway traffic. This is due to the shielding of noise wth the mulch bund on the western side of the alignment, just south of Barraganyatti Hut Road. Other works which were occuring in the area was pipework finishing works opposite the mango farm, although the noise generated from this activity was not easily distinguished in the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 30E | 14/03/2014 | 14:15 | *49* | 56 | 75 | | Yes | 59.4 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Construction works in this area consisted of moxies and water-carts hauling across stuart Point Road, which had traffic control in place for local traffic. The loudest readings recorded were due to local traffic driving past the monitoring point. A scraper was heard to the north of the monitoring location as well as an excavator whioch was working on a pipeline to the north on the access road. A roller was heard working approximately 1km to the south. Reversing squarkers were also heard intermittently throughout the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 21C | 15/03/2014 | 12:25 | *41* | 60 | 75 | | Yes | 46.9 | Compliant. Controls as per NVMP adequate | Audible construction works in this area included Access Road A works from Mills to Seashore Lane as well as main line works. Moxies were hauling material from Seashore Lane to the south which were being loaded by an excavator. Light vehicles were travelling through and truck and dogs were entering the access at Mills Lane and tipping material to the south on the access road. A gader and water cart were also on the access road, but these machines were not identified in the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 25C | 17/03/2014 | 15:40 | *44* | 51 | 75 | | Yes | 38.9 | Compliant | A truck and dog fleet were using a haul route from the main compound down to fill 19 and back again, this would have been approximately 600m away. A dozer was also working approximately 700m to the north of the monitoring point. Reversing alarms were also heard from both areas of construction activity. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 31A | 17/03/2014 | 16:20 | *50* | 60 | 75 | | Yes | 49.0 | Compliant | There was no construction activity to the north of the monitoring point. To the south, there was a grader and excavator loading material into moxies, which were hauling to the south towards Stuarts Point Road. These two pieces of machinery were approximately 1km away from the monitoring location. After the reading was taken, a padfoot was identified as also working in the same vicinity, but the noise source was not distinguised in the 15 minute period. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26C | 19/03/2014 | 12:20 | *44* | 56 | 75 | | No | 34.0 | Compliant | Modelling was undertaken to determine predicted level at the receiver which was 53dBA. Monitoring of excavator loading moxy which was unloading material 20 metres to the south where a roller was rolling in the inside bund to the clean water drain. All works undertaken towards the crown of Cut 24. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26C | 19/03/2014 | 12:00 | *44* | 56 | 75 | | No | #DIV/0! | #DIV/0! | Modelling was undertaken to determine that predicted level at the receiver was 46dBA, which is above the objective and under the predicted level for the reciever. Monitoring was on excavator spreading topsoil bund and tracking south of CML 310, as well as a bobcat removing sheared timber | |

**Frederickton to Eungai Noise Monitoring Summary Report**

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 20D | 3/04/2014 | 15:40 | *41* | 59 | 75 | | No | 43.0 | Compliant. Controls as per NVMP adequate | Monitoring was undertaken at the receivers fenceline, which was approximately 140m away. Two excavators were working at the bridge two abutment which is approximately 150m away. Truck and dogs were hauling through the alignment. Noise other than construction was heard in periods through the reading which was due to the receivers dog barking. There were three occassions of louder readings which were noted in very small intervals. These were due to the shaking of the excavator bucket. Actual reading taken was 47.8dB(A), after modelling, the reading at the receiver would be around 22dB(A) which is below the background noise criteria. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 3/04/2014 | 14:30 | *41* | 44 | 75 | | No | #DIV/0! | #DIV/0! | Monitoring was completed at the construction and receivers boundary. The receiver is approximately 670m away. The closest construction activity was approximately 50m away. Construction activity included timber piling at the bridge 6 location, along with chainsawing of the timbe piles. A roller was operating to the south of the monitoring point. Also to the south, an excavator was working on the other side of the bridge platform. One truck and dog hauled past once during the reading. Scraper activity was also heard, these machines were operating to the north of the monitoring point. Actual reading taken was 59.8dB(A), after modelling, the reading at the receiver would be around 27dB(A) which is below the background noise criteria. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 25C | 4/04/2014 | | *40* | 51 | 75 | | Yes | 43.1 | Compliant. Controls as per NVMP adequate | Construction works included the loading of moxies by an excavator on the north side of Cooks Lane. Moxies were heard hauling past to the south, and back up to the north. The loudest readings noted was when moxies were braking down the hill. A dozer was heard in the distance. A grinder was working 1.5km to the north, although was not specifically heard during the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 27A | 4/04/2014 | 11:15 | *44* | 54 | 75 | | Yes | 55.2 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Construction works which were heard through the reading included the loading of moxies by an excavator. The works were occuring on the highest part of Nirvana Way, one moxie at a time. One padfoot was also flattening the fill surface at the top of the hill. Reversing sounds were heard as well. A dozer was being serviced at the time, which was not generating any noise. Non-construction noise which was heard included cows, dogs barking and a horse which was generated very close to the monitoring point at the receivers property. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 28C | 4/04/2014 | 14:40 | *51* | 60 | 75 | | Yes | 57.3 | Compliant. Controls as per NVMP adequate | Construction works at the time of the reading included a roller- padfoot working in front of the monitoring point which was smoothing access road B. An excavator was working to the south of the top of the hill loading 4 moxies, which were then hauling towards the south. Another excavator was working to the north on the access road. A grader was also working on the access road to the south of the monitoring point. Pacific Highway traffic was heard throughout the monitoring period. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26A | 7/04/2014 | 12:15 | *44* | 52 | 75 | | Yes | 45.0 | Compliant. Controls as per NVMP adequate | A grinder working on mulching timber was heard throoughout the reading. This machine was working on the southern end of cut 23, which was about 550m away from the receiver. Non-construction noise was heard, which included noise from the current pacific highway, birds and the receivers dog and hitting metal in the yard (of which made up the loudest readings for small periods of time). | |
| Periodic (monthly) monitoring | Bulk Earthworks | 21C | 8/04/2014 | 16:10 | *41* | 60 | 75 | | Yes | 45.1 | Compliant. Controls as per NVMP adequate | Construction works heard included moxies and truck and dogs hauling past Seashore Lane and through the alignment. An excavator was working close to Seashore lane. A drill was heard which was testing fills. Reversing beepers were also heard, as well as horns from the excavator. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 8/04/2014 | 15:10 | *41* | 44 | 75 | | No | #DIV/0! | #DIV/0! | Reading was taken at this monitoring location for a second time this month as concrete driven piling had just begun. The reading was taken approximately 20m from the piling rig, which is about 900m from the receiver. The reading taken 20m from the rig was 75 dB(A) and the modelled value at the receiver was 25.2dB(A) which is below the background noise criteria. As well as concrete diving works, moxies and truck and dogs were hauling past, as well as watercarts and padfoot and dozer working in close proximity. | |
| Response to complaint | Bulk Earthworks | 26C | 10/04/2014 | 16:30 | *44* | 56 | 75 | | Yes | 55.0 | Compliant. Controls as per NVMP adequate | Reading taken in response to a complaint. Reading was taken at powerline easement boundary. Predicted noise level is 55dB(A) at the receiver, actual reading was 64.6dB(A) at the monitoring point. Monitoring point was approximately 78m from the closest works and the receiver was approximately 227m from the works. Construction equipment heard during the reading included a D6 dozer pushing material back and forth, wo scrapers dropping off fill in front of receiver, wo exavators in the creekline loading a moxie and one padfoot dozer which was north of the creekline pushing material. The loudest machine working was the dozer, which was approximately 262m from the receiver | |
| Periodic (monthly) monitoring | Bulk Earthworks | 29A | 10/04/2014 | 11:00 | *52* | 55 | 75 | | Yes | 46.2 | Compliant | Traffic control was in place during the reading to allow for moxies to haul over the existing pacific highway. Due to the traffic control, highway traffic was fragmented at particular intervals. Trucks braking was heard approaching the red lights in place. Moxies were heard hauling as well as the excavator which was loading the moxies. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 30B | 10/04/2014 | 12:25 | *49* | 59 | 75 | | Yes | 50.6 | Compliant. Controls as per NVMP adequate | Construction works heard included two scrapers to the north on the access road, one padfoot which was located approximately 250m away. The padfoot was heard working the fill, as well as reversing throughout the reading. A dozer was working to the north. Moxies were hauling from south to north across Stuarts Point Road, which saw the need for traffic control. Non-construction activity which was heard included local traffic on Stuarts Point Road and highway noise. | |
| Spot check of works generating high noise impact | Bulk Earthworks | Chainage 34100 | 10/04/2014 | 16:15 | *#N/A* | #N/A | #N/A | | No | #N/A | #N/A | Spot check on D6 dozer approximately 15-40m away from pushing material on the Eastern side of the machine. Receiver would be approximately 240m away to the East. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 22B | 15/04/2014 | 1535 | *34* | 53 | 75 | | Yes | 55.8 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Reading taken at boundary fence which is approximately 68m away from the shed, actual reading at monitoring point was 62.8dB(A). This area was the main thoroughfare for truck and dogs and moxies to haul through. This haul road was approximately 55m away from the receiver. A dozer was working on the far western side of the alignment pushing material into a pipe area, of which the moxies were backing into and tipping fill for the dozer. A roller and grader were also working on the far side of the alignment about 140m away from the receiver which were working the alignment back and forth. Reversing beepers were heard. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 31A | 15/04/2014 | 14:05 | *50* | 60 | 75 | | Yes | 49.5 | Compliant | Construction works which were heard included the movement of scrapers to the south, and two excavators near the drainage line in cut 30. Constant highway traffic was heard throughout the reading. A grader was seen working after the reading was taken, although this was not heard. | |

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 19A | 30/04/2014 | 10:30 | *48* | 52 | 75 | | Yes | 50.4 | Compliant. Controls as per NVMP adequate | Construction and background noise was continuous throughout the monitoring period. The construction noise which was heard included moxies hauling, tipping, and accelerating, as well as reversing sounds. Rollers were seen working in cut 8. Rollers, excavators and light vehicles were working in fill 11. Note: The low visibility to fill 11 from Raymonds Lane did not allow the monitoring personnel to determine what plant was generating the reversing or tipping noise. Construction noise was audible between 40 and 54dB(A). Other sources of noise included birds, dog, cow which were audible between 42 and 68dB(A). | |
| Response to complaint | Bulk Earthworks | 26C | 12/05/2014 | 15:50 | *44* | 56 | 75 | | No | 51.6 | Compliant. Controls as per NVMP adequate | Monitoring point was located at fenceline. Monitoring was undertaken approximately 150m from the nearest excavator, 155m to the receiver, with a total distance of 245m from the nearest excavator to the receiver. Works in fill 27 included an excavator working and the manual installation of geogrid fabric. To the north, just south of Nirvana Lane was an excavator and roller. North of Nirvana was three excavators loading six moxies which were hauling to the north, away from the receiver. A roller and dozer were also working in this area. The access road saw a grader working and one truck and dog passing through. | Noise exceedence was identified as caused by local traffic noise as construction noise was not always heard throughout the reading. No mitigation measures implemented. |
| Response to complaint | Bulk Earthworks | 26C | 13/05/2014 | 12:45 | *44* | 56 | 75 | | No | 52.4 | Compliant. Controls as per NVMP adequate | scrapper circuit to the north of CML310 as well as an excavator loading moxys and surveyor on the ground. The majority of construction noise was generally recorded between 46 and 54dBA with isolated peaks in the high 60's as a result of the scrapper circuit between Fill 27 to Cut 25, which was 40 metres from the monitoring position at its closest point. Background sorces were recorded intermittent between 44 and 50dBA.<br><br>The LAeq predicted at the receiver is based on the LAeq recorded from the monitoring point and was made up of a total of all noise sources at various distances and modelled using the furthest distance of works recorded; 240metres. Subsequently the 52.42dBA modelled is likely to be less at the receiver due to the inclusion of background and various distances between activities and the monitoring point. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 27A | 14/05/2014 | 16:25 | *44* | 54 | 75 | | Yes | 51.8 | Compliant. Controls as per NVMP adequate | Construction activity in this noise catchment included truck and dogs, as well as moxies hauling between cut 28 and fill 32. A padfoot was working to the north of the monitoring point on the access road compacting the fill. The highest noise readings were attributed to the combination of construction noise with the background noise at the receiver. This was a combination of bird activity, dogs barking, neighbours talking, as well as the sound of the haulage. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 29A | 14/05/2014 | 15:30 | *52* | 55 | 75 | | No | 51.3 | Compliant | Reading was taken at the property boundary which is approximately 60m to the house. An excavator and a dozer were working approximately 330m from the house on the corner of Barraganyatti Hut Road and the Highway. Another excavator was loading material into two moxies, which were heard approaching, leaving and reversing. The highway was heard throughout the sample period. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 30E | 14/05/2014 | 14:40 | *49* | 56 | 75 | | Yes | 63.7 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Reading was taken at the property boundary, which is approximately 30m from the house. Scrapers were heard to the north in cut 28 and fill 32. An excavator was working on the bridge abutment for Stuarts Point Interchange. A water cart passed over Stuarts Point Road, which had traffic control in place this day. Local traffic was continuous throughout the reading and the highway noise was the predominant source of the noise. Construction noise was not always heard throughout the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 31A | 14/05/2014 | 14:10 | *50* | 60 | 75 | | Yes | 47.5 | Compliant | Reading was taken at property boundary which is approximately 60m away. Two excavators were working on the drainage line in Fill 32 (to the south of the receiver) which was approximately 330m from the receiver. One roller and one padfoot were also working in the same drainage line. Further to the south in fill 32, two scrapers were hauling up and down towards cut 30. The highest readings captured were from the local highway traffic and birds up to 54dB(A). A reading of 52dB(A) was recorded for a small period which was the hitting of an excavator bucket, reversing sounds, scrapers and highway traffic. | |
| Response to complaint | Bulk Earthworks | 26C | 14/05/2014 | 9:10 | *44* | 56 | 75 | | No | 56.0 | Compliant. Controls as per NVMP adequate | Construction activities consisted of several instances where plant used the haul road at 40 metres from the monitoring point, as well as culvert foundation works at 150 metres away and spreading of fill by a grader to the south of the monitoring point at 20 metres away at its closest point. The bulk of construction noise recorded ranged from 48 to 56 dBA and was a result of the grader 20 m to 100 metres away and the excavator preping the culvert at 150 metres away. The peak recordings were of plant using the haul road at approximately 40 metres away, of which 72dBA was the highest reading. There were only a few background readings recorded and ranged from 46 to 50 dBA.<br><br>The LAeq predicted at the receiver is based on the LAeq recorded from the monitoring event where total noise emissions were recorded. Although the grader operating between 20 to 100 metres to the monitoring point was the main contributor to the readings, the plant at 150 metres away, was the furthest point and was used to calculate the predicted level of 56dBA. Subsequently LAeq would have been lower if carried out at the receivers boundary. | |
| Periodic (monthly) monitoring | On-site Haulage | 19A | 15/05/2014 | 10:30 | *48* | 42 | 75 | | Yes | 43.8 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Construction works occurring included on-site haulage with truck and dogs as well as moxies. Onsite maintenance of a small excavator was occurring, as well as the passing of a water-cart up and down the alignment. The peaks recorded were due to background noise sources, which included bird noises. | |
| Response to complaint | Bulk Earthworks | 26C | 15/05/2014 | 15:00 | *44* | 56 | 75 | | No | 53.3 | Compliant. Controls as per NVMP adequate | Construction works occuring in this noise catchment included a fleet of four scrapers in fill 27 which were hauling material back and forth from cut 25 and 24. A 24 tonne excavator was excavation which was creating the foundation for the culvert 310 work area. Reversing sounds were also heard. The loudest readings were captured when the bucket was shaking or hitting against the ground. There were some natural sounds which included birds and frogs. | |
| Response to complaint | Bulk Earthworks | 26C | 16/05/2014 | 14:50 | *44* | 56 | 75 | | No | 45.9 | Compliant. Controls as per NVMP adequate | Construction works which was heard in this noise catchment included an excavator continuing to excavate the culvert 310 work zone. This excavator was working the entire noise reading period. A moxie was also heard hauling through fill 27 and reversing sounds were also heard throughout the reading. The loudest readings were heard for a few seconds at a time, which was caused by the excavator bucket hitting. The highway was heard constantly, as well as bugs in the vegetation. | |

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Response to complaint | Bulk Earthworks | 26C | 19/05/2014 | 14:05 | *44* | 56 | 75 | | No | 49.6 | Compliant. Controls as per NVMP adequate | Construction works heard for this reading included one smooth drum roller just north of culvert 310 rolling the fill. An excavator was placing rock in the culvert 310 excavation. There were two scrapers north of cut 24 with the other two scrapers in cut 23. The loudest readings occured when you could hear all plant working at the same time. Non-construction noise heard was te pacific highway traffic as well as bird noise throughout. | |
| Response to complaint | Bulk Earthworks | 26C | 20/05/2014 | 12:45 | *44* | 56 | 75 | | No | 54.0 | Compliant. Controls as per NVMP adequate | Construction activities varied between workers laying fabric in the culvert at approximately 15 metres from the monitoring point, roller and an excavator on the fill approximately 40 and 120 metres away at their closest point respectively, and a dozer in Cut 24 at 200 metres away. The excavator was recorded between 50 and 60 dBA and roller upto 68dBA. The dozer was only heard three times at the end of the sample period when the excavator was idling and peaked at 54 dBA. Background noise was only recorded three times at a reading of 52 dBA.<br><br>The excavator and roller were the predominent noise sources and was used to model the predicted level of 54dBA at the receiver, although all noise sources recorded contributed to the result. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 28C | 21/05/2014 | 15:25 | *51* | 60 | 75 | | No | 55.8 | Compliant. Controls as per NVMP adequate | Construction works occurring in this noise catchment included two excavators working in the middle of cut 25, an excavator was working on a batter approximately 160m away, then relocated to be approximately 70m from the monitoring point. Another excavator was working to the north of the monitoring point on the access road, alongside with a grader and roller in the same area. In terms of haulage, moxies were hauling to the north, whilst a concrete truck passed once and so did a water-cart. One moxie was tipping material on the eastern edge of the roadway which was about 70m from the monitoring point. Background noise consisted of constant frogs and crickets, as well as bird noise. | |
| Response to complaint | Bulk Earthworks | 26C | 21/05/2014 | 11:15 | *44* | 56 | 75 | | No | 51.1 | Compliant. Controls as per NVMP adequate | Construction activities recorded consisted of culvert works at 50 metres from the monitoring point, unloading of steel at 30 metres and topsoiling of batters by an excavator at 80 to 120 metres from the sampling point. Majority of construction noise was recorded between 52 and 56 dBA with several occurances in the 60's and low 70's for the unloading of steel. No background was recorded.<br><br>Predicted level at the receiver took into account total noise recorded and was modelled off the excavator at 120 metres to the monitoring point. Consequently predicted level would have been substantially reduced if monitoring had been carried out at the dwelling of the receiver. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26A | 22/05/2014 | 11:15 | *44* | 52 | 75 | | Yes | 41.1 | Compliant | Reading was taken 50m from receivers' house. Construction works which were heard included an excavator working in fill 24 which was approximately 350m away. Moxies were heard hauling to fill 24 which were ejecting material for the padfoot to flatten. A D9 dozer was also heard on the top of cut 20. There was quite loud background noise which consisted of the receivers rooster and chickens, birds and Pacific Highway traffic noise. The loudest noise reading was due to the rooster which made up the background noise. | |
| Response to complaint | Bulk Earthworks | 26C | 22/05/2014 | 16:00 | *44* | 56 | 75 | | No | 45.3 | Compliant. Controls as per NVMP adequate | Construction works heard in this area included moxies hauling past fill 27 as well as steel fixing activities which were occurring in the culvert 310 work zone. Background noise consisted of constant highway and bird noise. | |
| Response to complaint | Bulk Earthworks | 26C | 23/05/2014 | 14:40 | *44* | 56 | 75 | | No | 47.4 | Compliant. Controls as per NVMP adequate | Construction works heard in this area included moxies hauling past fill 27 as well as steel fixing activities which were occurring in the culvert 310 work zone. Light vehicles were heard driving past, as well as the sound of an excavator tracking north through fill 27. These tracks made up the noisiest machine in the area. Highway traffic was heard throughout, as well as bird noise. | |
| Out of Hours Works Assessment | OoHW - Bridge 12 Piling (June 2014) | 25C | 24/05/2014 | 14:15 | *44* | 39 | 39 | | Yes | 43.1 | Background noise was primary contributor to noise. See comments. | Reading was taken within 30m of the house. Construction works included the haulage of mulch within the compound facility to a stockpile site within the compound facility. Moxies were heard driving and reversing, as well as the tracking of the excavator which was loading them. Background noise consisted of birds and dogs barking, of which made up the loudest noises noted within the sampling period. | |
| Response to complaint | Bulk Earthworks | 26C | 27/05/2014 | 16:00 | *44* | 56 | 75 | | No | 49.9 | Compliant. Controls as per NVMP adequate | Construction works heard in the noise catchment included an excavator working on the top of cut 23 which was loading moxies and then hauled the material to the north, past the monitoring point. Another excavator was working near Basin 34000W. A dozer and excavator was also heard tracking to the south past the monitoring point. The highest noises were received due to the excavator bucket hitting or shaking, as well as the tracking of the dozer past the monitoring point. Pacific Highway traffic was heard throughout. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 20D | 28/05/2014 | 14:55 | *41* | 59 | 75 | | Yes | 54.4 | Compliant. Controls as per NVMP adequate | A dozer was working approximately 70m from the sensitive receiver. An excavator was working approxi ately 100m away loading up moxies to haul to the south, away from the monitoring point. A water cart also passed by a couple of times. Driven concrete piling was heard at the monitoring point, which was approximately 1.5km to the north on Collombatti Floodplain. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 21C | 28/05/2014 | 15:30 | *41* | 60 | 75 | | No | 49.9 | Compliant. Controls as per NVMP adequate | Sample was taken approximately 15m from the receivers house. Construction works which were heard included scrapers hauling, as well as moxies, reversing sounds and driven piling works. The loudest reading was recorded as a truck was air braking. A dozer was also heard towards the north. A truck and dog was also heard travelling on Quarry road. The piling works are approximately 3km to the north of the monitoring point. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 28/05/2014 | 14:05 | *41* | 44 | 75 | | No | 43.8 | Compliant. Controls as per NVMP adequate | Scrapers and a scraper-water cart were hauling past the sampling point from cut 12 to fill 15. There is a one way access track and the loudest readings were encountered when northbound scrapers had to decelerate and accelerate for southbound scrapers, and vice versa. As well as the scrapers, a roller was working 70m from the monitoring point. Bridge 6 (190m away) had an excavator loading moxies, with reversing sounds noted, as well as the pile breaking of the concrete driven piles. | |
| Response to complaint | Bulk Earthworks | 26C | 28/05/2014 | 11:35 | *44* | 56 | 75 | | No | 41.1 | Compliant | The main construction noise which was heard in the monitoring period was the movement of workers and their materials in the culvert 310 work area. Steel fixing activities were occuring. Two scrapers were also heard in the distance which were cutting in cut 25, to the north of the monitoring point. A roller was also heard which, with the combination of the steel fixing activities caused the higher construction noise readings for the fifteen minute period. Pacific Highway traffic was heard throughout, as well as bird noise. | |

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spot check of works generating high noise impact | Bridgeworks (D-Driven Piles) | 29A | 29/05/2014 | 11:20 | *52* | 51 | 75 | | No | 51.5 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Bridge at Barranganyatti Hut Road was being bored and excavated material placed next to the rig. A small excavator was also working beside the rig moving the bored material and lifting reinforced cages ready for installation. The maximum reading was gained due to the rig boring, with a combination of passing Pacific Highway traffic. Actual maximum for the rig without substantial highway noise was 86dB(A). | |
| Response to complaint | Bulk Earthworks | 26C | 29/05/2014 | 16:05 | *44* | 56 | 75 | | No | 38.3 | Compliant | Construction noise consisted of culvert works ranging from 47 to 50 dBA. The generator wa operating for the entire sampling period at between 47 to 49dBA. Background recorded ranged from 48 to 54 dBA.<br><br>Construction works were 80 metres in front of the sampling point and was used in the model to predict the LAeq at the receiver, which was directly behind the sampling point at 310 metres away. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 22B | 30/05/2014 | 15:05 | *41* | 53 | 75 | | No | 55.8 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Construction works occuring in this area included a scraper fleet of four which were hauling past the monitoring point. Reversing sounds and an excavator was also heard stabilising a soil stockpile approximately 100m away from the monitoring position. A dozer also tracked to the south during the reading. Also, light vehicles passed as well as a watercart and a couple of truck and dogs driving to the north. | |
| Response to complaint | Bulk Earthworks | 26C | 30/05/2014 | 10:10 | *44* | 56 | 75 | | No | 45.4 | Compliant. Controls as per NVMP adequate | Similar conditions to the day before with works recorded at slightly higher levels due to saw cutting of formwork, which peaked at a recording of 62dBA | |
| Periodic (monthly) monitoring | Bulk Earthworks | 19A | 23/06/2014 | 12:15 | *48* | 52 | 75 | | Yes | 43.6 | Compliant | Construction works occurring included a grader and water-cart working up and down on the access road. An excavator was heard to the south near culvert 102 at the northern end of fill 11. A dozer was heard working approximately 1km to the north, as well as the sound of distance haulage activities over 1km away. As well as these activities, light vehicles and a fuel truck passed by the monitoring point a few times. It should be noted that the receiver's dog was constantly barking for a period of four minutes into the noise reading event. The highest readings from construction works was 48 dB(A) and the highest readings from non-construction activities such as dog barking and birds reached up to 63 dB(A). | |
| Periodic (monthly) monitoring | Bulk Earthworks | 20D | 16/06/2014 | 14:00 | *41* | 59 | 75 | | Yes | 51.1 | Compliant. Controls as per NVMP adequate | Construction works heard included the haulage of material by moxies. A backhoe passed by the monitoring point once. The sound of moxies dropping off their material was heard by the drop of the metal trays. There was significant background noise throughout the reading which included birds, dogs and ducks at and around the receivers property which created the highest readings. The highest construction noise reading was 57 dB(A) where the background noise without construction noise present reached up to 71 dB(A). | |
| Periodic (monthly) monitoring | Bulk Earthworks | 21C | 23/06/2014 | 16:05 | *41* | 60 | 75 | | Yes | 42.7 | Compliant. Controls as per NVMP adequate | The main construction noise heard was the haulage of material by a moxie fleet. Reversing sounds were heard, as well as hitting sounds which would have been the moxies tipping their loads and the steel trays hitting. A dozer was also heard to the north where material was being pushed up for an excavator to load this material into the moxies. Birds were heard throughout the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 22B | 12/06/2014 | 10:40 | *41* | 53 | 75 | | No | 51.2 | Compliant. Controls as per NVMP adequate | A backhoe was heard approximately 120m from the sampling location. The backhoe was placing material over the geogrid material on the fill. A roller and grader just north of the culvert (approximately 85m away from sampling location) were working next to each-other. As well as this constant construction activity, a few truck and dogs and a light vehicle travelled past. | |
| Out of Hours Works Assessment | OoHW - Bridge 12 Piling (June 2014) | 22B | 28/06/2014 | 7:45 | *41* | 36 | 36 | | No | 37.5 | Background noise was primary contributor to noise. See comments. | Noise reading was taken to ensure compliance with the out of hours works permit which was approved for bridge works. Construction related noises heard included the crane moving, light vehicles passing by getting ready to start up machinery in cut 15. Towards the end of the reading, some machinery was heard idling as workers were completing pre-start safety checks on their machinery. Two truck and dogs passed by the monitoring location. Birds were also heard throughout the reading. Works were below the background noise level for this receiver. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 23/06/2014 | 15:30 | *41* | *44* | 75 | | No | 38.5 | Compliant | The main construction activity heard was the haulage of material by a moxie fleet. An excavator was working approximately 200m away from the sample location which was loading material into a moxie. The reversing squarkers were heard in this area. Passing vehicles included a water-cart, light vehicles and a crane. The loudest readings were captured when vehcles had to accelerate up the high fill zone near bridge six. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 25C | 12/06/2014 | 11:30 | *44* | *51* | 75 | | Yes | 40.1 | Compliant | Construction works heard included the haulage of material by moxies and the occassional truck and dog. Bridge formwork preparation was also being undertaken at Cooks Lane which included the hitting of hammers on wooden slats. A machine was heard tracking in the rest area which was a small excavator. Reversing sounds were also heard. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26A | 20/06/2014 | 10:30 | *44* | *52* | 75 | | Yes | 44.3 | Compliant. Controls as per NVMP adequate | Scrapers, dozers and an excavator was working in cut 24 and 25 which is behind the resident. Scrapers and dozers were heard, the excavator could not be distinguished within this noise. Construction noise ranged between 43 and 48 dB(A) where non-construction noise was heard between 47 and 50 dB(A). The Pacific Highway noise was heard throughout and the residents birds, rooster and dog was heard during the noise reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 27A | 20/06/2014 | 11:35 | *44* | *54* | 75 | | No | 35.7 | Compliant | Two scrapers were working on the mainline haulage back and forth through cut 25. Works were occurring on the access road which included the tipping of material on the access road and a grader spreading the material. The truck and dog was heard but the grader was not heard as it was working approximately 500m to the north. Reversing sounds were heard, along with the Pacific Highway traffic and bird noise. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 28C | 24/06/2014 | 9:15 | *51* | *60* | 75 | | No | 48.8 | Compliant | Two scrapers were working on the mainline in cut 25. A padfoot compactor was heard rolling back and forth approximately 20m from the sample location. A backhoe and light vehicles passed by a couple of times. Highway noise was heard throughout, as well as a nearby residents dozer which was operating on the opposite side of the alignment clearing their property. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 29A | 27/06/2014 | 14:20 | *52* | *55* | 75 | | No | 47.6 | Compliant | A crane was working on Barraganyati Hut Road unloading and moving metal reinforced poles on the bridge platform area. Past the background noise of the Pacific Higway, on Thurgood Lane, a single excavator was working. Reversing sounds from both machines were heard. Also on the Thurgood side of bridge 14 were the structures team working on installing the shutters for the bridge. | |

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 30E | 23/06/2014 | 14:00 | *49* | *56* | 75 | | Yes | 43.7 | Compliant | Construction works were occurring approximately 350m away. Two excavators were boxing out material next to Stuarts Point Road which were loading into moxies. These moxies would need traffic control over the local road to head south towards Borirgalla Creek. A hammer was heard, which was identified as the nextdoor resident working in their yard. A jackhammer was also heard which was the tester checking the fill material. Local traffic was heard as well as the highway traffic and birds. To ensure the reading captured construction noise, the noise meter was repeatedly paused and resumed when local traffic passed by the monitoring point. The reading began at 1400 and was completed at 1429. The highest construction related readings came to a maximum of 53 dB(A) with the dropping of material into the moxie. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 31A | 20/06/2014 | 12:35 | *50* | *60* | 75 | | Yes | 53.3 | Compliant. Controls as per NVMP adequate | An excavator, padfoot and and dozer were working in fill 33 which is approximately 580m away from the receiver. A fleet of moxies were hauling past on Brushbox Road which were being loaded by the excavator. In the second half of the reading, another excavator was identified as a noise source which was working to the south approximately 170m away. Highway traffic was heard throughout, with the loudest reading coming through when a large truck was air braking past on the highway. | |
| Spot check of noise intensive plant | N/A | N/A | 17/06/2014 | 8:30 | *#N/A* | N/A | N/A | | N/A | N/A | N/A | Spot check taken at Main compound hard stand area adjacent to the workshop. Spot check was taken from a loader pushing and stacking aggregate onto a material stockpile. Distance of the machine from the sampling location ranged from a distance of 20-40m away. A few light vehicles passed by and haulage on the alignment was heard in the distance. Reversing sounds were heard and dropping the aggregate from the loader to the stockpile proved to project the highest readings. Predicted LAeq used is the evening RBL plus 5dB(A) for the southern batch plant location. | |
| Spot check of noise intensive plant | N/A | N/A | 17/06/2014 | 8:50 | *#N/A* | N/A | N/A | | N/A | N/A | N/A | Spot check taken at Main compound hard stand area adjacent to the workshop. Spot check was taken as one truck and dog arrived and departed, tipped, reversed, and the driver checked the truck to dislodge loose rocks and to winch up the top cover. Predicted LAeq used is the evening RBL plus 5dB(A) for the southern batch plant location. | |
| Spot check of noise intensive plant | N/A | N/A | 17/06/2014 | 9:00 | *#N/A* | N/A | N/A | | N/A | N/A | N/A | Spot check taken at Main compound hard stand area adjacent to the workshop. Reading was taken to predict the noise that may arise from the southern batch plant. Both operations of a truck and dog dropping off aggregate, as well as the loader working the material into a stockile was captured in this reading. Reversing sounds were heard, as well as continuous moxie haulage on the main alignment. Predicted LAeq used is the evening RBL plus 5dB(A) for the southern batch plant location. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 19A | 15/07/2014 | 15:15 | *48* | *52* | 75 | | No | 44.9 | Compliant | Works heard in this area incuded the installation of drainage pipes by an excavator at the end of Raymonds Lane (260m away from sample location. Further to the south, another excavator was also installing pipework which was approximately 440m away. Some light vehicles passed by on the alignment. In the distance, to the north, haulage works were heard. Construction works ranged between 39 and 49 dB(A). Non construction noise was heard up to a value of 70 dB(A), these noises included birds chirping in a nearby tree, the receivers dog barking, the receivers horses making noise, as well as background pacific highway noise. The receivers dog was barking for approximately 10 minutes at the start of the sample and the birds were making noise throughout the entire 15 minute sample. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 20C | 12/07/2014 | 15:15 | *41* | *55* | 55 | | No | 47.1 | Compliant. Controls as per NVMP adequate | Construction activities inculded a excavator loading moxies for haulage. Construction noise was audiable between 40-60dB with the loudest source of noise coming from moxies accellerating after being loaded. Other noise was present during sample and included birds. Other noise was audiable between 42-52dB. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 20D | 15/07/2014 | 15:55 | *41* | *59* | 75 | | No | 38.4 | Compliant | Sample was taken on receivers fence close to the Kemps Access gate which is manned by traffic control to allow local residents thoroughfare over Kemps Access. Radio talk was heard throughout the reading due to the traffic controller completing his duties. Moxies were hauling from north to south and back again throughout the reading. A grader passed by once and an excavator was working 360m to the north from the monitoring point. To the south, a tracking machine working. Construction works ranged between 44 and 65 dB(A). | As the use of the horn was considered one of the louder noise sources it was communicated with the leading hand and site superintendent that a more appropriate form of communication would be via UHF radio to eliminate the source of noise. |
| Periodic (monthly) monitoring | Bulk Earthworks | 21C | 30/07/2014 | 15:25 | *41* | *60* | 75 | | Yes | 37.9 | Compliant | Construction works heard in this location included the haualge of trucks, light vehicles, a few (3) excavators working to the south at the end of Mill Lane which were placing drainage pipe in the ground. A machine was also heard tracking back and forth to the south in the same location, this was identified as a roller which was compacting fill behind the bridge 1 abutment on the western side of the alignment. Non construction noise was also heard which included bird noise and the receiver making noise in their home. | No additional mitigation measures implemented. |
| Periodic (monthly) monitoring | Bulk Earthworks | 22B | 30/07/2014 | 12:25 | *41* | *53* | 75 | | Yes | 42.1 | Compliant. Controls as per NVMP adequate | Construction works in this area include the pushing of a dozer to the south in cut 15. Three bogies hauled past the monitoring location which created the highest noise readings. An excavator was heard occasionally which was working to the north in fill 19, placing topsoil on batters. Also, a few light vehicles passed by the monitoring location. Birds were heard througout the reading due to the location of the sampling under a tree. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 28/07/2014 | 10:40 | *41* | *44* | 75 | | No | 34.4 | Compliant | Sample was taken at boundary fence, the closest works were moxies hauling past in both directions which were approximately 30m away from the sample location. Two excavators were working approximately 50m away to the north from the sample location. Another excavator was loading a bogie truck which was approximately 120m from the sample location towards the south at bridge 6. A few 'hits' were heard which was due to workers maintaining the crusher. A fuel cart and light vehicles also passed by the sample location. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 25C | 9/07/2014 | 8:10 | *44* | *51* | 75 | | Yes | 55.7 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Construction activities occurring at time of sample inlcuded a scraper fleet, moxie fleet and a padfoot dozer. The moxies were hauling past at approximately 540m away from the receiver. The padfoot was working the farthest away at approximately 590m. Bird noise was heard throughout at a maximum level of 61 dB(A) which did not exceed construction noise. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 25C | 19/07/2014 | 11:10 | *44* | *51* | 75 | | Yes | 53.3 | Compliant. Exceeding predicted noise level. Review adequacy of controls | The main construction noise heard was the haulage of material by a moxie fleet. Also, a tracking dozer was also heard around the rest area. Construction noise ranged between 48 and 60 dB(A). Non-construction noise heard included birds and trees and leaves blowing in the high winds. Non-construction noise ranged between 58 and 63 dB(A). | Out of hours works were given the ok to proceed. |

## Frederickton to Eungai Noise Monitoring Summary Report

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 26A | 15/07/2014 | 8:40 | *44* | *52* | 75 | | Yes | 42.9 | Compliant | Main construction noise heard was the haulage of material by a moxie fleet. Two excavators were loading the moxies to the north in cut 23, but these were not heard. Some other haulage machine (not visualised, possibly a truck and dog) was identified as another construction noise source. Construction noise ranged between 40 and 50 dB(A). Non-construction noise was heard between 40 and 64 dB(A) which included the highway, birds chirping and whistling, as well as the receivers dog barking and their chickens creating noise. | Out of hours noise levels consistent with predicted impacts. |
| Spot check of noise intensive plant | N/A | 26C | 5/07/2014 | 11:20 | *44* | N/A | N/A | | No | 45.5 | Compliant. Controls as per NVMP adequate | Pre out of hours works monitoring spot check. Construction activities on Cut 23 included the use of an excavator to trim batters and an excavator to load moxies for the bulk haul.Construction noise was audiable between 40- 48dB. Other ources of noise included traffic on the highway. Other noise sources were audiable between 44-48dB. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 5/07/2014 | 13:20 | *44* | *39* | 39 | | No | 45.3 | Non-construction related noise. See comments | No construction activities were being undertaken. Monitoring undertaken to establishment of background noise levels. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 5/07/2014 | 13:40 | *44* | *39* | 39 | | No | 45.2 | Background noise was primary contributor to noise. See comments. | Out of hours works monitoring. Construction activities on Cut 23 included the tracking of an excavator and an excavator used to load moxies for the bulk haul. Construction noise was audiable between 38- 46dB with the loudest source of noise coming from tracking alarm and horn. Other ources of noise included traffic on the highway. Other noise sources were audiable between 40-50dB. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 12/07/2014 | 13:10 | *44* | *39* | 39 | | No | 44.0 | Non-construction related noise. See comments | No construction activities were being undertaken. Monitoring undertaken to establishment of background noise levels. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 12/07/2014 | 14:10 | *44* | *39* | 39 | | No | 44.5 | Works modified. | Out of hours works monitoring. Construction activities on Cut 23 excavators used to load moxies for the bulk haul. Construction noise was audiable between 36dB with the loudest source of noise coming excavator bucket tipping. Other ources of noise included traffic on the highway and birds. Other noise sources were audiable between 36-58dB. | Works were redirected from area. |
| Spot check of noise intensive plant | N/A | 26C | 19/07/2014 | 12:25 | *44* | N/A | N/A | | Yes | 55.1 | Compliant. Controls as per NVMP adequate | Spot check was taken on a Saturday Afternoon before 1pm. This was to gauge the impacts of the high winds and carrying construction noise to the sensitive receiver. Construction works heard included a few excavators working on the top of cut 23 which were loading a fleet of moxies who would arrive and depart to the south (did not pass the monitoring point). A horn was heard a few times and a dozer and grader was heard working on the cut, as well as the two machines tracking backwards with their reversing sounds activated. | Minor exceedence. No additional mitigation measures implemented. |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 19/07/2014 | 13:05 | *44* | *39* | 39 | | Yes | 53.6 | Non-construction related noise. See comments | This assessment was taken at lunch time on a Saturday afternoon to gauge a backgound reading for the area. The wind conditions had an affect on the background reading due to the high winds and the movement of the trees surrounding. The wind direction was also coming from the east which carried the highway noise over to the monitoring location. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 19/07/2014 | 13:45 | *44* | *39* | 39 | | Yes | 53.4 | Non-construction related noise. See comments | This reading was taken to ensure that Satruday afternoon works were within the background plus 5 dB(A) criteria. Construction works were occuring approximately 1200m away to the south at the cut fill line of cut 23 and fill 26. There was one excavator working on the western side batter on the cut fill line loading moxies who were then hauling to the south- further away from the monitoring location and sensitive receiver. Two additional excavators were working in cut 22 on both sides of the alignment loading moxies. There were approximately 16 moxies in the fleet for the works. There were two fifteen second occassions where construction works may have been audible. One sounded like a truck or moxie, but was unable to confirm whether it was construction activity or not. Also, another 15 second sample heard a second of an excavator at 53 dB(A), along with highway traffic, the wind and the trees blowing. Background noise ranged between 49 and 61 d(A). The thirty seconds of possible construction works were heard between 51 and 52 dB(A). | |
| Spot check of noise intensive plant | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 19/07/2014 | 14:30 | *44* | N/A | N/A | | Yes | 51.3 | Compliant. Controls as per NVMP adequate | Spot check taken to ensure construction works in fill 26 were inaudible at the receiver. No construction works were heard. All that was heard were birds, the pacific highway traffic and trees blowing in the wind. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 19/07/2014 | 14:50 | *44* | *39* | 39 | | Yes | 51.5 | Non-construction related noise. See comments | Out of hours work assessment taken to ensure construction works were not heard above the background plus 5 dB(A) criteria. No construction works were heard in this location and background noises dominated with highway noise, birds and trees blowing in the wind. The range of background noise was heard between 48 and 58 dB(A). | |
| Periodic (monthly) monitoring | Bulk Earthworks | 27A | 15/07/2014 | 11:00 | *44* | *54* | 75 | | Yes | 41.6 | Compliant | Two scrapers were placing material in cut 25, these were heard working back and forth in the cut. A backhoe moved up to the top of the access road where he was cleaning up the batters getting ready for the spray sealing of the road. A water cart wsa als heard travelling and spraying water over the access road, passing the backhoe. Reversing sounds from the backhoe were heard due to the machine being on top of the cut, where the receiver is at the bottom of a valley. Construction noise ranged between 38 and 46 dB(A). Background noise reached up to 63 dB(A) due to birds chirping and the occassional dog bark. The neighbours sprinkler system was running throughout which was noted but not exceeding the construction noise readings. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 28C | 15/07/2014 | 9:20 | *51* | *60* | 75 | | Yes | 55.2 | Compliant. Controls as per NVMP adequate | Construction activity in cut 25 included the haualge of material by two scrapers, one grader trimming up material back and forth, with the sound of the reversing beeper also noted. A couple of light vehicles and medium trucks passed by the monitoring location. A padfoot dozer was also working to the north, near basin 35300E adjacent to the Mango Farm. Birds were heard throughout the morning sample period. Fencing works were also occurring on the other side of the alignment where pole installation was heard. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 29A | 9/07/2014 | 11:15 | *52* | *55* | 75 | | No | 50.2 | Compliant | Construction works heard at this location was a dozer pushing material back and forth for the Barraganyatti Hut Road design. Material was being pushed away (towards the Pacific Highway) and reversing back towards the receiver and sampling location. Highway noise was heard throughout. The background readings heard ranged between 46-51 dB(A) with no construction noise. Construction noise ranged from 52-67 dB(A). | |

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 30E | 28/07/2014 | 12:00 | *49* | *56* | 75 | | Yes | 47.0 | Compliant | Sample was started at 12:00 and concluded at 12:30 due to pausing the noise monitor to remove passing traffic to get the best representation of construction noise. Construction noise ranged between 44 and 53 dB(A). The highest non-construction noise heard was at 60 dB(A) which was due to a Kookaburra. Construction noise included truck and dog deliveries of upper zone material to the south for Macleay Valley Way. An excavator was boxing out material just north of Stuarts Point Road which is to link in works for the roundabout. Moxies were heard hauling material down Access Road C from Brushbox towards Stuarts Point Road. Reversing sounds from the excavator and moxies were heard as well. Concrete trucks and light vehicles were also heard passing over Stuarts Point Road, which was under traffic control. Highway traffic, traffic control and radio talk was heard throughout the reading. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 31A | 9/07/2014 | 12:10 | *50* | *60* | 75 | | Yes | 46.0 | Compliant | Construction works were lower than background noise for this reading. Excavators, rollers, padfoot and graders were seen from the highway but only an excavator and roller, crane passing and reversing was heard at the receiver. Construction noise ranged from 43-49 dB(A) and background with no construction noise ranged from 44-61 dB(A). | |
| Spot check of noise intensive plant | N/A | N/A | 1/07/2014 | 15:25 | *#N/A* | N/A | N/A | | N/A | N/A | N/A | Monitored guard rail installation works on Access Road B to ascertain a more accurate LAeq for the works when undertaken in future. Two receivers on Access Road B were advised of the works and although modelled to exceed predicted levels they had agreed to the works being undertaken without respite. | |
| Response to complaint | Bulk Earthworks | 30D | 4/07/2014 | 12:45 | *49* | *50* | 75 | | No | 62.6 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Recorded LAeq was predominately background consisting of local traffic. Construction noise couldn't be isolated from background at the monitoring location, however noise recorded from the direction of construction activities (which may have been highway traffic and not construction) was recorded between 38 to 41dBA. Therefore construction activites were deemed within RBL + 10dBA. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 19A | 11/08/2014 | 11:50 | *48* | *52* | 75 | | Yes | 44.3 | Compliant | Construction activities included trimming with an elevator and grader, watercart watering haul raods, operation of roller. Construction noise was audiable between 38-44dB. Other sources of noise included traffic from the hyway, birds and dogs. Other sources of noise were audible between 38-60dB. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 19A | 13/08/2014 | 9:10 | *48* | *52* | 75 | 34-60 | Yes | 42.1 | Compliant | Construction noise included the placement of select material with truck and dogs, the use of a roller and grader to trim and compact the select. Construction noise was audiable between 36-52dB. Other sources of noise included triff on the pacific highway and dogs audible between 34-60+dB. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 20D | 13/08/2014 | 8:10 | *41* | *59* | 75 | 46-60 | Yes | 47.6 | Compliant. Controls as per NVMP adequate | Construction works included excavator topsoiling batters and bridge works. Construction noise was audible between 44-56dB. Other noise inculded birds audible between 46-60dB. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 21C | 11/08/2014 | 11:05 | *41* | *60* | 75 | | Yes | 40.2 | Compliant | Construction activities inculded an excavator trenching for long drainage on Fill 13. Othe construction noise included a moxy water cart watering batters and haul road. Construction noise was audiable between 34-48dB. Other noise included birds and wind audible bewteen 34-46dB. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 22B | 11/08/2014 | 14:30 | *41* | *53* | 75 | | No | 38.4 | Compliant | Construction activities included loading moxies with topsoil and onsite haulage. Construction noise was audiable between 48-70dB. Other sources of noise included wind and birds audible between 48-52dB. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 23A | 11/08/2014 | 12:35 | *41* | *44* | 75 | | No | 41.4 | Compliant. Controls as per NVMP adequate | Construction activities included topsoiling batters, operation of crusher and moxy haul. Construction noise was audible between 45-84dB. Other sources of noise included birds, wind and cows audible between 52-56dB. | |
| Spot check of noise intensive plant | Saw Cutting Night Works (Lamax+2dB) | BLANK | 5/08/2014 | 18:35 | *0* | N/A | N/A | 77.0 | N/A | N/A | N/A | Spot check of the saw cutting activities near source (20m). During sample period the saw cutter idling was around 70-77 dB(A), during cutting this peaked up around 79dB(A). Trucks on highway were also around 75-77dB(A), however were not prominent over the saw cutter engine. | |

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 25C | 20/08/2014 | 15:45 | *44* | *51* | 75 | 50-61 | Yes | 51.5 | Compliant. Exceeding predicted noise level. Review adequacy of controls | Construction works included a scraper fleet working in the rest area. Scrapers finished in the last five minutes of the sample, and when this occurred, the idling sounds and reversing sounds were heard. When scraper noise was lower, the excavator working at the Bridge 13 abutment (700m away) was heard. Haulage works by moxies were also heard during the sample which were working to the north and hauling down to the rest area. Non-construction noise heard included birds, dogs and the trees blowing in the wind. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 26/07/2014 | 13:26 | *44* | *39* | 39 | 44.0 | No | 51.3 | Non-construction related noise. See comments | Background check while no construction occuring. Works were shut down due to rain shortly after background check. | |
| Out of Hours Works Assessment | OoHW - Saw Cutting Paving Trial (Aug 2014) | 29F | 5/08/2014 | 19:30 | *46* | *37* | 37 | 40-52 | No | 40.5 | Non-construction related noise. See comments | Predominant noise was the traffic noise from the Pacific Highway. The saw cutting was not confirmed to be audible as the idling saw cutter could not be distinguished from the highway traffic. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 26A | 21/08/2014 | 11:10 | *44* | *52* | 75 | 52-72 | Yes | 47.7 | Compliant. Controls as per NVMP adequate | Construction works heard in this area was a fleet of scrapers working from Cooks Lane up to cut 23 which was directly behind this resident. A dozer was also heard ripping material up for the scrapers to excavate. The dozers reversing squarker was also heard. Non-construction noise included bird noise which was heard throughout. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 9/08/2014 | 13:15 | *44* | *39* | 39 | | No | 51.6 | Non-construction related noise. See comments | No construction activities were being undertaken. Monitoring undertaken to establishment of background noise levels. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 9/08/2014 | 14:00 | *44* | *39* | 39 | | No | 56.3 | Non-construction related noise. See comments | Out of hours works monitoring. Construction activities on Cut 23 excavators used to load moxies for the bulk haul. Construction noise was not audiable. Other ources of noise included traffic on the highway and birds. Other noise sources were audible between 42-60dB. | |
| Out of Hours Works Assessment | OoHW - Saturday Afternoon Z1,2&3 (June 2014) | 26C | 2/08/2014 | 13:50 | *44* | *39* | 39 | 52.0 | No | 58.4 | Non-construction related noise. See comments | Non-construction noise levels exceeded the specified noise level. This was contributed by noise from the existing pacific highway. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 27A | 20/08/2014 | 16:30 | *44* | *54* | 75 | 41-45 | No | 42.6 | Compliant | Construction works in this area included a scraper fleet working in cut 25 to fill 27 (245m away from the sample location). An excavator was heard working at Barraganyatti Creek to the north in fill 29 which is approximately 485m away. A dozer was also working in cut 25 which was placing and track rolling topsoil on the western batter which was approximately 240m away from the sample location. The current Pacific Highway traffic was heard between 41 and 46 dB(A). The highway was heard when the scrapers were in the fill area. Other non-construction noise that was heard includes dog barking, frog and bird sounds. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 28C | 22/08/2014 | 12:10 | *51* | *60* | 75 | 46-51 | Yes | 55.3 | Compliant. Controls as per NVMP adequate | Construction works in this area was scraper works. The scraper fleet was moving back and forth of the monitoring point frm cut 23 to fill 30. Site vehicles were also heard passing by which included a light vehicle and a light truck passing by fill 29. The highway was heard throughout as well as bird activity. A horn was heard once. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 29A | 21/08/2014 | 8:50 | *52* | *55* | 75 | 44-52 | No | 41.2 | Compliant | Construction works occurring in this area included steel fixing and steel cutting at Bridge 14 on Barraganyatti Hut Road (approximaely 165m from monitoring location). Vibrators were also heard on the other side of the Pacific Highway on the eastern abutment on the fill. The highway was heard throughout as well as bird noise. A grader arrived at the location of the steel fixing activities where it was heard pushing some material and idling. | |

**Frederickton to Eungai Noise Monitoring Summary Report**

| Monitoring Type | Reference Activity for Predicted $L_{Aeq\ 15min}$ Noise Levels | Site | Date (dd/mm/yyyy) | Time (24 Hour) | ICNG Noise Management Level | Predicted Noise Level (NVMP or Acoustic Assessment) | Specified Noise Level | Non-construction (background) LAbB | Sampled at sensitive receiver? | Sound Level at receiver (dB(A) = 10log(r12/r22)) | Compliance to Specified Noise Level | Comments | Actions carried out in the event of an exceedence. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Periodic (monthly) monitoring | Bulk Earthworks | 30E | 21/08/2014 | 11:45 | *49* | *56* | 75 | | Yes | 48.6 | Compliant | Monitoring event begun at 11:45 and concluded at 12:25. This was due to local traffic passing by and the use of the pause function to only capture construction noise. Construction works occurring here included two excavators working on the tie-in area next to Stuarts Point Road by removing material. A dozer was working next to these excavators pushing material next to the topsoil stockpile. Trucks were entering and leaving the site via the Highway and Stuarts Point Road, horns were also heard from the construction equipment working here. Traffic control was constant in this area to allow for construction vehicles access and the safe movement of local traffic. | |
| Periodic (monthly) monitoring | Bulk Earthworks | 31A | 21/08/2014 | 12:35 | *50* | *60* | 75 | 48-66 | Yes | 50.8 | Compliant. Controls as per NVMP adequate | Construction activity included the loading of moxies and bogies by an excavator at bridge 17 and also about 30m from the Brushbox turn off to the south. In total there were two excavators working and the moxies and bogies had to pass by on Brushbox Road to move their material. Non-construction noise was heard between 48 and 66 dB(A) which included the Pacific Highway traffic and bird noise. | |

**Unnamed Waterway north of Frederickton (Fill 11)**

| Location | Type of Sampling | Date | Temp (C) | E.C (uscm) | D.O.(%sat) | pH | Turbidity (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 1 U | Dry | 6/03/2014 | 25.81 | 1166 | 41.4 | 5.36 | 13.3 | Both up and downstream samples were taken amongst the recently sprung Tall Knotweed grass species. Water levels were no deeper than 10cm. | Monitoring of geotechnical instruments |
| SW 1 D | Dry | 6/03/2014 | 25.73 | 1312 | 14 | 5.32 | 22.5 | | |
| SW 1 U | Wet | 3/03/2014 | 25.52 | 1168 | 38.5 | 5.14 | 7.3 | DO is very similar to dry sampling event and may be attributable to new growth of Tall Knotweed grass species. Turbidity has slightly increased but visual assessment does not indicate any construction impacts. | Monitoring of geotechnical instruments |
| SW 1 D | Wet | 3/03/2014 | 24.89 | 1315 | 17.2 | 5.18 | 11.6 | | |
| SW 1 U | Wet | 21/03/2014 | - | - | - | - | - | No water | Monitoring of geotechnical instruments |
| SW 1 D | Wet | 21/03/2014 | - | - | - | - | - | | |
| SW 1 U | Dry | 1/04/2014 | 24.55 | 1047 | 28.7 | 5.18 | 12.9 | High vegetation at upstream and downstream point, water levels were no deeper than 15cm. | Solid and compacted fill surrounding waterway, culvert is incomplete, awaiting inlet and outlet treatments. At time of sampling, a dozer was pushing fill 100m away and moxies were hauling past. |
| SW 1 D | Dry | 1/04/2014 | 24.96 | 791 | 16.5 | 5.28 | 10.4 | | |
| SW 1 U | Wet | 29/04/2014 | 19.35 | 1012 | 8.2 | 6.19 | 57.4 | Very high vegetation on both the upstream and downstream sides of the project. | No works were scheduled for the day due to the shutdown period after the ANZAC break and recent rain. |
| SW 1 D | Wet | 29/04/2014 | 19.87 | 1526 | 44.7 | 4.18 | 18.9 | | |
| SW 1 U | Dry | 27/05/2014 | 17.04 | 994 | 4.3 | 6.64 | 58.8 | Two samples were taken for both the upstream and downstream side. This sample was taken approximately 115m away from the Project alignment. High vegetation and natural murkiness on both | Placement of fill and haulage. The scour rock on the inlet to the culvert is in place with erosion and sediment controls in place and maintained. |

| Location | Type of Sampling | Date | Temp (C) | E.C (uscm) | D.O.(%sat) | pH | Turbidity (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | the upstream and downstream sampling location. The upstream side was approximately 30cm deep. | |
| SW 1 D | Dry | 27/05/2014 | 20.52 | 804 | 22.8 | 6.24 | 39.9 | This sample was taken approximately 290m away from the Project alignment. Water was approximately 10cm deep. Thick Tall Knotweed species was present. This sample was taken amongst a paperbark swamp forest where the water in this waterway originates from. Vegetation was not as abundant as the other three sample locations. | |
| SW 1 U | Dry | 27/05/2014 | 18.69 | 1867 | 14.4 | 4.21 | 14.1 | This sample was taken approximately 140m away from the Project alignment. Water was approximately 10cm deep. Thick Tall Knotweed species was present. | Placement of fill and haulage. The rock access track was recently removed on the downstream side and water sits on the natural ground surface. The water in this waterway does not freely flow from upstream and downstream due to a bund on the downstream side to allow for the finishing works. |
| SW 1 D | Dry | 27/05/2014 | 22.23 | 709 | 120.1 | 6.23 | 21.3 | This sample was taken approximately 475m away from the Project alignment. Water was approximately 15cm deep. This sample was taken in a dam where the water in this catchment finishes at this point in time. There are lillies present in this water-body. | |
| SW 1 U | Wet | 30/05/2014 | - | - | - | - | - | Wet surface water sampling was not | |

| Location | Type of Sampling | Date | Temp (C) | E.C (uscm) | D.O.(%sat) | pH | Turbidity (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 1 D | Wet | 30/05/2014 | - | - | - | - | - | triggered in this zone (<10mm received in a 24 hour period) | |
| SW 1 U | Dry | 23/06/2014 | 12.73 | 1737 | 29.2 | 6.4 | 124 | Murky brown water identified, Tall Knotweed species dying off. Evidence of cattle movement in creek bed, evidence of on-site access to creek line as Tall Knotweed is pushed over and dying. Water level no deeper than 5cm | Fauna fence construction, roller compacting fill, placement of topsoil on batters |
| SW 1 D | Dry | 23/06/2014 | 12.3 | 3014 | 24 | 6.32 | 65.4 | | |
| SW 1 U | Wet | 30/06/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone (<10mm received in a 24 hour period) | |
| SW 1 D | Wet | 30/06/2014 | - | - | - | - | - | | |
| SW 1 U | Dry | 15/07/2014 | - | - | - | - | - | No water. Tall Knotweed drying out, evidence of cattle movement | Installation of drainage pipes in surrounding area. Bund downstream of drainage pipe removed to allow for water flow. |
| SW 1 D | Dry | 15/07/2014 | - | - | - | - | - | | |
| SW 1 U | Dry | 9/08/2014 | - | - | - | - | - | Creek is dry, no connection between upstream and downstream. Sediment and erosion controls in place | |
| SW 1 D | Dry | 9/08/2014 | - | - | - | - | - | | |
| SW 1 U | Wet | 18/08/2014 | 16.28 | 1.4 | 34.9 | 5.71 | 15.7 | Very shallow water, connected to downstream water | |
| SW 1 D | Wet | 18/08/2014 | 16.97 | 2.1 | 103.5 | 5.09 | 12.9 | | |
| SW 1 U | Wet | 30/08/2014 | 15.95 | 334 | 19.7 | 5.97 | 41.6 | Water ponded up and down stream, water moving slowly, no evidence of sediment going off site. | Basin treatment |
| SW 1 D | Wet | 30/08/2014 | 18.01 | 385 | 46.9 | 5.91 | 37.4 | | |

**Collombatti Creek**

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 2 U | Dry | 12/03/2014 | - | - | - | - | - | One pool of water. No sample was taken as there was no connection from upstream to downstream. | Haulage of rock |
| SW 2 D | Dry | 12/03/2014 | - | - | - | - | - | | |
| SW 2 U | Wet | 4/03/2014 | - | - | - | - | - | One pool downstream. No connection upstream to downstream | Haulage of rock |
| SW 2 D | Wet | 4/03/2014 | - | - | - | - | - | | |
| SW 2 U | Wet | 21/03/2014 | - | - | - | - | - | Pool of water downstream which does not connect to upstream as there is no water | Haulage of rock |
| SW 2 D | Wet | 21/03/2014 | - | - | - | - | - | | |
| SW 2 U | Dry | 1/04/2014 | | | | | | Pool of water downstream. No representative sample taken | |
| SW 2 D | Dry | 1/04/2014 | | | | | | | |
| SW 2 U | Wet | 29/04/2014 | - | - | - | - | - | Pool of water downstream. No representative sample taken | No works on this day |
| SW 2 D | Wet | 29/04/2014 | - | - | - | - | - | | |
| SW 2 U | Dry | 7/05/2014 | - | - | - | - | - | Pool of water downstream, no connection | Haulage, fill placement and bridge piling. |
| SW 2 D | Dry | 7/05/2014 | - | - | - | - | - | | |
| SW 2 U | Wet | 30/05/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone (<10mm received in a 24 hour period) | |
| SW 2 D | Wet | 30/05/2014 | - | - | - | - | - | | |
| SW 2 U | Dry | 2/06/2014 | - | - | - | - | - | No water | |
| SW 2 D | Dry | 2/06/2014 | - | - | - | - | - | | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 2 U | Wet | 30/06/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone (<10mm received in a 24 hour period) | |
| SW 2 D | Wet | 30/06/2014 | - | - | - | - | - | | |
| SW 2 U | Dry | 1/07/2014 | - | - | - | - | - | No water | Pile breaking, placement of fill |
| SW 2 D | Dry | 1/07/2014 | - | - | - | - | - | | |
| SW 2 U | Dry | 9/08/2014 | - | - | - | - | - | Creek is dry, no connection between upstream and downstream | |
| SW 2 D | Dry | 9/08/2014 | - | - | - | - | - | | |
| SW 2 U | Dry | 18/08/2014 | - | - | - | - | - | Creek is dry | |
| SW 2 D | Dry | 18/08/2014 | - | - | - | - | - | | |
| SW 2 U | Wet | 30/08/2014 | 18.07 | 240 | 64.5 | 5.57 | 30 | Medium flow rate, creek connected via pipes under access track, no evidence of sediment moving off site. | Basin treatment |
| SW 2 D | Wet | 30/08/2014 | 16.22 | 193 | 56.4 | 5.9 | 37.5 | | |

**Seven Oaks Drain**

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 3 U | Dry | 12/03/2014 | - | - | - | - | - | No connection upstream to downstream | Haulage of rock |
| SW 3 D | Dry | 12/03/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 4/03/2014 | - | - | - | - | - | A few shallow pools identified upstream One shallow pool of water identified downstream. No sample was taken as there was no connection from upstream to downstream. | Haulage of rock |
| SW 3 D | Wet | 4/03/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 21/03/2014 | - | - | - | - | - | No connection through site pipework | Haulage of rock |
| SW 3 D | Wet | 21/03/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 28/03/2014 | - | - | - | - | - | No access to this area during and following rain event on the 28/03/2014. | No construction works due to wet weather |
| SW 3 D | Wet | 28/03/2014 | - | - | - | - | - | | |
| SW 3 U | Dry | 3/04/2014 | - | - | - | - | - | Pool of water upstream and downstream does not connect through the pipe or construction work | Clean rock is placed in the drain within the construction footprint. |
| SW 3 D | Dry | 3/04/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 29/04/2014 | - | - | - | - | - | Pool of water upstream, does not connect to site to downstream | No works on this day |
| SW 3 D | Wet | 29/04/2014 | - | - | - | - | - | | |
| SW 3 U | Dry | 7/05/2014 | - | - | - | - | - | No water Pool of water does not connect | Haulage, fill placement. |
| SW 3 D | Dry | 7/05/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 30/05/2014 | - | - | - | - | - | Wet surface water sampling was not | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 3 D | Wet | 30/05/2014 | - | - | - | - | - | triggered in this zone (<10mm received in a 24 hour period) | |
| SW 3 U | Dry | 2/06/2014 | - | - | - | - | - | No water | |
| SW 3 D | Dry | 2/06/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 30/06/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone (<10mm received in a 24 hour period) | |
| SW 3 D | Wet | 30/06/2014 | - | - | - | - | - | | |
| SW 3 U | Dry | 1/07/2014 | - | - | - | - | - | No water | Haulage |
| SW 3 D | Dry | 1/07/2014 | - | - | - | - | - | | |
| SW 3 U | Dry | 9/08/2014 | - | - | - | - | - | Creek is dry, no connection between upstream and downstream | |
| SW 3 D | Dry | 9/08/2014 | - | - | - | - | - | | |
| SW 3 U | Dry | 18/08/2014 | - | - | - | - | - | Some ponded water, no connection through construction site | |
| SW 3 D | Dry | 18/08/2014 | - | - | - | - | - | | |
| SW 3 U | Wet | 30/08/2014 | 15.92 | 194 | 54.6 | 5.88 | 38.2 | Fast moving, creek connected by water moving through pipe, no evidence of sediment going off site. | Basin treatment |
| SW 3 D | Wet | 30/08/2014 | 15.91 | 200 | 55.6 | 5.9 | 39.1 | | |

**Wizzenbucca Creek**

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 4 U | Dry | 6/03/2014 | - | - | - | - | - | No water | Haulage of materials such as timber and mulch. Recent works starting Culvert 203 |
| SW 4 D | Dry | 6/03/2014 | - | - | - | - | - | | |
| SW 4 U | Wet | 4/03/2014 | - | - | - | - | - | No water | Haulage of materials such as timber and mulch. Recent works starting Culvert 203 |
| SW 4 D | Wet | 4/03/2014 | - | - | - | - | - | | |
| SW 4 U | Wet | 21/03/2014 | - | - | - | - | - | No water | Haulage of materials such as timber and mulch. Recent works starting Culvert 203 |
| SW 4 D | Wet | 21/03/2014 | - | - | - | - | - | | |
| SW 4 U | Wet | 28/03/2014 | - | - | - | - | - | No access to this area during and following rain event on the 28/03/2014. | No construction works due to wet weather |
| SW 4 D | Wet | 28/03/2014 | - | - | - | - | - | | |
| SW 4 U | Dry | 1/04/2014 | - | - | - | - | - | No water | |
| SW 4 D | Dry | 1/04/2014 | - | - | - | - | - | | |
| SW 4 U | Wet | 29/04/2014 | - | - | - | - | - | No water | No works on this day |
| SW 4 D | Wet | 29/04/2014 | - | - | - | - | - | | |
| SW 4 U | Dry | 14/05/2014 | - | - | - | - | - | No water | Culvert works. |
| SW 4 D | Dry | 14/05/2014 | - | - | - | - | - | | |
| SW 4 U | Wet | 30/05/2014 | - | - | - | - | - | No water | Culvert works. |
| SW 4 D | Wet | 30/05/2014 | - | - | - | - | - | | |
| SW 4 U | Dry | 19/06/2014 | - | - | - | - | - | No water | |
| SW 4 D | Dry | 19/06/2014 | - | - | - | - | - | | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 4 U | Wet | 30/06/2014 | - | - | - | - | - | No water | |
| SW 4 D | Wet | 30/06/2014 | - | - | - | - | - | | Culvert works |
| SW 4 U | Dry | 3/07/2014 | - | - | - | - | - | No water | Culvert works |
| SW 4 D | Dry | 3/07/2014 | - | - | - | - | - | | |
| SW 4 U | Dry | 18/08/2014 | - | - | - | - | - | Creek is dry | |
| SW 4 D | Dry | 18/08/2014 | - | - | - | - | - | | |
| SW 4 U | Wet | 30/08/2014 | 15.94 | 0.3 | 34.7 | 5.33 | 67.7 | Controls in place, no evidence of sediment going off-site | |
| SW 4 D | Wet | 30/08/2014 | 15.45 | 0.3 | 35.5 | 5.48 | 61.8 | | |

**Johnsons Creek**

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 5 U | Dry | 6/03/2014 | - | - | - | - | - | No connection upstream to downstream | Timber piling, bulk earthworks and stockpiling |
| SW 5 D | Dry | 6/03/2014 | - | - | - | - | - | | |
| SW 5 U | Wet | 3/03/2014 | - | - | - | - | - | No connection upstream to downstream | Timber piling, bulk earthworks and stockpiling |
| SW 5 D | Wet | 3/03/2014 | - | - | - | - | - | | |
| SW 5 U | Wet | 21/03/2014 | - | - | - | - | - | No connection upstream to downstream | Timber piling, bulk earthworks and stockpiling |
| SW 5 D | Wet | 21/03/2014 | - | - | - | - | - | | |
| SW 5 U | Wet | 28/03/2014 | - | - | - | - | - | No access to this area during and following rain event on the 28/03/2014. | No construction works due to wet weather |
| SW 5 D | Wet | 28/03/2014 | - | - | - | - | - | | |
| SW 5 U | Dry | 7/04/2014 | 27.15 | 1479 | 130.9 | 2.92 | 2.7 | Low water levels approximately 50m upstream of works. Evidence of cattle movements in creekline. | Construction works at time of sampling included rock importation to the north of Bridge 12. Water is filtering through rock platform |
| SW 5 D | Dry | 7/04/2014 | 27.46 | 1044 | 68.3 | 3.39 | 9.8 | | |
| SW 5 U | Wet | 29/04/2014 | - | - | - | - | - | Small pool of water upstream and downstream. No connection. | Works on geotechnical instruments |
| SW 5 D | Wet | 29/04/2014 | - | - | - | - | - | | |
| SW 5 U | Dry | 14/05/2014 | - | - | - | - | - | No water | Haulage, fill placement, bridge works. |
| SW 5 D | Dry | 14/05/2014 | - | - | - | - | - | | |
| SW 5 U | Wet | 30/05/2014 | - | - | - | - | - | No water | Haulage, fill placement, bridge works. |
| SW 5 D | Wet | 30/05/2014 | - | - | - | - | - | | |
| SW 5 U | Dry | 19/06/2014 | - | - | - | - | - | No water | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 5 D | Dry | 19/06/2014 | - | - | - | - | - | | |
| SW 5 U | Wet | 30/06/2014 | - | - | - | - | - | No water | Haulage, fill placement, bridge works |
| SW 5 D | Wet | 30/06/2014 | - | - | - | - | - | | |
| SW 5 U | Dry | 3/07/2014 | - | - | - | - | - | No water | Bridgeworks, placement of fill |
| SW 5 D | Dry | 3/07/2014 | - | - | - | - | - | | |
| SW 5 U | Dry | 18/08/2014 | - | - | - | - | - | Creek is dry | |
| SW 5 D | Dry | 18/08/2014 | - | - | - | - | - | | |
| SW 5 U | Wet | 30/08/2014 | 15.45 | 0.3 | 56.9 | 4.65 | 19.5 | Water flowing through construction site. Depth approximately 300mm, water flowing through rock | Piling platform clean rock and scour protection on bridge abutments installed |
| SW 5 D | Wet | 30/08/2014 | 16.22 | 0.6 | 38.3 | 5.02 | 19.1 | | |

**Barraganyatti Creek**

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 6 U | Dry | 7/03/2014 | 23.58 | 784 | 13.6 | 5.75 | 16.6 | It should be noted the temperature difference which may be the cause for an increase in DO and decrease in EC. Sampling point is being reassessed. | Clean water diversion is still in place awaiting the finalisation of pipework. Erosion and sediment controls on alignment and access road. |
| SW 6 D | Dry | 7/03/2014 | 26.06 | 405 | 54.6 | 6.04 | 45.7 | | |
| SW 6 U | Wet | 3/03/2014 | 23.79 | 780 | 40.8 | 6.04 | 16 | Basins overtopped with a 65mm rainfall event over the weekend. Sampling point is being reassessed. It should be noted that the temperature is quite different which may have had an affect on EC and DO. | No works in this area at the time of sampling, other than cleaning out Erosion and sediment controls and treatment of basins. |
| SW 6 D | Wet | 3/03/2014 | 26.72 | 464 | 66.7 | 5.78 | 48.7 | | |
| SW 6 U | Wet | 21/03/2014 | - | - | - | - | - | No connection upstream to downstream | Clean water diversion is still in place awaiting the finalisation of pipework. Erosion and sediment controls on alignment and access road. |
| SW 6 D | Wet | 21/03/2014 | - | - | - | - | - | | |
| SW 6 U | Wet | 28/03/2014 | 23.4 | 643 | 38.5 | 6.19 | 50 | Water was fast running from upstream, through clean water diversion and basin treatment area to running downstream. Upstream sample was unrestricted with minimal vegetation. Downstream sample had thick grasses and was at a low level with water not moving | No construction works due to wet weather. Basins were overtopping at time of sample. Clean water drain at the western side was running into the water diversion. |
| SW 6 D | Wet | 28/03/2014 | 23.55 | 597 | 61.7 | 6.31 | 90.6 | | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | very fast which could contribute to change in DO levels. Both basins on the Eastern side of the diversion had been overtopping at time of sampling. | |
| SW 6 U | Dry | 15/04/2014 | 21.23 | 735 | 36.9 | 6.08 | 8.8 | Very slow flow, natural tannins present.<br>Pool of water not flowing, low water level. | An excavator was preparing the outlet for the pipe for finalisation. The scour protection at the inlet was being completed and scraper, moxies and water carts were hauling past. There is also recent hydromulching of the upstream side of the clean water diversion. |
| SW 6 D | Dry | 15/04/2014 | 23.16 | 686 | 82.5 | 6.3 | 17.5 | | |
| SW 6 U | Wet | 28/04/2014 | - | - | - | - | - | No representative water sample taken as water does not flow through and off-site | Pipe is now commissioned with wingwalls, scour protection and the discontinuation of the water diversion through the site. |
| SW 6 D | Wet | 28/04/2014 | - | - | - | - | - | | |
| SW 6 U | Dry | 14/05/2014 | - | - | - | - | - | Pool of water upstream which flows into diversion and culvert inlet area. No flow from culvert area to offsite sampling location | Haulage works, rolling of access road. New scour rock installed at outlet of the culvert. |
| SW 6 D | Dry | 14/05/2014 | - | - | - | - | - | | |
| SW 6 U | Wet | 30/05/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone for this reporting month. Rainfall event continued into next reporting month | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | of which a wet sample will be taken | |
| SW 6 D | Wet | 30/05/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone for this reporting month. Rainfall event continued into next reporting month of which a wet sample will be taken | |
| SW 6 U | Dry | 17/06/2014 | - | - | - | - | - | No water. Creek flow blocked off by neighbouring resident for clearing access. | |
| SW 6 D | Dry | 17/06/2014 | - | - | - | - | - | | |
| SW 6 U | Wet | 3/06/2014 | - | - | - | - | - | No sample taken, no connection with upstream water to construction site | Additional fill placed on access road |
| SW 6 D | Wet | 3/06/2014 | - | - | - | - | - | | |
| SW 6 U | Dry | 11/07/2014 | - | - | - | - | - | No connection through construction site | Access Road, placing fill on the mainline |
| SW 6 D | Dry | 11/07/2014 | - | - | - | - | - | | |
| SW 6 U | Dry | 1/08/2014 | - | - | - | - | - | No sample taken, no water flow through construction site | Access road, long drainage |
| SW 6 D | Dry | 1/08/2014 | - | - | - | - | - | | |

**Borirgalla Creek**

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| SW 7 U | Dry | 7/03/2014 | 26.68 | 227 | 47.4 | 5.85 | 81.7 | EC and turbidity has increased. | Clean water diversion is still in place, Culvert 308 works, seeding of batters, erosion and sediment controls |
| SW 7 D | Dry | 7/03/2014 | 27.83 | 325 | 47.8 | 5.86 | 174.5 | | |
| SW 7 U | Wet | 3/03/2014 | 24.35 | 200 | 34.5 | 6.02 | 294.8 | Sampling point is being reassessed as pool of water was no deeper than 15cm and amongst riparian vegetation, as well as the proximity to the outlet of basin 35200E. | Clean water diversion is still in place, Culvert 308 works, seeding of batters, erosion and sediment controls |
| SW 7 D | Wet | 3/03/2014 | 23.5 | 169 | 14.5 | 5.98 | 295.3 | | |
| SW 7 U | Wet | 21/03/2014 | 22.1 | 413 | 41.4 | 6.07 | 17 | Upstream sample is taken in more representative location. Turbdity has slightly increased. Water is not moving very fast through the creekline due to the natural width of the creek | Clean water diversion is still in place, Culvert 308 works, seeding of batters, erosion and sediment controls |
| SW 7 D | Wet | 21/03/2014 | 23.18 | 449 | 59.6 | 6.12 | 47.2 | | |
| SW 7 U | Wet | 28/03/2014 | 21.58 | 377 | 65.9 | 5.24 | 31.5 | Water diversion was full. Both basins were overtopping at time of sampling. Clean water drain to the south did not continue to the bank of the downstream creek and could contribute to bank erosion and turbidity impacts. Billabong has reached capacity behind clean water diversion and has undercut geofabric which has resulted in soil erosion under the clean water diversion. This will be remedied before the next rainfall | No construction works due to wet weather. Basins were overtopping at time of sample. Clean water drain at the eastern side was running into the downstream side of the creek. Cut off drains were in place directing water to the two basins and water on the ramp was being directed into the 308 culvert site. |
| SW 7 D | Wet | 28/03/2014 | 22.73 | 368 | 71.1 | 6.04 | 121.2 | | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | event. Creek was full but stagnant on both sides of the alignment. | |
| SW 7 U | Dry | 3/04/2014 | 23.04 | 599 | 26.6 | 5.91 | 22.7 | Similar to downstream conditions. Natural tannins present, slight murky look to the water surface. Creek is not freely flowing. | The basin to the south of the creek diversion was being discharged at time of sampling. |
| SW 7 D | Dry | 3/04/2014 | 22.84 | 402 | 15.3 | 5.51 | 27.9 | Natural tannins present, slight murky look to the water surface. Creek is not freely flowing | |
| SW 7 U | Wet | 28/04/2014 | 22.78 | 452 | 61.4 | 6.01 | 23.8 | Natural tannins present, slight murky look to the water surface. **Creek is not freely flowing.** Water was slightly murky downstream of the works, natural tannins. | No works were scheduled for the day due to the shutdown period after the ANZC break and recent rain. A pump was being set up at Culvert 308 ready to discharge water off-site. |
| SW 7 D | Wet | 28/04/2014 | 20.44 | 506 | 76.9 | 6.96 | 57.9 | | |
| SW 7 U | Dry | 24/05/2014 | 17.35 | 424 | 27.6 | 5.89 | 21.6 | No flow, stagnant water on the upstream, within the diversion and also downstream. | Fill placement over culvert, haulage. |
| SW 7 D | Dry | 24/05/2014 | 16.96 | 553 | 26.4 | 6.7 | 23.8 | | |
| SW 7 U | Wet | 30/05/2014 | - | - | - | - | - | Wet surface water sampling was not triggered in this zone for this reporting month. Rainfall event continued into next reporting month of which a wet sample will be taken | |
| SW 7 D | Wet | 30/05/2014 | - | - | - | - | - | | |
| SW 7 U | Dry | 18/06/2014 | 12.88 | 573 | 33.5 | 5.91 | 19.3 | Organic material floating on top of creek. Bund removed on morning of sample as outlet scour protection | Erosion and sediment controls in place. Culvert outlet completed |
| SW 7 D | Dry | 18/06/2014 | 15.44 | 561 | 28.8 | 6.51 | 22.7 | | |

| Location | Type of Sampling | Date sample taken | Temp (C) | E.C (uscm) | D.O.(%sat) | pH (pH) | Turb (ntu) | Comments | Construction |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | works were completed | |
| SW 7 U | Wet | 3/06/2014 | 15.95 | 403 | 20.8 | 6.05 | 15.4 | Organic material floating on top of creek, water levels have dropped<br>Similar conditions to upstream | Scour protection installed at culvert outlet, some sediment spillover into water diversion over haul road crossing |
| SW 7 D | Wet | 3/06/2014 | 15.71 | 470 | 25.7 | 6.69 | 27.5 | | |
| SW 7 U | Dry | 11/07/2014 | - | - | - | - | - | No connection through construction site | Excavation works and loading into moxies to haul to fill areas |
| SW 7 D | Dry | 11/07/2014 | - | - | - | - | - | | |
| SW 7 U | Dry | 5/08/2014 | - | - | - | - | - | No sample taken, no water flow through construction site | Access road placement of fill, compaction and sealing |
| SW 7 D | Dry | 5/08/2014 | - | - | - | - | - | | |
| SW 7 U | Wet | 29/08/2014 | 15.56 | 0.3 | 57.9 | 5.85 | 46.4 | Slightly murky similar to upstream conditions, basin 35750E overtopped 28/8 and **basin being discharged on the day of sampling** | Macleay Valley Way placement of material |
| SW 7 D | Wet | 29/08/2014 | 17.01 | 0.4 | 76.4 | 5.82 | 64.3 | | |

**Sediment Basin Overtopping Events**

| ZONE | Basin | Easting | Northing | Site Location | Overflow Date |
|---|---|---|---|---|---|
| Zone 3 | 30400W | 492,011.4 | 6,580,424.0 | SW of Cooks Lane near Interchange | 27/03/2014 |
| Zone 3 | 35750E | 493,097.4 | 6,585,194.0 | E Pacific Highway (adjacent) Swamp Sclerophyll Forest | 27/03/2014 |
| Zone 3 | 38100E | 491,565.8 | 6,586,915.2 | E Pacific Highway, 450m N Stuarts Point Road | 27/03/2014 |
| Zone 3 | 30350E | 492,045.7 | 6,580,278.3 | SW of Cooks Lane near Interchange | 28/03/2014 |
| Zone 3 | 30800E | 493,454.4 | 6,582,281.1 | SW of Cooks Lane 200m | 28/03/2014 |
| Zone 3 | 31150E | 492,702.9 | 6,580,868.4 | NE of Cooks Lane 130m | 28/03/2014 |
| Zone 3 | 31250W | 492,679.1 | 6,580,960.2 | NE of Cooks Lane 130m | 28/03/2014 |
| Zone 3 | 31650E | 493,016.0 | 6,581,264.9 | Swamp Sclerophyll Forest | 28/03/2014 |
| Zone 3 | 31750W | 492,989.6 | 6,581,393.9 | SW of Hills Lane 700m | 28/03/2014 |
| Zone 3 | 32400E | 493,333.2 | 6,581,935.3 | SW of Hills Lane 700m | 28/03/2014 |
| Zone 3 | 32450W | 493,258.3 | 6,581,996.2 | SW of Hills Lane 700m | 28/03/2014 |
| Zone 3 | 32700E | 493,437.4 | 6,582,209.2 | N of Hills Lane 120m | 28/03/2014 |
| Zone 3 | 32800E | 493,454.4 | 6,582,281.1 | N of Hills Lane 230m | 28/03/2014 |
| Zone 3 | 33000E | 493,546.8 | 6,582,502.8 | E of Clancys Road 270m | 28/03/2014 |
| Zone 3 | 33070E | 493,558.3 | 6,582,525.4 | E of Clancys Road 270m | 28/03/2014 |
| Zone 3 | 34100E | 493,688.2 | 6,583,609.6 | W Pacific Highway 320m River-flat Forest | 28/03/2014 |
| Zone 3 | 34350E | 493,645.3 | 6,583,853.0 | S of Nirvana Road 100m | 28/03/2014 |
| Zone 3 | 35200E | 493,385.9 | 6,584,674.1 | N of Nirvana Road 650m | 28/03/2014 |
| Zone 3 | 35250E | 493,368.4 | 6,584,724.0 | S Pacific Highway 600m | 28/03/2014 |
| Zone 3 | 35650E | 493,186.6 | 6,585,068.8 | W Pacific Highway (adjacent) Swamp Sclerophyll Forest | 28/03/2014 |
| Zone 3 | 36750E | 492,439.9 | 6,585,933.0 | E Pacific Highway (adjacent) Swamp Sclerophyll Forest | 28/03/2014 |
| Zone 3 | 36850E | 492,411.3 | 6,585,957.9 | E Pacific Highway (adjacent) Swamp Sclerophyll Forest | 28/03/2014 |

| ZONE | Basin | Easting | Northing | Site Location | Overflow Date |
|---|---|---|---|---|---|
| Zone 3 | 38050E | 491,587.2 | 6,586,884.7 | E Pacific Highway, 450m N Stuarts Point Road | 28/03/2014 |
| Zone 3 | Cut 25 Basin | | | N of Nirvana Road 300m | 28/03/2014 |
| Zone 1 | 15400E | 487,636.0 | 6,568,734.8 | | 29/03/2014 |
| Zone 1 | 15500E | 487,614.0 | 6,568,767.5 | | 29/03/2014 |
| Zone 2 | 21550W | 486,332.3 | 6,574,537.3 | Swamp Oak Floodplain Forest | 29/03/2014 |
| Zone 3 | 30250E | 491,996.4 | 6,580,259.2 | SW of Cooks Lane near Interchange | 29/03/2014 |
| Zone 1 | 14500E | 488294.7 | 6568081.8 | N of un-named waterway N of Frederickton | 6/04/2014 |
| Zone 1 | 15450W | 487516.5 | 6568742.1 | Swamp Sclerophyll Forest | 6/04/2014 |
| Zone 1 | 16350E | 487067.7 | 6569472.9 | N Mill/Quarry Road 250m | 6/04/2014 |
| Zone 1 | 16500E | 487055.2 | 6569494.7 | N Mill/Quarry Road 170m | 6/04/2014 |
| Zone 1 | 17350E | 486683.7 | 6570386 | W Seashore Lane - upstream of Maundia | 6/04/2014 |
| Zone 2 | 21200E | 486502.1 | 6574181.1 | Swamp Oak Floodplain Forest | 6/04/2014 |
| Zone 2 | 21700W | 486,304.9 | 6,574,680.0 | S of Seven Hills Road 1km | 6/04/2014 |
| Zone 2 | 22750E | 486467.1 | 6575698.2 | W of Seven Hills Road | 6/04/2014 |
| Zone 2 | 25950E | 488,208.1 | 6,578,332.4 | SE of Spankers Flat Road near CP 1/3 Road 400m | 6/04/2014 |
| Zone 1 | 14500E | 488294.7 | 6568081.8 | N of un-named waterway N of Frederickton | 27/08/2014 |
| Zone 1 | 14900E | 487982.3 | 6568408.9 | E of Raymonds Lane | 27/08/2014 |
| Zone 1 | 15000W | 487882.6 | 6568376.7 | E of Raymonds Lane | 17/08/2014 |
| Zone 1 | 15000W | 487882.6 | 6568376.7 | E of Raymonds Lane | 27/08/2014 |
| Zone 1 | 15400E | 487636 | 6568734.8 | E CML 104 | 27/08/2014 |
| Zone 1 | 15450W | 487516.5 | 6568742.1 | Swamp Sclerophyll Forest | 27/08/2014 |
| Zone 1 | 15500E | 487614 | 6568767.5 | W CML 104 | 27/08/2014 |
| Zone 1 | 16350E | 487067.7 | 6569472.9 | N Mill/Quarry Road 250m | 27/08/2014 |
| Zone 1 | 16500E | 487055.2 | 6569494.7 | N Mill/Quarry Road 170m | 27/08/2014 |
| Zone 1 | 17350E | 486683.7 | 6570386 | W Seashore Lane - upstream of Maundia | 27/08/2014 |
| Zone 1 | 17350W | 486615.8 | 6570263 | W Seashore Lane - upstream of Maundia | 27/08/2014 |
| Zone 1 | 17400W | 486589.2 | 6570388.1 | W Seashore Lane - upstream of Maundia | 27/08/2014 |
| Zone 1 | 18600E | 486531.3 | 6571628.3 | N of Kemps Access 280m | 27/08/2014 |

| ZONE | Basin | Easting | Northing | Site Location | Overflow Date |
|---|---|---|---|---|---|
| Zone 1 | 18800W | 486448.5 | 6571827.9 | N of Kemps Access 500m | 17/08/2014 |
| Zone 1 | 18800W | 486448.5 | 6571827.9 | N of Kemps Access 500m | 27/08/2014 |
| Zone 1 | 18950E | 486539.1 | 6571983.9 | Swamp Sclerophyll Forest | 27/08/2014 |
| Zone 1 | 18950W | 486459 | 6571965 | Swamp Sclerophyll Forest | 27/08/2014 |
| Zone 2 | 21200E | 486502.1 | 6574181.1 | Swamp Oak Floodplain Forest | 27/08/2014 |
| Zone 2 | 21550W | 486332.3 | 6574537.3 | Swamp Oak Floodplain Forest | 27/08/2014 |
| Zone 2 | 21600W | 486328.7 | 6574576.2 | Swamp Oak Floodplain Forest | 27/08/2014 |
| Zone 2 | 21700E | 486391.3 | 6574710.4 | S of Seven Hills Road 1km | 17/08/2014 |
| Zone 2 | 21700E | 486391.3 | 6574710.4 | S of Seven Hills Road 1km | 27/08/2014 |
| Zone 2 | 22750E | 486467.1 | 6575698.2 | W of Seven Hills Road | 27/08/2014 |
| Zone 2 | 23800W | 486998.7 | 6576620 | E of Tanban Road 400m | 27/08/2014 |
| Zone 2 | 23850E | 487091 | 6576583.9 | E of Tanban Road 400m | 27/08/2014 |
| Zone 2 | 24300W | 487256.3 | 6577008.3 | E of Tanban Road 600m | 27/08/2014 |
| Zone 2 | 24950E | 487641.9 | 6577444.1 | E of Tanban Road 900m | 27/08/2014 |
| Zone 2 | 24950W | 487548.7 | 6577475.9 | E of Tanban Road 900m | 27/08/2014 |
| Zone 2 | 25550E | 488005.7 | 6578066.5 | E of CP 1/2 Road 550m | 27/08/2014 |
| Zone 2 | 25950E | 488208.1 | 6578332.4 | SE of Spankers Flat Road near CP 1/3 Road 400m | 27/08/2014 |
| Zone 2 | 26050W | 488204.2 | 6578484.9 | Floodplain | 27/08/2014 |
| Zone 2 | 26650E | 488725.6 | 6578883.5 | SE of Spankers Flat Road 450m | 27/08/2014 |
| Zone 2 | 27550E | 489479.3 | 6579311 | SE of Battersons Road 1km | 27/08/2014 |
| Zone 2 | 27550W | 489424.5 | 6579375.9 | SE of Battersons Road 1km | 17/08/2014 |
| Zone 2 | 27550W | 489424.5 | 6579375.9 | SE of Battersons Road 1km | 27/08/2014 |
| Zone 2 | 28100E | 489976.5 | 6579488.1 | Floodplain | 27/08/2014 |
| Zone 2 | TB22750E | 486468.7 | 6575714.5 | W of Seven Hills Road | 28/08/2014 |
| Zone 3 | 30250E | 491996.4 | 6580259.2 | SW of Cooks Lane near Interchange | 17/08/2014 |
| Zone 3 | 30250E | 491996.4 | 6580259.2 | SW of Cooks Lane near Interchange | 28/08/2014 |

| ZONE | Basin | Easting | Northing | Site Location | Overflow Date |
|---|---|---|---|---|---|
| Zone 3 | 30350E | 492045.7 | 6580278.3 | SW of Cooks Lane near Interchange | 28/08/2014 |
| Zone 3 | 31150E | 492702.9 | 6580868.4 | NE of Cooks Lane 130m | 28/08/2014 |
| Zone 3 | 31250W | 492679.1 | 6580960.2 | NE of Cooks Lane 130m | 17/08/2014 |
| Zone 3 | 31250W | 492679.1 | 6580960.2 | NE of Cooks Lane 130m | 28/08/2014 |
| Zone 3 | 31650E | 493016 | 6581264.9 | Swamp Sclerophyll Forest | 28/08/2014 |
| Zone 3 | 31750W | 492989.6 | 6581393.9 | SW of Hills Lane 700m | 28/08/2014 |
| Zone 3 | 32450W | 493258.3 | 6581996.2 | SW of Hills Lane 700m | 17/08/2014 |
| Zone 3 | 32450W | 493258.3 | 6581996.2 | SW of Hills Lane 700m | 28/08/2014 |
| Zone 3 | 32700E | 493437.4 | 6582209.2 | N of Hills Lane 120m | 28/08/2014 |
| Zone 3 | 32800E | 493454.4 | 6582281.1 | N of Hills Lane 230m | 28/08/2014 |
| Zone 3 | 33950W | 493571.2 | 6583407.8 | W Pacific Highway 300m River-flat Forest | 28/08/2014 |
| Zone 3 | 34000W | 493594.8 | 6583493.8 | W Pacific Highway 385m River-flat Forest | 28/08/2014 |
| Zone 3 | 34100E | 493688.2 | 6583609.6 | W Pacific Highway 320m River-flat Forest | 28/08/2014 |
| Zone 3 | 34350E | 493645.3 | 6583853 | S of Nirvana Road 100m | 28/08/2014 |
| Zone 3 | 34400E | 493638.4 | 6583881.7 | S of Nirvana Road 600m | 28/08/2014 |
| Zone 3 | 35200E | 493385.9 | 6584674.1 | N of Nirvana Road 650m | 28/08/2014 |
| Zone 3 | 35200W | 493328 | 6584637.2 | S Pacific Highway 650m | 28/08/2014 |
| Zone 3 | 35250E | 493368.4 | 6584724 | S Pacific Highway 600m | 28/08/2014 |
| Zone 3 | 35250W | 493315.4 | 6584669.5 | S Pacific Highway 600m | 28/08/2014 |
| Zone 3 | 35650E | 493186.6 | 6585068.8 | W Pacific Highway (adjacent) Swamp Sclerophyll Forest | 28/08/2014 |
| Zone 3 | 35750E | 493097.4 | 6585194 | E Pacific Highway (adjacent) Swamp Sclerophyll Forest | 17/08/2014 |
| Zone 3 | 35750E | 493097.4 | 6585194 | E Pacific Highway (adjacent) Swamp Sclerophyll Forest | 28/08/2014 |
| Zone 3 | 38050E | 491587.2 | 6586884.7 | E Pacific Highway, 450m N Stuarts Point Road | 17/08/2014 |
| Zone 3 | 38050E | 491587.2 | 6586884.7 | E Pacific Highway, 450m N Stuarts Point Road | 28/08/2014 |
| Zone 3 | 38100E | 491565.8 | 6586915.2 | E Pacific Highway, 450m N Stuarts Point Road | 17/08/2014 |
| Zone 3 | 38100E | 491565.8 | 6586915.2 | E Pacific Highway, 450m N Stuarts Point Road | 28/08/2014 |
| Zone 3 | 38450E | 491293.5 | 6587168.2 | E Pacific Highway, 300m S Brushbox Lane | 28/08/2014 |
| Zone 3 | 39400E | 490853.5 | 6587923.6 | Opp Intersection of Pacific Highway and Station Street | 21/08/2014 |

| ZONE | Basin | Easting | Northing | Site Location | Overflow Date |
|---|---|---|---|---|---|
| Zone 3 | 39400E | 490853.5 | 6587923.6 | Opp Intersection of Pacific Highway and Station Street | 28/08/2014 |
| Zone 3 | TB30450 | 492399.2 | 6580054.2 | Main Compound - B | 28/08/2014 |

**Sediment Basin Discharge Events**

| Basin number | Release date | pH | Turbidity (NTU) | TSS Calculated from Ratio | Presence of Oils - Hydrocarbons |
|---|---|---|---|---|---|
| 35250E | 4/03/2014 | 6.8 | 5 | 3.6 | nil |
| 35250W | 4/03/2014 | 7.2 | 21 | 15.0 | nil |
| 36850E | 4/03/2014 | 7.25 | 24 | 17.1 | nil |
| 36750E | 4/03/2014 | 6.85 | 25 | 17.9 | nil |
| 14500E | 4/03/2014 | 6.7 | 20 | 14.3 | nil |
| 14900E | 4/03/2014 | 6.7 | 10 | 7.1 | nil |
| 15400E | 4/03/2014 | 7.1 | 5 | 3.6 | nil |
| 15500E | 4/03/2014 | 6.8 | 10 | 7.1 | nil |
| 15450W | 4/03/2014 | 6.6 | 5 | 3.6 | nil |
| 16350E | 4/03/2014 | 6.6 | 15 | 10.7 | nil |
| 16500E | 4/03/2014 | 6.9 | 10 | 7.1 | nil |
| 21550W | 4/03/2014 | 6.7 | 10 | 7.1 | nil |
| 21600W | 4/03/2014 | 6.7 | 5 | 3.6 | nil |
| 22750E | 4/03/2014 | 6.8 | 30 | 21.4 | nil |
| 35750W | 5/03/2014 | 7.2 | 50 | 35.7 | nil |
| 30350E | 5/03/2014 | 6.7 | 10 | 7.1 | nil |
| 31750W | 5/03/2014 | 7.84 | 20 | 14.3 | nil |
| 32400E | 5/03/2014 | 7.2 | 40 | 28.6 | nil |
| BASIN 4 | 6/03/2014 | 7.6 | 10 | 7.1 | nil |
| 17450E | 6/03/2014 | 6.7 | 10 | 7.1 | nil |
| 17350W | 6/03/2014 | 6.7 | 60 | 42.9 | nil |
| 16500E | 6/03/2014 | 6.8 | 10 | 7.1 | nil |
| 21200E | 6/03/2014 | 6.6 | 10 | 7.1 | nil |
| 31250W | 6/03/2014 | 7.65 | 24 | 17.1 | nil |
| 38050E | 6/03/2014 | 6.85 | 50 | 35.7 | nil |
| 18600E | 7/03/2014 | 6.8 | 60 | 42.9 | nil |
| 34350E | 7/03/2014 | 7.25 | 13 | 9.3 | nil |
| 31650E | 8/03/2014 | 7.27 | 50 | 35.7 | nil |
| 35200E | 10/03/2014 | 7.05 | 50 | 35.7 | nil |
| 36850E | 10/03/2014 | 6.96 | 24 | 17.1 | nil |
| 31150E | 10/03/2014 | 7.53 | 48 | 34.3 | nil |
| 15000E | 11/03/2014 | 6.8 | 10 | 7.1 | nil |
| 16500E | 11/03/2014 | 6.9 | 5 | 3.6 | nil |
| 18600E | 11/03/2014 | 6.8 | 20 | 14.3 | nil |
| 37200E | 11/03/2014 | 7.75 | 45 | 32.1 | nil |
| 18800W | 11/03/2014 | 6.7 | 30 | 21.4 | nil |
| 17350W | 11/03/2014 | 6.7 | 60 | 42.9 | nil |
| 17450E | 11/03/2014 | 6.7 | 5 | 3.6 | nil |
| 25550E | 11/03/2014 | 6.6 | 45 | 32.1 | nil |
| 31650E | 11/03/2014 | 7.26 | 65 | 46.4 | nil |
| 33000E | 12/03/2014 | 6.98 | 5 | 3.6 | nil |
| 33070E | 12/03/2014 | 7.04 | 15 | 10.7 | nil |
| 30400W | 13/03/2014 | 7.58 | 40 | 28.6 | nil |
| 36750E | 13/03/2014 | 7.8 | 60 | 42.9 | nil |
| 30350E | 13/03/2014 | 6.98 | 11 | 7.9 | nil |
| 26650E | 13/03/2014 | 7.2 | 60 | 42.9 | nil |

| Basin number | Release date | pH | Turbidity (NTU) | TSS Calculated from Ratio | Presence of Oils - Hydrocarbons |
|---|---|---|---|---|---|
| 32450W | 13/03/2014 | 7.48 | 70 | 50.0 | nil |
| 38100E | 13/03/2014 | 7.75 | 50 | 35.7 | nil |
| 35250W | 19/03/2014 | 8.39 | 62 | 44.3 | nil |
| TB34750 | 19/03/2014 | 8.31 | 30 | 21.4 | nil |
| 30800E | 19/03/2014 | 6.61 | 35 | 25.0 | nil |
| 30250E | 31/03/2014 | 6.7 | 5 | 3.6 | nil |
| 30350E | 31/03/2014 | 7.98 | 15 | 10.7 | nil |
| 35200E | 31/03/2014 | 7.46 | 70 | 50.0 | nil |
| 35250E | 31/03/2014 | 7.64 | 12 | 8.6 | nil |
| 35250W | 31/03/2014 | 8.04 | 9 | 6.4 | nil |
| 30800E | 31/03/2014 | 8.04 | 5 | 3.6 | nil |
| BASIN 4 | 31/03/2014 | 7.52 | 27 | 19.3 | nil |
| Fill 19 Swale | 31/03/2014 | 6.99 | 5 | 3.6 | nil |
| 14500E | 1/04/2014 | 6.6 | 10 | 8.8 | nil |
| 14900E | 1/04/2014 | 6.5 | 10 | 8.8 | nil |
| 15000E | 1/04/2014 | 6.9 | 25 | 22.1 | nil |
| 15450W | 1/04/2014 | 6.7 | 10 | 8.8 | nil |
| 15400E | 1/04/2014 | 6.8 | 15 | 13.3 | nil |
| 35650E | 1/04/2014 | 6.65 | 5 | 4.4 | nil |
| 35750W | 1/04/2014 | 8.46 | 22 | 19.5 | nil |
| 36750E | 1/04/2014 | 8.3 | 5 | 4.4 | nil |
| 36850E | 1/04/2014 | 6.67 | 5 | 4.4 | nil |
| 30400W | 2/04/2014 | 7.9 | 25 | 22.1 | nil |
| 34800E | 2/04/2014 | 6.72 | 21 | 18.6 | nil |
| 34350E | 2/04/2014 | 8.2 | 55 | 48.7 | nil |
| 38100E | 2/04/2014 | 8.14 | 55 | 48.7 | nil |
| 21200E | 3/04/2014 | 6.6 | 10 | 8.8 | nil |
| 21550W | 3/04/2014 | 6.8 | 10 | 8.8 | nil |
| 21600W | 3/04/2014 | 6.8 | 5 | 4.4 | nil |
| 24300W | 3/04/2014 | 6.6 | 35 | 31.0 | nil |
| 15500E | 3/04/2014 | 7.7 | 5 | 4.4 | nil |
| 25550E | 3/04/2014 | 8.4 | 60 | 53.1 | nil |
| 32400E | 3/04/2014 | 8.36 | 5 | 4.4 | nil |
| 33000E | 3/04/2014 | 7.01 | 45 | 39.8 | nil |
| 31150E | 4/04/2014 | 8.22 | 5 | 4.4 | nil |
| 31250W | 4/04/2014 | 6.99 | 55 | 48.7 | nil |
| 32450W | 4/04/2014 | 7.5 | 22 | 19.5 | nil |
| 36850E | 5/04/2014 | 6.91 | 62 | 54.9 | nil |
| 31650E | 5/04/2014 | 8.16 | 40 | 35.4 | nil |
| 31750W | 5/04/2014 | 7.4 | 24 | 21.2 | nil |
| 32800E | 5/04/2014 | 8.15 | 40 | 35.4 | nil |
| 14500E | 7/04/2014 | 6.7 | 5 | 4.4 | nil |
| 14900E | 7/04/2014 | 6.6 | 10 | 8.8 | nil |
| 18600E | 7/04/2014 | 6.6 | 20 | 17.7 | nil |
| 21200E | 7/04/2014 | 6.9 | 25 | 22.1 | nil |
| 21550W | 7/04/2014 | 6.7 | 25 | 22.1 | nil |
| 25950E | 7/04/2014 | 7.1 | 30 | 26.5 | nil |
| 27550E | 7/04/2014 | 6.8 | 10 | 8.8 | nil |

| Basin number | Release date | pH | Turbidity (NTU) | TSS Calculated from Ratio | Presence of Oils - Hydrocarbons |
|---|---|---|---|---|---|
| 27550W | 7/04/2014 | 7.1 | 65 | 57.5 | nil |
| 30800E | 7/04/2014 | 7.06 | 60 | 53.1 | nil |
| 31250W | 7/04/2014 | 6.68 | 70 | 61.9 | nil |
| 31650E | 7/04/2014 | 6.75 | 60 | 53.1 | nil |
| 31750W | 7/04/2014 | 6.79 | 35 | 31.0 | nil |
| 35250E | 7/04/2014 | 6.66 | 17 | 15.0 | nil |
| 36750E | 7/04/2014 | 6.57 | 24 | 21.2 | nil |
| 36850E | 7/04/2014 | 7.65 | 11 | 9.7 | nil |
| 15450W | 7/04/2014 | 6.9 | 5 | 4.4 | nil |
| 32400E | 7/04/2014 | 6.66 | 22 | 19.5 | nil |
| 15500E | 7/04/2014 | 6.8 | 10 | 8.8 | nil |
| 32450W | 7/04/2014 | 6.57 | 30 | 26.5 | nil |
| 38050E | 7/04/2014 | 6.83 | 11 | 9.7 | nil |
| 38100E | 7/04/2014 | 7.5 | 50 | 44.2 | nil |
| 15000E | 8/04/2014 | 6.7 | 10 | 8.8 | nil |
| 15000W | 8/04/2014 | 6.8 | 15 | 13.3 | nil |
| 16350E | 8/04/2014 | 6.5 | 10 | 8.8 | nil |
| 21600W | 8/04/2014 | 6.8 | 15 | 13.3 | nil |
| 22750E | 8/04/2014 | 6.7 | 20 | 17.7 | nil |
| 25950E | 8/04/2014 | 6.8 | 35 | 31.0 | nil |
| 31150E | 8/04/2014 | 6.72 | 24 | 21.2 | nil |
| 32800E | 8/04/2014 | 7.06 | 45 | 39.8 | nil |
| 30250E | 8/04/2014 | 7.97 | 35 | 31.0 | nil |
| 30400W | 8/04/2014 | 8.4 | 5 | 4.4 | nil |
| 35200E | 8/04/2014 | 6.82 | 60 | 53.1 | nil |
| 35250E | 8/04/2014 | 7.59 | 10 | 8.8 | nil |
| 35250W | 8/04/2014 | 6.72 | 60 | 53.1 | nil |
| 35650E | 8/04/2014 | 7.05 | 24 | 21.2 | nil |
| 17450E | 8/04/2014 | 6.6 | 5 | 4.4 | nil |
| 15400E | 8/04/2014 | 6.8 | 10 | 8.8 | nil |
| WB Swale Drain Fill 19 | 8/04/2014 | 7.73 | 16 | 14.2 | nil |
| 30400W | 8/04/2014 | 6.62 | 45 | 39.8 | nil |
| 34800E | 8/04/2014 | 8.01 | 27 | 23.9 | nil |
| 33000E | 12/04/2014 | 7.16 | 32 | 28.3 | nil |
| 33070E | 14/04/2014 | 7.42 | 65 | 57.5 | nil |
| EB Swale Drain Fill 19 | 14/04/2014 | 6.92 | 12 | 10.6 | nil |
| 35200E | 15/04/2014 | 6.78 | 32 | 28.3 | nil |
| 30400W | 28/04/2014 | 6.67 | 27 | 23.9 | nil |
| 31650E | 28/04/2014 | 6.89 | 24 | 21.2 | nil |
| 31750W | 28/04/2014 | 6.72 | 5 | 4.4 | nil |
| 32400E | 28/04/2014 | 6.95 | 13 | 11.5 | nil |
| 30350E | 28/04/2014 | 6.55 | 16 | 14.2 | nil |
| 36750E | 28/04/2014 | 8.4 | 24 | 21.2 | nil |
| 34400E | 2/05/2014 | 6.94 | 12 | 10.6 | nil |
| 34100E | 2/05/2014 | 7.4 | 21 | 18.6 | nil |
| 35750W | 2/05/2014 | 7.22 | 11 | 9.7 | nil |
| 30250E | 5/05/2014 | 7.61 | 16 | 14.2 | nil |
| 30350E | 5/05/2014 | 7.5 | 23 | 20.4 | nil |

| Basin number | Release date | pH | Turbidity (NTU) | TSS Calculated from Ratio | Presence of Oils - Hydrocarbons |
|---|---|---|---|---|---|
| 30400W | 5/05/2014 | 6.87 | 13 | 11.5 | nil |
| 36850E | 9/05/2014 | 7.02 | 40 | 35.4 | nil |
| 30250E | 16/05/2014 | 7.24 | 23 | 20.4 | nil |
| 30350E | 16/05/2014 | 7.44 | 5 | 4.4 | nil |
| 30400W | 16/05/2014 | 6.75 | 5 | 4.4 | nil |
| 30800E | 16/05/2014 | 6.62 | 5 | 4.4 | nil |
| 30750E | 16/05/2014 | 6.73 | 9 | 8.0 | nil |
| 37350E | 23/05/2014 | 6.83 | 5 | 4.4 | nil |
| 35250E | 11/06/2014 | 6.79 | 10 | 8.8 | nil |
| 35750W | 11/06/2014 | 6.89 | 9 | 8.0 | nil |
| 30400W | 11/06/2014 | 6.85 | 13 | 11.5 | nil |
| 36850E | 4/06/2014 | 6.9 | 50 | 44.2 | nil |
| 38100E | 17/06/2014 | 6.62 | 25 | 22.1 | nil |
| 35750E | 17/06/2014 | 6.73 | 17 | 15.0 | nil |
| 36750E | 3/06/2014 | 6.93 | 35 | 31.0 | nil |
| 36850E | 1/07/2014 | 6.73 | 5 | 4.4 | nil |
| 30400W | 29/05/2014 | 8.13 | 9 | 8.0 | nil |
| 17400W | 21/08/2014 | 6.6 | 10 | 8.8 | nil |
| 17350E | 21/08/2014 | 6.6 | 15 | 13.3 | nil |
| 17350W | 21/08/2014 | 6.7 | 20 | 17.7 | nil |
| 26050W | 22/08/2014 | 6.5 | 10 | 8.8 | nil |
| 27550W | 21/08/2014 | 6.7 | 10 | 8.8 | nil |
| 21550W | 22/08/2014 | 6.9 | 40 | 35.4 | nil |
| 18950E | 21/08/2014 | 6.5 | 15 | 13.3 | nil |
| 18950W | 21/08/2014 | 6.8 | 10 | 8.8 | nil |
| 16350E | 19/08/2014 | 6.5 | 15 | 13.3 | nil |
| 15000W | 19/08/2014 | 6.6 | 10 | 8.8 | nil |
| 15500E | 19/08/2014 | 6.7 | 15 | 13.3 | nil |
| 16500E | 19/08/2014 | 6.6 | 15 | 13.3 | nil |
| 15400E | 19/08/2014 | 6.6 | 20 | 17.7 | nil |
| 24950W | 22/08/2014 | 6.5 | 30 | 26.5 | nil |
| 35200E | 19/08/2014 | 6.73 | 30 | 26.5 | nil |
| 31250W | 21/08/2014 | 8.11 | 45 | 39.8 | nil |
| 38100E | 21/08/2014 | 8.26 | 50 | 44.2 | nil |
| 30250E | 21/08/2014 | 7.11 | 45 | 39.8 | nil |
| 35250E | 20/08/2014 | 7 | 19 | 16.8 | nil |
| 35750E | 20/08/2014 | 7.82 | 50 | 44.2 | nil |
| 36750E | 20/08/2014 | 6.59 | 5 | 4.4 | nil |
| TB30400 | 19/08/2014 | 6.68 | 25 | 22.1 | nil |
| 30050E | 22/08/2014 | 6.69 | 5 | 4.4 | nil |
| 36750E | 29/08/2014 | 6.93 | 10 | 8.8 | nil |
| 36850E | 29/08/2014 | 6.84 | 50 | 44.2 | nil |
| 35250E | 29/08/2014 | 7.46 | 10 | 8.8 | nil |
| 35200E | 29/08/2014 | 6.94 | 50 | 44.2 | nil |
| 35200W | 29/08/2014 | 7.03 | 45 | 39.8 | nil |
| 35250W | 29/08/2014 | 7.11 | 50 | 44.2 | nil |
| 34400E | 29/08/2014 | 7.36 | 32 | 28.3 | nil |
| 34350E | 29/08/2014 | 6.94 | 35 | 31.0 | nil |

| Basin number | Release date | pH | Turbidity (NTU) | TSS Calculated from Ratio | Presence of Oils - Hydrocarbons |
|---|---|---|---|---|---|
| 32800E | 30/08/2014 | 7.1 | 35 | 31.0 | nil |
| 30050E | 30/08/2014 | 6.93 | 50 | 44.2 | nil |
| 35750E | 30/08/2014 | 6.93 | 40 | 35.4 | nil |
| 38100E | 1/09/2014 | 8.16 | 28 | 24.8 | nil |
| 38450E | 1/09/2014 | 7.36 | 17 | 15.0 | nil |
| 39400E | 1/09/2014 | 6.97 | 40 | 35.4 | nil |
| 38050E | 1/09/2014 | 6.76 | 28 | 24.8 | nil |
| 32400E | 2/09/2014 | 6.93 | 34 | 30.1 | nil |
| 31250W | 2/09/2014 | 7.36 | 25 | 22.1 | nil |
| 32700E | 2/09/2014 | 6.93 | 28 | 24.8 | nil |
| 35650E | 1/09/2014 | 8.04 | 21 | 18.6 | nil |
| 32450W | 1/09/2014 | 6.97 | 30 | 26.5 | nil |
| 30350E | 1/09/2014 | 6.82 | 23 | 20.4 | nil |
| 30250E | 1/09/2014 | 7.36 | 22 | 19.5 | nil |
| 30400W | 1/09/2014 | 6.96 | 14 | 12.4 | nil |
| 34100E | 1/09/2014 | 6.64 | 45 | 39.8 | nil |
| 34000W | 1/09/2014 | 6.55 | 35 | 31.0 | nil |
| 33950W | 1/09/2014 | 6.71 | 40 | 35.4 | nil |
| 33000E | 1/09/2014 | 7.04 | 30 | 26.5 | nil |
| 30750E | 1/09/2014 | 6.87 | 23 | 20.4 | nil |
| 31150E | 1/09/2014 | 7.21 | 10 | 8.8 | nil |
| 31650E | 1/09/2014 | 6.67 | 13 | 11.5 | nil |
| 31750W | 2/09/2014 | 7.31 | 10 | 8.8 | nil |
| 15500E | 29/08/2014 | 6.6 | 7.7 | 6.8 | nil |
| 16500E | 29/08/2014 | 6.8 | 50 | 44.2 | nil |
| 16350E | 29/08/2014 | 6.5 | 30 | 26.5 | nil |
| 18600E | 29/08/2014 | 6.8 | 28 | 24.8 | nil |
| 17350E | 29/08/2014 | 6.5 | 30 | 26.5 | nil |
| 14500E | 30/08/2014 | 8.2 | 5 | 4.4 | nil |
| 14900E | 30/08/2014 | 7.9 | 15 | 13.3 | nil |
| 15000E | 30/08/2014 | 8 | 20 | 17.7 | nil |
| 15000W | 30/08/2014 | 8.5 | 10 | 8.8 | nil |
| 15400E | 30/08/2014 | 7.5 | 28 | 24.8 | nil |
| 15450W | 30/08/2014 | 8 | 14 | 12.4 | nil |
| 17350E | 30/08/2014 | 6.7 | 52 | 46.0 | nil |
| 17400W | 2/09/2014 | 6.7 | 27 | 23.9 | nil |
| 17450E | 30/08/2014 | 7.1 | 52 | 46.0 | nil |
| 18950E | 1/09/2014 | 7.2 | 15 | 13.3 | nil |
| 18950W | 3/08/2014 | 8.2 | 15 | 13.3 | nil |
| 21550W | 30/08/2014 | 7.5 | 35 | 31.0 | nil |
| 21600W | 1/09/2014 | 7 | 32 | 28.3 | nil |
| 23800W | 1/09/2014 | 6.6 | 13 | 11.5 | nil |
| 23850E | 2/09/2014 | 6.8 | 28 | 24.8 | nil |
| 24950E | 2/09/2014 | 7.2 | 13 | 11.5 | nil |
| 24950W | 1/09/2014 | 8.3 | 10 | 8.8 | nil |
| 25550E | 2/09/2014 | 6.9 | 29 | 25.7 | nil |
| 26050W | 1/09/2014 | 6.8 | 15 | 13.3 | nil |
| 26650E | 1/09/2014 | 6.8 | 27 | 23.9 | nil |

| Basin number | Release date | pH | Turbidity (NTU) | TSS Calculated from Ratio | Presence of Oils - Hydrocarbons |
|---|---|---|---|---|---|
| 27550E | 1/09/2014 | 6.5 | 55 | 48.7 | nil |
| 27550W | 1/09/2014 | 6.5 | 30 | 26.5 | nil |
| 28100E | 1/09/2014 | 6.7 | 10 | 8.8 | nil |
| Basin 4 | 3/9/2014 | 6.55 | 36 | 31.9 | nil |

**RAINFALL DATA**

| March | Rainfall in 24hr period(millimetres) | | |
|---|---|---|---|
| | Northern Compound | Main Compound | Southern Compound |
| 1 | 0 | 0 | 0 |
| 2 | 65 | 55 | 42 |
| 3 | 0 | 0 | 1 |
| 4 | 3 | 4 | 2 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 |
| 7 | 1.5 | 0 | 0 |
| 8 | 0 | 0.8 | 0 |
| 9 | 2.5 | 0.6 | 6 |
| 10 | 0 | 7.8 | 0 |
| 11 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 |
| 16 | 9 | 5.6 | 2 |
| 17 | 0 | 0 | 0 |
| 18 | 0 | 1 | 0 |
| 19 | 0 | 0.2 | 0 |
| 20 | 0.8 | 5 | 1.4 |
| 21 | 30.8 | 17.8 | 18.4 |
| 22 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 |
| 24 | 0.2 | 0.2 | 0.2 |
| 25 | 3.6 | 1.6 | 0.4 |
| 26 | 16 | 13.4 | 10.4 |
| 27 | 28.2 | 17.4 | 22.4 |
| 28 | 30.4 | 27 | 16.8 |
| 29 | 0.2 | 0 | 0.2 |
| 30 | 0 | 0 | 2.4 |
| 31 | 0 | 0.6 | 1.4 |
| **Monthly Total** | **191.2** | **158** | **127** |

| April | Rainfall (millimetres) | | |
|---|---|---|---|
| | Northern Compound | Main Compound | Southern Compound |
| 1 | 0.2 | 0 | 0.8 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 4.4 | 0 |
| 4 | 4.4 | 21.4 | 2.8 |
| 5 | 19.8 | 0 | 32.0 |
| 6 | 0.2 | 0 | 0 |
| 7 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0.4 |
| 10 | 0 | 0 | 0 |
| 11 | 0.2 | 0 | 0 |
| 12 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 |
| 24 | 0 | 15.8 | 0 |
| 25 | 2.8 | 0 | 0 |
| 26 | 0 | 17.0 | 0 |
| 27 | 19.4 | 0 | 19.4 |
| 28 | 0 | 0.2 | 0.4 |
| 29 | 0 | 4.8 | 0 |
| 30 | 2.8 | 0.0 | 3.0 |
| Monthly Total | **49.8** | **63.6** | **58.8** |

| May | Rainfall (millimetres) | | |
|---|---|---|---|
| | Northern Compound | Main Compound | Southern Compound |
| 1 | 0.2 | 0 | 0 |
| 2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0.4 |
| 7 | 0 | 0 | 0.2 |
| 8 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 |
| 11 | 0 | 3.0 | 0.2 |
| 12 | 0.2 | 0 | 8.0 |
| 13 | 0.2 | 0.2 | 0.2 |
| 14 | 0.2 | 0 | 0 |
| 15 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 |
| 18 | 0 | 0.2 | 0 |
| 19 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 |
| 22 | 0 | 1.0 | 0 |
| 23 | 0 | 0 | 3.6 |
| 24 | 0.2 | 0 | 0 |
| 25 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 |
| 29 | 0 | 18.0 | 0 |
| 30 | 16.8 | 0.8 | 8.8 |
| 31 | 0.2 | 0.2 | 0.8 |
| **Monthly Total** | **18** | **23.4** | **22.2** |

| June | Rainfall (millimetres) | | |
|---|---|---|---|
| | Northern Compound | Main Compound | Southern Compound |
| 1 | 0.2 | 0 | 0.8 |
| 2 | 10.0 | 0 | 4.6 |
| 3 | 0 | 0 | 0.2 |
| 4 | 0.2 | 0.2 | 0 |
| 5 | 0 | 0 | 0.2 |
| 6 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 |
| 8 | 0 | 2.4 | 0 |
| 9 | 2.2 | 0.4 | 1.0 |
| 10 | 1.0 | 0 | 0.2 |
| 11 | 0 | 0 | 0 |
| 12 | 0.4 | 0.4 | 0 |
| 13 | 0.4 | 0.2 | 0.2 |
| 14 | 0.2 | 0 | 0.6 |
| 15 | 0.2 | 0 | 0 |
| 16 | 0 | 0 | 0 |
| 17 | 0 | 0.2 | 0 |
| 18 | 0 | 0 | 0 |
| 19 | 0.2 | 0 | 0 |
| 20 | 0 | 1.2 | 0.2 |
| 21 | 1.6 | 0 | 0.8 |
| 22 | 2.0 | 0.2 | 0 |
| 23 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 |
| 27 | 0 | 0.8 | 0 |
| 28 | 2.2 | 0 | 1.0 |
| 29 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 |
| Monthly Total | **20.8** | **6.0** | **9.8** |

| July | Rainfall in 24hr period(millimetres) | | |
|---|---|---|---|
| | Northern Compound | Main Compound | Southern Compound |
| 1 | | | |
| 2 | | | |
| 3 | | 0.2 | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | 3.2 | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | 0.2 | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | 3.6 | |
| 20 | 3.6 | 0.4 | 1.4 |
| 21 | 0.8 | 0.6 | 1.4 |
| 22 | 0.6 | | 1.4 |
| 23 | | | |
| 24 | | | |
| 25 | | 5.4 | |
| 26 | 5.4 | | 6.8 |
| 27 | 0.2 | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |
| 31 | | | |
| **Total Rainfall** | **14** | **10.2** | **11** |

| August | Rainfall in 24hr period(millimetres) | | |
|---|---|---|---|
| | Northern Compound | Main Compound | Southern Compound |
| 1/08/2014 | | | |
| 2/08/2014 | | | |
| 3/08/2014 | | | 0.2 |
| 4/08/2014 | | 2.4 | 0.2 |
| 5/08/2014 | | 0.2 | |
| 6/08/2014 | | | |
| 7/08/2014 | | | |
| 8/08/2014 | | 0.2 | |
| 9/08/2014 | | | |
| 10/08/2014 | | | |
| 11/08/2014 | | | |
| 12/08/2014 | | | |
| 13/08/2014 | 1.2 | 1.2 | 1.4 |
| 14/08/2014 | 0.2 | | 0.2 |
| 15/08/2014 | 0.2 | 0.2 | |
| 16/08/2014 | 28.6 | 34 | 31.6 |
| 17/08/2014 | 22.4 | 20.6 | 17.8 |
| 18/08/2014 | | | |
| 19/08/2014 | | | 0.2 |
| 20/08/2014 | 0.2 | | 0.2 |
| 21/08/2014 | 3.6 | | 0.2 |
| 22/08/2014 | 1.2 | 3.2 | 1.8 |
| 23/08/2014 | 20.2 | 13.4 | 15.4 |
| 24/08/2014 | 4.2 | 4.4 | 6 |
| 25/08/2014 | 0.2 | 0.2 | |
| 26/08/2014 | 27.6 | 23.6 | 26.6 |
| 27/08/2014 | 67.8 | 68.6 | 61 |
| 28/08/2014 | 8 | 2 | 9 |
| 29/08/2014 | 0.2 | 0.2 | |
| 30/08/2014 | | | |
| 31/08/2014 | | | |
| **Total Rainfall** | **185.8** | **174.4** | **171.8** |