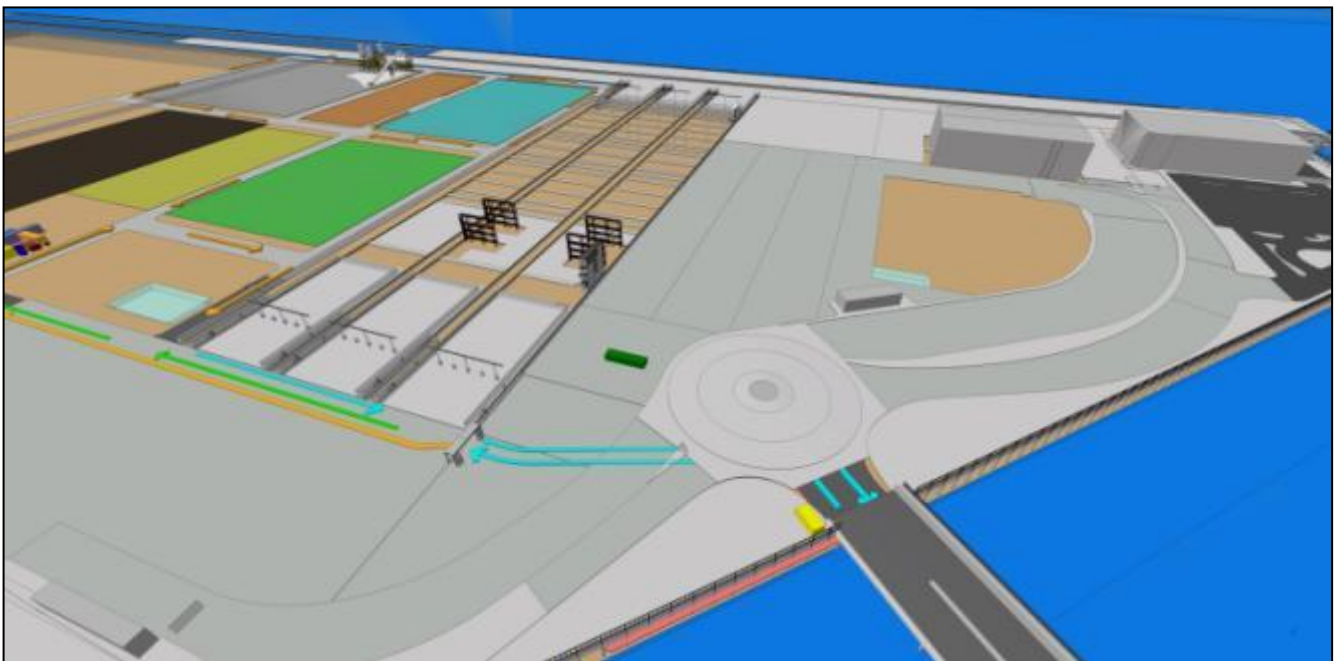


Sydney Port Botany Terminal 3

Monthly Environmental Monitoring Report

October 2013



| | |
|--------------------------|---------------|
| Client: | SICTL |
| Client's Representative: | Mott McDonald |
| LORA Contract No.: | G52 |

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1.0 Introduction

This report provides results for environmental monitoring activities associated with the Terminal 3 expansion at Port Botany for the month of October 2013.

Monitoring has been undertaken for dust, noise, water quality and shorebird observations.

No environmental complaints have been received by Laing O'Rourke this month in regards to the Terminal 3 construction works.

1.1 Construction Activities

Laing O'Rourke construction activities undertaken for the month of October 2013 included the following:

- Earthworks and ground improvements
- Drainage activities
- Services works
- Concrete batch plant and paving operations
- Noise wall installation and painting
- Landscaping

2.0 Dust Monitoring and Air Quality

Four dust deposition gauges are installed in the areas surrounding the Port Botany Expansion. Dust deposition results for October 2013 have yet to be received from our laboratory. September 2013 results are reported in Appendix 1. All results received for the deposition gauges are within EPA guidelines and Project criteria.

A real-time dust monitor has also been installed at the Botany Golf Club for reporting of PM₁₀ particulate matter. This monitor recorded 4 instances that the daily average project criterion of 50µg/m³ was exceeded during October 2013. These results are outlined below.

| Date | Terminal 3 PM ₁₀ Monitor (µg/m ³) |
|----------|--|
| 18/10/13 | 51 |
| 19/10/13 | 55 |
| 21/10/13 | 141 |
| 29/10/13 | 57 |

It is noted that the above range of dates falls within the period of high bushfire activity around Sydney and surrounding regions during October 2013. Poor air quality was observed across the state during this time with similar trends seen to those shown in this report. It was also seen on 21/10/13 that NSW Health authorities issued a public health warning due to poor air quality across the State; with Campbelltown and Camden the worst affected areas. With respect to the conditions encountered across NSW during this period, it is thought that the predominant source causing elevated PM₁₀ values is related to bushfire activity and the resulting smoke and air quality impacts.

With respect to the information above, Laing O'Rourke remain committed to the ongoing management of dust suppression across its Terminal 3 site. The majority of the site is now completed hard-stand area ready for operational purposes. In addition to dust mitigation measures already in place, a third water cart was brought to site during October and around 100,000 tonnes of stockpiled material is being removed for recycling offsite, reducing risk of dust emissions from the Terminal 3 construction area. A polymer 'spray sealant' has also been applied to material stockpiled on the Southern end of Terminal 3 site, forming a hard crust over the material and minimising wind erosion effects by stabilising the material. Further briefing of all project personnel of the importance of effective dust management will also be undertaken.

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There have been no dust complaints received by the project this month. Dust monitoring results are outlined in Appendix 1.

3.0 Noise Monitoring

Monthly construction noise monitoring was undertaken during October 2013. Noise monitoring locations have been based on noise-sensitive receptors in the project Environmental Impact Statement and approved for the Port Botany Expansion construction activities.

Attended noise measurements were carried out for a period of 15 minutes at each location. During the monitoring event, observations were made on the weather as well as the surrounding noise sources and environment.

3.1 Day time noise monitoring

Noise measurements were undertaken on 9th October 2013. Work activities being undertaken on the Terminal 3 project included ground improvements and earthworks, drainage and services activities, batch plant operation, paving, noise wall installation, landscaping and material deliveries.

The Interim Construction Noise Guideline (2009, DECCW) sets out management levels for noise at residences and how they are to be applied. This guideline has been used in conjunction with the project Environmental Impact Statement to determine noise goals for the project. Recorded LA_{eq} levels exceeded the noise goals for noise emissions from the Port Botany expansion Project at all 6 locations, however at each monitoring location extraneous, non-project related noises were the dominant noise sources. These noise sources included road traffic, both local and main, and aircraft noise. No Terminal 3 construction activities were audible at any monitoring locations.

It is noted that the intent of the Interim Construction Noise Guideline is to minimise noise impact from the construction works and is only applicable to the contribution of the noise from the Port Botany construction site. At the attended monitoring events, as has been noted on other stages of the Port Botany expansion project, the measured noise levels were controlled and dominated by other extraneous noise sources as listed above.

Noise monitoring results are shown in Appendix 2.

4.0 Soil and Water Quality Monitoring

Physical water parameters required to be monitored are pH, turbidity and visible oil and grease when dewatering activities are undertaken. Other contaminants may be tested for in areas of concern if the presence of contamination is observed.

4.1 Water Monitoring

Water monitoring has been undertaken during October for dewatering activities undertaken during drainage works. All dewatering results have been compliant with the discharge criteria set in the project Environmental Impact Statement. Dewatering results are summarised in Appendix 3.

5.0 Shorebird Monitoring

Shorebird observations were obtained this month. The noise wall is thought to be impeding views of Penrhyn Estuary from the Terminal 3 site and stopping shorebird observations. Shorebird observations from the Terminal 3 site during October 2013 are outlined in Appendix 4.

6.0 Environmental Inspections and Audits

Weekly environmental inspections have been undertaken during October 2013 for the Terminal 3 project site. Inspections have focused on dust suppression with dry conditions through the month. No significant environmental issues were observed or identified. Completed inspection sheets may be available on request.

7.0 Appendices

Appendix 1 – Dust Monitoring Results
Appendix 2 – Noise Monitoring Results
Appendix 3 – Water Monitoring Results
Appendix 4 – Terminal 3 Shorebird Observations

Appendix 1 – Dust Monitoring Results

Dust Deposition Gauge Results - September 2013

| No. | Monitoring Location | Ash | Combustible matter | Total Soluble matter | Total Insoluble matter | Total Solids | Sample ID (File Reference) | EPA Guideline (Total Insoluble matter) | Comments (i.e. any exceedances of EPA objectives) | Work Activities / Observations During Monitoring Period |
|-----|-----------------------|-----|--------------------|----------------------|------------------------|--------------|----------------------------|--|---|--|
| 1 | Upper Penrhyn Estuary | 1.2 | 0.5 | 1.4 | 1.7 | 3.1 | EN1303769-003 | 4 | Within EPA guideline levels | Earthworks Drainage works Deliveries Paving Concrete batch plant Structural works Utilities Noise wall install Landscaping |
| 2 | Joseph Banks Park | 0.8 | 0.4 | 1.6 | 1.2 | 2.8 | EN1303769-001 | 4 | Within EPA guideline levels | |
| 3 | Purcell Park | 1.9 | 0.5 | 1.1 | 2.4 | 3.5 | EN1303769-002 | 4 | Within EPA guideline levels | |
| 4 | Botany Golf Course | 1.1 | 0.5 | 2.5 | 1.6 | 4.1 | EN1303769-004 | 4 | Within EPA guideline levels | |

All Units in g/m².month

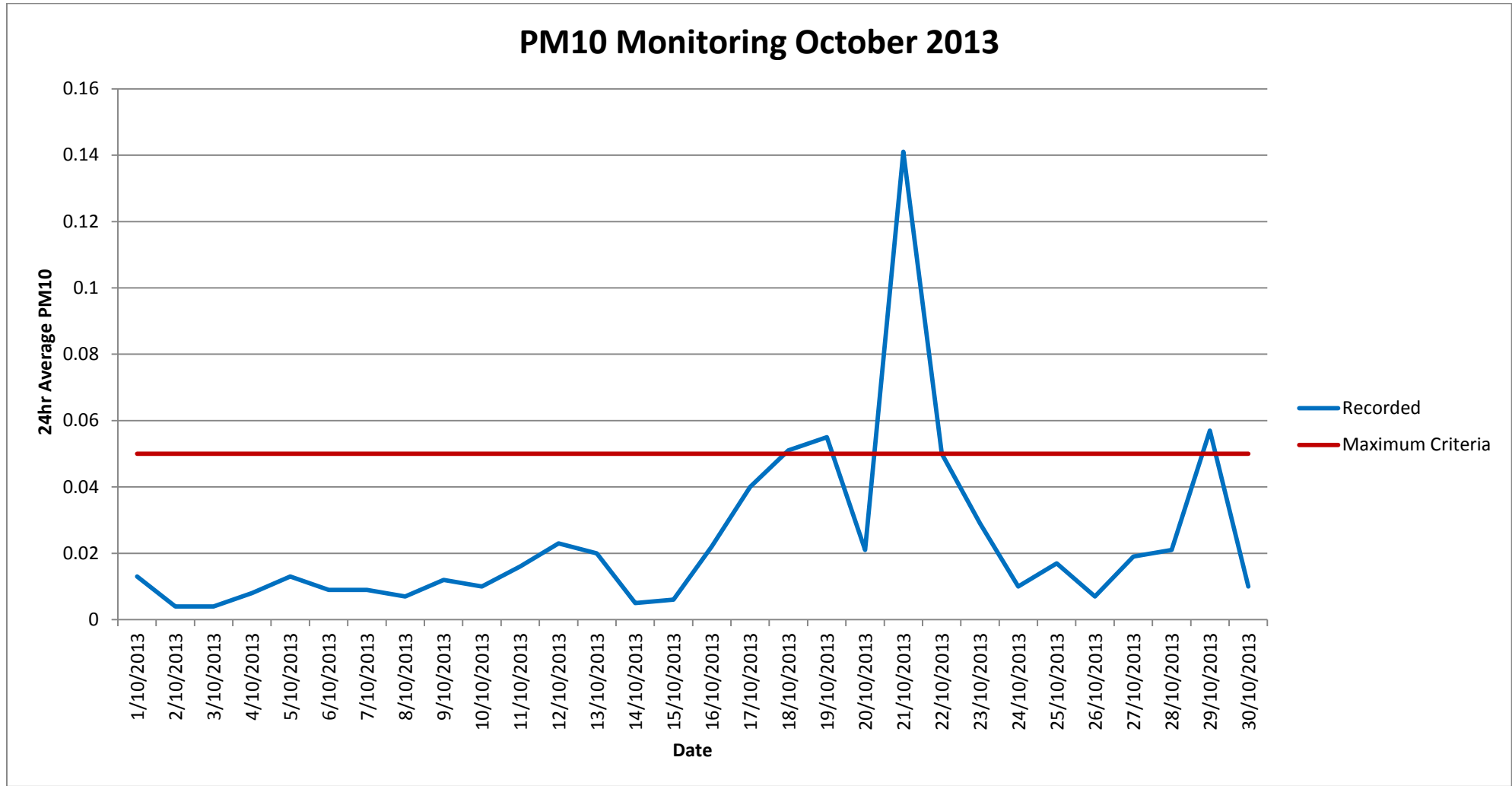
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Dust Monitoring Locations



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PM₁₀ Monitoring Results – October 2013



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Appendix 2 – Noise Monitoring Results

Day Monitoring

| Noise Monitoring Results - SPBT3 October 2013 | | | | | | | | | | | | | | | LAING O'ROURKE |
|---|---------------------|-----------|-------------------------------|--|--|--------------------|---------------------------|----------------------|-------------------------------------|--|--------------------------------|---------------------------------|--------------------------------|-----------------------------|---|
| Noise Sensitive Area | Monitoring Location | Date | Time (24hr) & Duration (mins) | Construction Activities | Standard or Out of Hours Works (Day/Evening/Night) | Weather Conditions | In Response to Complaint? | RBL (dBA) - from EIS | Noise Goal ¹ (RBL+ 5dBA) | Recorded Noise Level LAeq (15 min) (dBA) | Recorded Noise Level LA1 (dBA) | Recorded Noise Level LA10 (dBA) | Recorded Noise Level L90 (dBA) | Noise Goal Difference (dBA) | Comments |
| Location 1 - Chelmsford Avenue | 14 The Esplanade | 9/10/2013 | 10:30 | Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works | Standard Day | Fine | No | 49 | 54 | 66 | 72 | 66 | 55 | 12 | Noise from Foreshore Rd traffic, aircraft noise, local traffic, park noise. Terminal 3 construction inaudible |
| Location 2 - Dent Street | 34 Dent St | 9/10/2013 | 11:20 | Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works | Standard Day | Fine | No | 47 | 52 | 67 | 75 | 69 | 54 | 15 | Local traffic and foreshore road noise, aircraft noise, park noise. Terminal 3 construction inaudible |
| Location 3 - Jennings Street | 42 Jenning St | 9/10/2013 | 12:05 | Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works | Standard Day | Fine | No | 40 | 45 | 68 | 78 | 70 | 54 | 23 | Local traffic noise, aircraft noise. Terminal 3 construction inaudible |
| Location 4- North of Golf Course | 3 Anniversary Rd | 9/10/2013 | 10:50 | Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works | Standard Day | Fine | No | 57 | 62 | 63 | 66 | 64 | 61 | 1 | Local traffic noise, aircraft noise. Terminal 3 construction inaudible |
| Location 5- Australia Avenue | 74 Australia Ave | 9/10/2013 | 13:00 | Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works | Standard Day | Fine | No | 42 | 47 | 60 | 67 | 63 | 56 | 13 | Local/distant traffic noise, aircraft noise, local industry. Terminal 3 construction inaudible |
| Location 6- Military Road | 73 Wassell St | 9/10/2013 | 12:35 | Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works | Standard Day | Fine | No | 46 | 51 | 52 | 60 | 53 | 48 | 1 | Noise from Bunnerong Rd, Local traffic noise, local industry. Terminal 3 construction inaudible |

Note 1: Noise goals are applicable to the noise contribution from the Terminal 3 Port Botany Expansion related construction activities only

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Noise Monitoring Locations



| Location 1 | Location 2 | Location 3 | Location 4 | Location 5 | Location 6 |
|------------------|------------|----------------|------------------|------------------|---------------|
| 14 The Esplanade | 34 Dent St | 42 Jennings St | 3 Anniversary Rd | 74 Australia Ave | 73 Wassell St |

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Appendix 3 – October 2013 Terminal 3 Water Monitoring Results

| Dewatering Location | Date | AM/PM | Meets Criteria | Discharge Location | Oil and Grease (visual) | Horiba Water Monitor | |
|----------------------|--------|-------|----------------|--------------------|-------------------------|----------------------|-----------|
| | | | | | | pH | Turbidity |
| SC07 | 1-Oct | AM | Yes | Bay - SC07 | No | 7.2 | 3.6 |
| SC07 | 1-Oct | PM | Yes | Bay - SC07 | No | 7.1 | 3.2 |
| SC07 | 2-Oct | AM | Yes | Bay - SC07 | No | 7.3 | 4.5 |
| SC07 | 2-Oct | PM | Yes | Bay - SC07 | No | 7.3 | 2.1 |
| SC07 | 3-Oct | AM | Yes | Bay - SC07 | No | 7.2 | 3.8 |
| SC07 | 3-Oct | PM | Yes | Bay - SC07 | No | 7.0 | 3.6 |
| SC07 | 4-Oct | AM | Yes | Bay - SC07 | No | 7.1 | 4.5 |
| SC07 | 4-Oct | PM | Yes | Bay - SC07 | No | 7.4 | 2.7 |
| SC07 | 7-Oct | AM | Yes | Bay - SC07 | No | 7.3 | 1.8 |
| SC07 | 7-Oct | PM | Yes | Bay - SC07 | No | 7.4 | 3.9 |
| SC07 | 8-Oct | AM | Yes | Bay - SC07 | No | 7.3 | 4.8 |
| SC07 | 8-Oct | PM | Yes | Bay - SC07 | No | 7.2 | 1.0 |
| SC07 | 9-Oct | AM | Yes | Bay - SC07 | No | 7.2 | 4.6 |
| SC07 | 9-Oct | PM | Yes | Bay - SC07 | No | 7.5 | 3.8 |
| SC07 | 10-Oct | AM | Yes | Bay - SC07 | No | 7.2 | 0.9 |
| SC07 | 11-Oct | PM | Yes | Bay - SC07 | No | 7.1 | 4.6 |
| SC07 | 14-Oct | AM | Yes | Bay - SC07 | No | 6.9 | 5.2 |
| SC07 | 14-Oct | PM | Yes | Bay - SC07 | No | 7.0 | 5.6 |
| SC07 | 15-Oct | AM | Yes | Bay - SC07 | No | 7.4 | 4.8 |
| SC07 | 15-Oct | PM | Yes | Bay - SC07 | No | 7.0 | 3.9 |
| SC07 | 16-Oct | AM | Yes | Bay - SC07 | No | 7.5 | 7.6 |
| | | | | | | | |
| Bay - SC07 | 2-Oct | AM | N/A | N/A | No | 7.3 | 1.2 |
| Bay - SC07 | 7-Oct | AM | N/A | N/A | No | 7.4 | 0.9 |
| Bay - SC07 | 14-Oct | AM | N/A | N/A | No | 7.3 | 1.1 |
| | | | | | | | |
| SC15 | 30-Oct | AM | Yes | Estuary - SC15 | No | 7.9 | 19.8 |
| SC15 | 30-Oct | PM | Yes | Estuary - SC15 | No | 8.1 | 12.3 |
| | | | | | | | |
| SC12 - SQID Cleanout | 22-Oct | AM | Yes | Estuary - SC12 | No | 8.2 | 19.6 |

Appendix 4 – October 2013 Terminal 3 Shorebird Observations

| Date | Bird Type | Location | Reported by | Action |
|------------|--------------------------|---------------------------------|-------------|--|
| 21/10/2013 | 2 x Pied Oyster Catchers | Penrhyn Estuary - adjacent SC14 | J Ambler | No action required, not within work area, no threat to birds |
| 21/10/2013 | 4 x Little Terns | Penrhyn Estuary - adjacent SC14 | J Ambler | No action required, not within work area, no threat to birds |