

ROOTY HILL REGIONAL DISTRIBUTION CENTRE  
MONTHLY ENVIRONMENTAL MONITORING REPORT

Aspect	Air Quality, Construction Noise and Meteorology
Date	January 2015

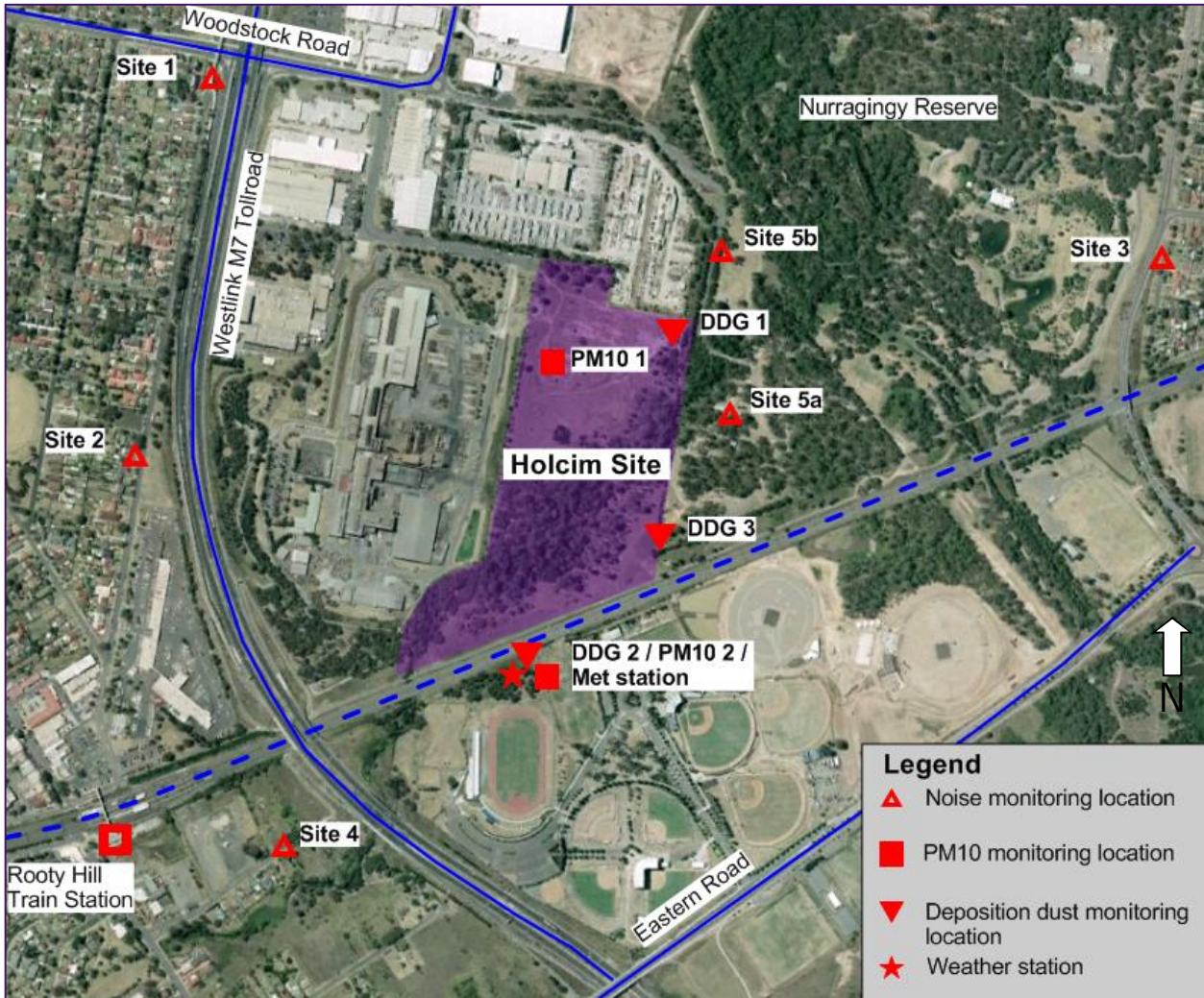
SUMMARY

Monitoring period	1 January to 31 January 2015
Parameters monitored in period	Dust (PM <sub>10</sub> ) / TSP Depositional Dust Construction Noise Local Meteorology
Exceedance summary	<ul style="list-style-type: none"> <li>▪ No exceedances of PM<sub>10</sub> criteria were recorded during January 2015.</li> <li>▪ Depositional dust levels at all locations were below 4 g/m<sup>2</sup>/month, and annual averages at all three monitoring sites remain below criteria.</li> <li>▪ No attributable exceedances of the construction noise management levels were recorded in January 2015.</li> </ul>
Action required	None

### 1. Monitoring Locations

The monitoring locations at the Rooty Hill Regional Distribution Centre (RDC) for air quality, construction noise and meteorology are shown in Figure 1 and consist of:

- Dust monitoring (PM<sub>10</sub>): Blacktown International Sportspark (formally Olympic Park)  
Holcim Site offices
- Dust monitoring (Depositional): Locations 1 to 3
- Noise monitoring: Locations 1 to 5b
- Meteorology: Blacktown International Sportspark (formally Olympic Park)



■ Figure 1 Monitoring locations

## 2. Monitoring Methodology

### Dust

Air quality (dust) monitoring was undertaken using two Ecotech High Volume Air Samplers (HVAS) 3000 with a Particulate Matter - 10µm (PM<sub>10</sub>) sampling heads. The HVASs were operated on one-day-in-six in accordance with *AS/NZS 3580.9.6:2003 Methods for sampling and analysis of ambient air, Method 9.6: Determination of suspended particulate matter (PM10) – High volume sampler with size selective inlet - Gravimetric method*.

Calibration of the unit is checked on a monthly basis, in accordance with operating instructions for the unit and *AS/NZS 3580.9.6:2003*.

TSP will not be directly monitored, and instead will be calculated by application of a conversion factor (PM<sub>10</sub> x 2.5 = TSP), in accordance with the site Operational Monitoring Plan.

Depositional dust was monitored in accordance with *AS/NZS 3580.10.1:2003 Methods for sampling and analysis of ambient air Method 10.1: Determination of particulate matter – Deposited matter – Gravimetric method*.

### *Construction Noise*

Construction noise was monitored for 15 minute attended periods in accordance with the requirements set out in the EPA (2000) Industrial Noise Policy and the DECC (2009) Interim Construction Noise Guidelines (ICNG). Monitoring was carried out using a SVAN 858 Type 1 Sound Level Meter by appropriately qualified personnel. Calibration of the unit was checked before and after each monitoring period, and the drift was below 0.5dB.

### *Local Meteorology*

Meteorological conditions were monitored using a Davis Vantage Pro2 Plus monitoring unit. This unit was positioned in accordance with *AS2923-1987 Ambient air – Guide for measurement of horizontal wind for air quality applications*.

The Davis Vantage Pro2 plus meteorological station does not satisfy the accuracy requirements of AS 3580.14-2011 for wind speed and direction measurements. However, no monitoring standards are specified in the Project Approval and the accuracy of the proposed unit is considered sufficient for the purposes of construction impact management.

The integrity of the meteorological monitoring station is checked every six days.

## 3. Guidelines

### *Air Quality*

Air quality (dust) criteria within the Project Conditions of Approval, specifically Statement of Commitment (SoC) 4.1 and the Construction Dust Management Plan (CDMP) mirror those in the NSW EPA document *Approved methods for the modelling and assessment of air pollutants in New South Wales* (DEC 2005). The air quality assessment criteria are outlined in Table 1, which apply cumulatively (that is, due to all sources of emissions and not just the contribution from the project).

#### ■ **Table 1 Air Quality Criteria**

Pollutant	Averaging period	Concentration
PM <sub>10</sub>	24 hours	50ug/m <sup>3</sup>
	Annual	30ug/m <sup>3</sup>
TSP	Annual	90ug/m <sup>3</sup>
Deposited dust	Annual	4 g/m <sup>2</sup> /month*

\* *Depositional dust criteria contained in the NSW EPA methods specify a maximum contribution of 2g/m<sup>2</sup>/month, up to a maximum total depositional dust level of 4g/m<sup>2</sup>/month. This criterion assumes a typical existing load of 2g/m<sup>2</sup>/month, prior to the start of construction activities.*

TSP will not be directly monitored, and instead will be calculated by application of a conversion factor (PM<sub>10</sub> x 2.5 = TSP), in accordance with the site Operational Environmental Monitoring Plan.

### Construction Noise

The Noise Management Levels (NML) for construction of the Rooty Hill RDC are provided in Table 2. These are based on the requirements of the ICNG, Ministers Condition of Approval (MCoA) 2.2 and the measured background levels.

■ **Table 2 Construction Noise Management Levels**

Receiver		Receiver Type	Approximate Distance and Orientation from RDC boundary	NML LAeq,15min / dB(A)
1	132 Station Street	Residential	650m west	58
2	54 Station Street	Residential	650m west	58
3	63 Coghlan Street	Residential	850m east	58
4	16 Mavis Street	Residential	650m west	63
5a	Lomandra Shelter Shed (Nurragingy Reserve)	Recreational	<100m east	60
5b	Boronia Shelter Shed (Nurragingy Reserve)	Recreational	<100m east	60

A construction noise impact assessment undertaken for the Construction Noise Management Plan (CNMP) predicts no exceedance of the NMLs at residential receivers throughout the construction program. Within the reserve, occasional exceedances are anticipated such as during earthworks; vegetation clearing; and installation of building structures and equipment.

Previous monthly monitoring reports have assessed compliance with MCoA 2.3. Jacobs has completed a detailed review of this MCoA alongside the CNMP approved under MCoA 5.3(b) and concluded that MCoA 2.3 is related to the operational phase and does not need to be assessed from a compliance perspective during the construction phase. The NMLs and noise predictions in the CNMP are a more accurate indication of the likely impacts from Stage 2 construction works.

### Meteorology

SoC 3.3, 10.4 and 15.3 requires Holcim monitor local meteorological conditions at the site. To comply with the SoC the following parameters must be monitored:

- Daily air temperature
- Solar radiation
- Daylight hours
- Daily rainfall
- Daily evaporation
- Continuous wind speed and direction

#### 4. Monitoring results

##### *Air Quality*

##### *PM<sub>10</sub> / TSP*

**No exceedences of PM<sub>10</sub>, 24-hour criteria were detected during January 2015.** During the first week of January the site was closed for the Christmas break, and as such no monitoring was carried out. Monitoring restarted on the 7 January 2015.

##### ■ **Table 3 HVAS Unit 1 (BSC) January 2015 PM<sub>10</sub> and TSP Results**

Date	PM <sub>10</sub> (ug/m <sup>3</sup> )		TSP	
	Measured result	Criteria	Calculated result (PM <sub>10</sub> x 2.5)	Criteria
01/01/2015	Site closed – HVAS did not run			
07/01/2015	14.1	50	35.3	NA
13/01/2015	12.1	50	30.3	NA
19/01/2015	19.5	50	48.8	NA
25/01/2015	15.7	50	39.3	NA
31/01/2015	11.5	50	28.8	NA
Annual average (to date)	22.1		55.2	

##### ■ **Table 4 HVAS Unit 2 (Site office) January 2015 PM<sub>10</sub> and TSP Results**

Date	PM <sub>10</sub> (ug/m <sup>3</sup> )		TSP	
	Measured result	Criteria	Calculated result (PM <sub>10</sub> x 2.5)	Criteria
01/01/2015	Site closed – HVAS did not run			
07/01/2015	9.8	50	24.5	NA
13/01/2015	17.1	50	42.8	NA
19/01/2015	24.8	50	62.0	NA
25/01/2015	23.8	50	59.5	NA
31/01/2015	15.0	50	37.5	NA
Annual average (to date)	27.4		68.6	

##### *Depositional Dust*

Depositional dust levels at all three locations were below 4 g/m<sup>2</sup>/month, and annual averages for all three DDG's remain below criteria

■ **Table 5 Depositional Dust Gauge Results January 2015**

Total Insoluble Matter (g/m <sup>2</sup> /month)				Goal (annual average)
Location	1	2	3	
05/01/2015 – 03/02/2015	1.0	0.9	1.3	N/A
Annual average	2.1	2.5	1.7	4 g /m <sup>2</sup> /month

*Construction Noise*

No attributable exceedences of construction noise management levels were observed during January 2015 monitoring.

Noise was only audible from the Site at locations 5a and 5b, which was primarily due to excavation of rock material in the northern areas of the site.

The results of attended construction noise monitoring are presented in Table 6.

■ **Table 6 Construction Noise Monitoring Results**

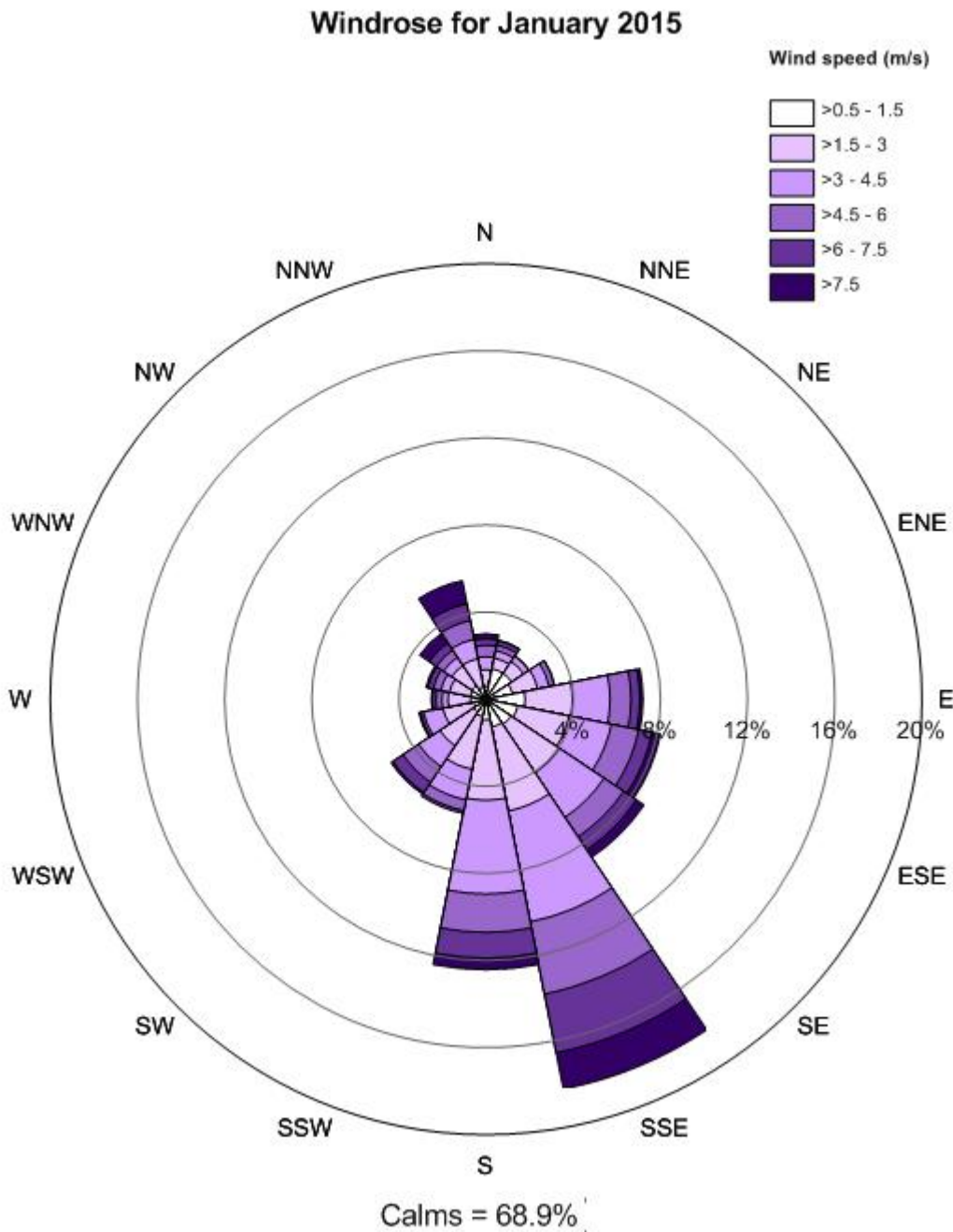
Location	Start	Construction contribution L <sub>Aeq</sub>	L <sub>Aeq</sub>	L <sub>A10</sub>	L <sub>A90</sub>	NML L <sub>Aeq,15</sub> min / dB(A)	Notes
1 (132 Station St)	13:45	IA*	57	60	50	58	Holcim inaudible. Traffic along M7 and M7 off-ramp dominant noise source [typically 45-55dB(A)].
2 (54 Station St)	14:05	IA*	54	56	49	58	Holcim inaudible. M7 dominant noise source [typically 50-55dB(A)] and local traffic along Station St [up to 65 dB(A)].
3 (63 Coghlan St)	11:40	IA*	62	65	50	58	Holcim inaudible. Traffic along Knox Rd dominant noise source [typically 50-60dB(A)].
4 (16 Mavis St)	14:30	IA*	52	53	48	63	Holcim inaudible. M7 traffic dominant noise source [50-55dBA].
5a (Lomandra Shelter Shed [Nurragingy Reserve])	12:05	45	49	53	41	60	Holcim audible (light vehicles, ratchet [51dB(A)], occasional beepers [44] and oxy work [47])
5b (Boronia Shelter Shed [Nurragingy Reserve])	12:30	50	50	50	42	60	Holcim audible (Excavating [45-55], occasional beeper), birds, other industries and local traffic other dominant noise sources.

\*IA - Inaudible

### Local Meteorology

A wind rose showing the proportion of direction and strength of winds throughout the reporting period is below. A complete data set, including, humidity, temperature and rainfall is provided separately.

The wind rose shows that industrial receivers to the north and northwest of the site were the most likely to be impacted by construction generated dust.



■ Figure 2 January 2015 Windrose, Blacktown International Sportspark Meteorological station