

ROOTY HILL REGIONAL DISTRIBUTION CENTRE

Aspect Air Quality, Construction Noise and Meteorology

Date January 2014

SUMMARY

Monitoring period 1 January to 31 January

Parameters monitored in period
 Dust (PM₁₀) / TSP
 Depositional Dust
 Construction Noise
 Local Meteorology

Exceedance summary

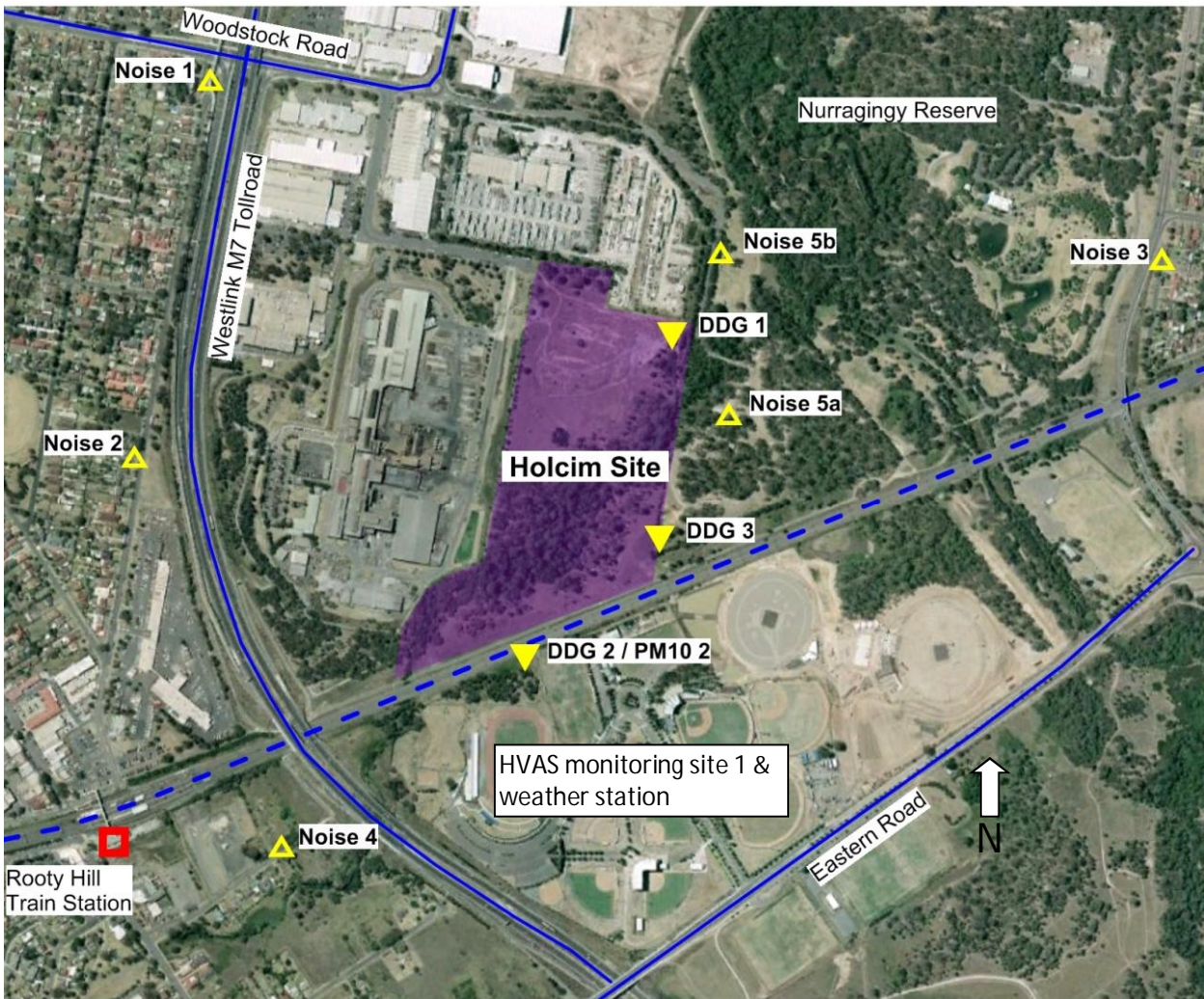
- No exceedances of PM₁₀ or TSP dust criteria were recorded during January 2014.
- No exceedances of depositional dust criteria were recorded during January 2014.
- No exceedances of the construction noise management levels were recorded in January 2014.

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 (PM₁₀): Blacktown International Sportspark (formally Olympic Park)
- Dust monitoring (Depositional): Locations DDG 1 to DDG 3
- Noise monitoring: Locations Noise 1 to Noise 5
- Meteorology: Blacktown International Sportspark (formally Olympic Park)



■ Figure 1 Monitoring locations

2. Monitoring Methodology

Dust

Air quality (dust) monitoring was undertaken using an Ecotech High Volume Air Sampler (HVAS) 3000 with a Particulate Matter - 10 μ m (PM₁₀) sampling head. The HVAS was 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 (PM₁₀ 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 ₁₀	24 hours	50ug/m ³
	Annual	30ug/m ³
TSP	Annual	90ug/m ³
Deposited dust	Annual	4 g/m ² /month*

* *Depositional dust criteria contained in the NSW EPA methods specify a maximum contribution of 2g/m²/month, up to a maximum total depositional dust level of 4g/m²/month. This criterion assumes a typical existing load of 2g/m²/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 (PM₁₀ 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. SKM 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 - PM₁₀ / TSP

No exceedances of PM₁₀ or TSP dust criteria were recorded during the month of January 2014.

■ **Table 3 January PM₁₀ and TSP Results**

Date	PM ₁₀ (ug/m ³)		TSP	
	Measured result	Criteria	Calculated result (PM10 x 2.5)	Criteria
6/01/2014	26.4	50	66.0	NA
12/01/2014	22.7	50	56.8	NA
18/01/2014	22.4	50	56.0	NA
24/01/2014	17.1	50	42.8	NA
30/01/2014	18.6	50	46.5	NA
Annual average (to date)	23.7	30	59.3	90

Air Quality - Depositional Dust

No exceedances of depositional dust criteria were recorded during the month of January 2014.

■ **Table 4 Depositional Dust Gauge Results January 2014**

Location	Total Insoluble Matter (g/m ² /month)			Goal (annual average)
	1	2	3	
27/12/2013 – 31/01/2014	1.8	2.6	1.1	N/A
Annual average	2.6	2.0**	2.3	4 g /m ² /month

** Average does not include erroneous result obtained on 31/10/2013.

Construction Noise

No exceedances of construction noise management levels were observed during January 2014.

The results of attended construction noise monitoring are presented in Table 5.

■ **Table 5 Construction Noise Monitoring Results**

Location	Time	Construction contribution	L _{Aeq}	L _{A10}	L _{A90}	NML L _{Aeq,15min}	Notes
1 (132 Station St)	10:05	Inaudible	59	63	53	58	Holcim inaudible, M7 (constant 60-70), Woodstock avenue (55-65)
2 (54 Station St)	9:45	Inaudible	62	62	53	58	Holcim inaudible, M7 (constant 55-60), local traffic (65-70), birds
3 (63 Coghlan St)	9:00	Inaudible	61	62	52	58	Holcim inaudible, Knox Rd traffic (constant 55-65), birds, nearby roadworks
4 (16 Mavis St)	9:25	Inaudible	58	62	53	63	Holcim inaudible, M7 (constant 55-60), birds / insects
5a (Lomandra Shelter Shed [Nurragingy Reserve])	10:35	~45 L _{Aeq}	51	53	48	60	Holcim (backhoe 50-55 for 1-2 minute period only), train, birds / insects
5b (Boronia Shelter Shed [Nurragingy Reserve])	10:55	Inaudible	53	53	47	60	Holcim inaudible, Hume industrial area (45-55)

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 areas to the north and north west of the site were the most likely to be impacted by construction generated dust. This area includes the industrial areas on Kellogg.

