ROOTY HILL REGIONAL DISTRIBUTION CENTRE

MONTHLY ENVIRONMENTAL MONITORING REPORT

Aspect	Air Quality, Construction Noise and Meteorology
Date	November 2013

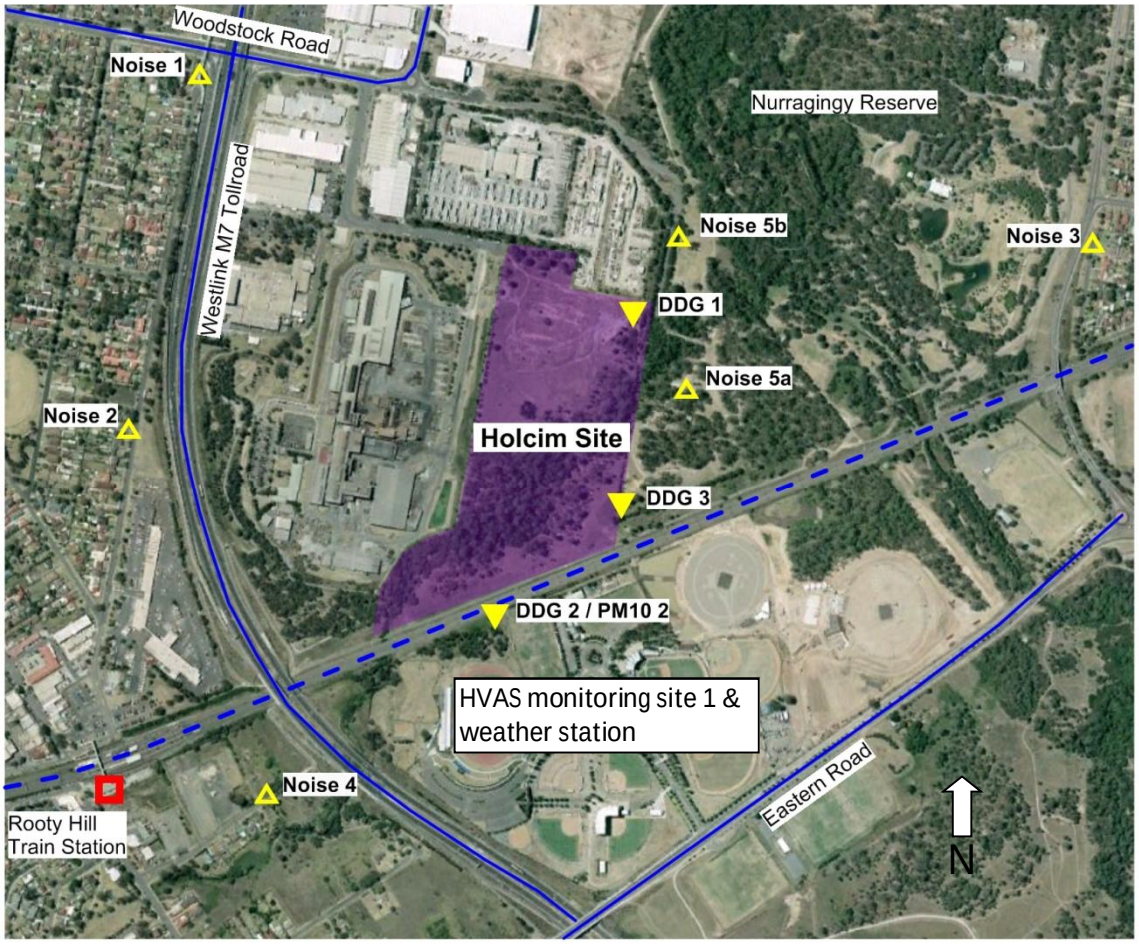
SUMMARY

Monitoring period	1 November 2013 to 30 November 2013
Parameters monitored in period	Dust (PM_{10}) / TSP Depositional Dust Construction Noise Local Meteorology
Exceedance summary	▪ No exceedances of PM_{10} or TSP dust criteria were recorded during November 2013. ▪ No exceedances of depositional dust criteria were recorded during November 2013. ▪ No exceedances of the construction noise management levels were recorded in November 2013.
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_{10}): Blacktown International Sportspark (formally Olympic Park)
- Dust monitoring (Depositional): Locations 1 to 3
- Noise monitoring: Locations 2 to 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 - 10µm (PM_{10}) 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 or 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/m^2/month, up to a maximum total depositional dust level of 4g/m^2/month. This criterion assumes a typical existing load of 2g/m^2/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_{10} 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

PM_{10} / TSP

No exceedances of PM_{10} or TSP dust criteria were recorded during the month of November 2013 (refer Table 3**).**

PM_{10} dust levels on the 7 November 2013 were greater than the project criteria, however during work hours on this day, wind levels were low (55% calm, 40% < 1.5m/s) and were from the south east more than 90% of the time (refer Appendix A). Given that the work site is north of the PM_{10} monitoring location (refer Figure 1), it is unlikely that the recorded dust originated on the Holcim site. It is possible that lawn mowing of the adjacent soccer fields or other activities at the Blacktown Sports Centre may have affected this reading.

- **Table 3 November PM_{10} and TSP Results**

Date	PM_{10} (ug/m^3)		TSP	
	Measured result	Criteria	Calculated result (PM10 x 2.5)	Criteria
1/11/2013	22.7	50	56.8	NA
7/11/2013	65.2	50	163.0	NA
13/11/2013	18.5	50	46.3	NA
19/11/2013	10.6	50	26.5	NA
25/11/2013	16.6	50	41.5	NA
Annual average (to date)	25.5	30	63.8	90

Depositional Dust

No exceedances of depositional dust criteria were recorded during the month of November 2013.

Clearing and earthworks activities, exceptionally dry conditions and moderately high winds which took place during November contributed to the higher dust levels at Location 1 (refer Table 4). It is understood that the scale of earthworks has now reduced.

To minimise the potential for dust emissions during earthworks a total of three water carts were in operation on site while construction works were being carried out. Two were operating on the north side of Angus Creek and one on the south side watering haul roads and exposed stockpile areas. On days of high winds, works were restricted to compaction activities while topsoil stripping and other high dust generating activities were undertaken on days with calm conditions.

- **Table 4 Depositional Dust Gauge Results November 2013**

Total Insoluble Matter (g/m^2/month)				Goal (annual average)
Location	1	2	3	
31/10/2013 – 28/11/2013	4.3	2.6	1.9	N/A
Annual average	2.5	2.6**	1.9	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 November 2013.

All monitoring results are below the construction noise management levels provided in the CNMP. At the time of noise monitoring, earthworks were being carried out along the rail turnout in the south eastern corner of the site.

Noise controls implemented during the monitoring period included respite periods for noisy equipment such as excavators, graders and dozers; ensuring all plant on site was in a good state of repair and regularly maintained through mandatory plant and equipment inspection and pre-start checks; and using plant with lower noise levels when the same activity could be undertaken with a similar level of efficiency.

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

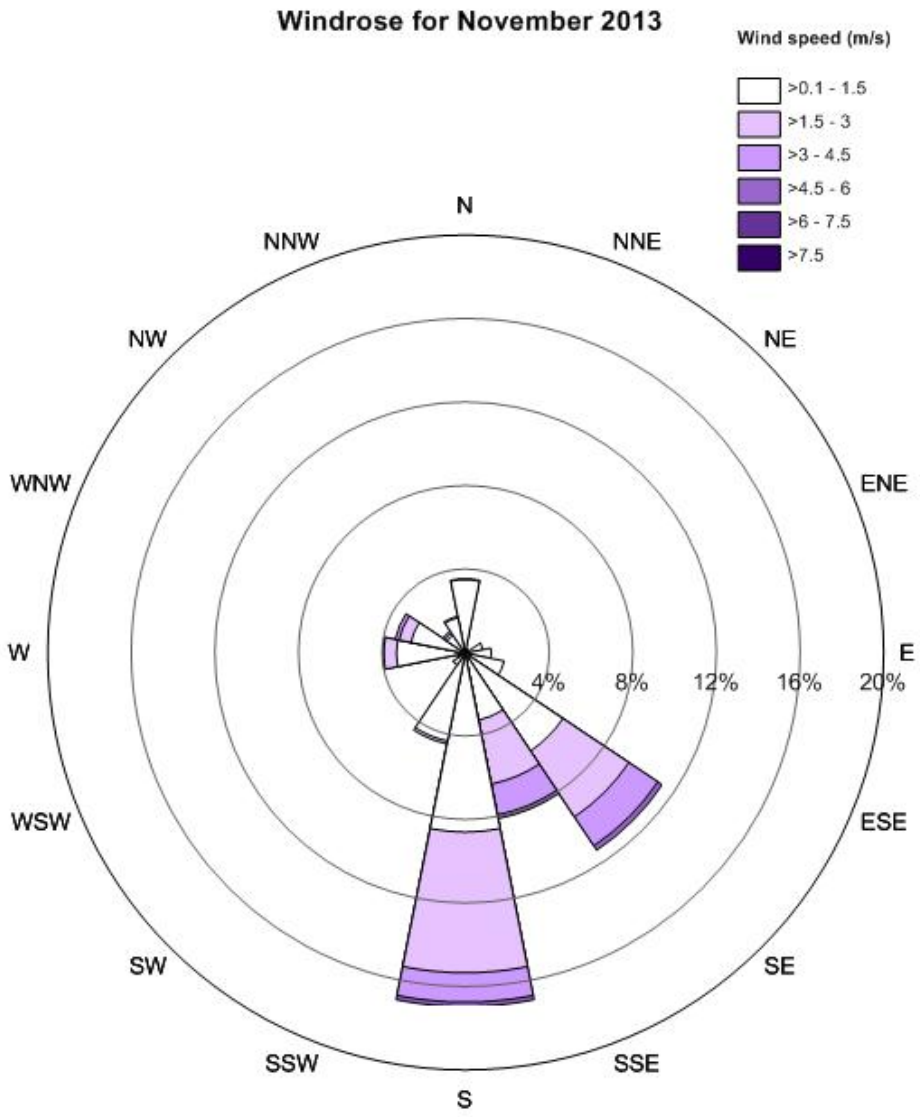
- **Table 5 Construction Noise Monitoring Results**

Location	Start	Construction contribution L_{Aeq}	L_{Aeq}	L_{A10}	L_{A90}	ML LAeq,15min / dB(A)	Notes
1 (132 Station St)	13:40	Inaudible	54	57	47	58	Holcim inaudible, M7 (constant 50-60), birds
2 (54 Station St)	13:20	Inaudible	54	56	50	58	Holcim inaudible, M7 (constant 55-65), local traffic (50-60), birds
3 (63 Coghlan St)	14:40	Inaudible	57	60	50	58	Holcim inaudible, Knox Rd traffic (constant 55-65), birds
4 (16 Mavis St)	13:00	Inaudible	56	58	51	63	Holcim inaudible, M7 (constant 55-65), birds
5a (Lomandra Shelter Shed [Nurragingy Reserve])	14:20	<35	50	54	41	60	Holcim (occasional excavator <35), planes, trains, local traffic (60-70)
5b (Boronia Shelter Shed [Nurragingy Reserve])	14:00	Inaudible	46	47	42	60	Holcim inaudible, Knox Road (<40), cicadas, birds

Local Meteorology

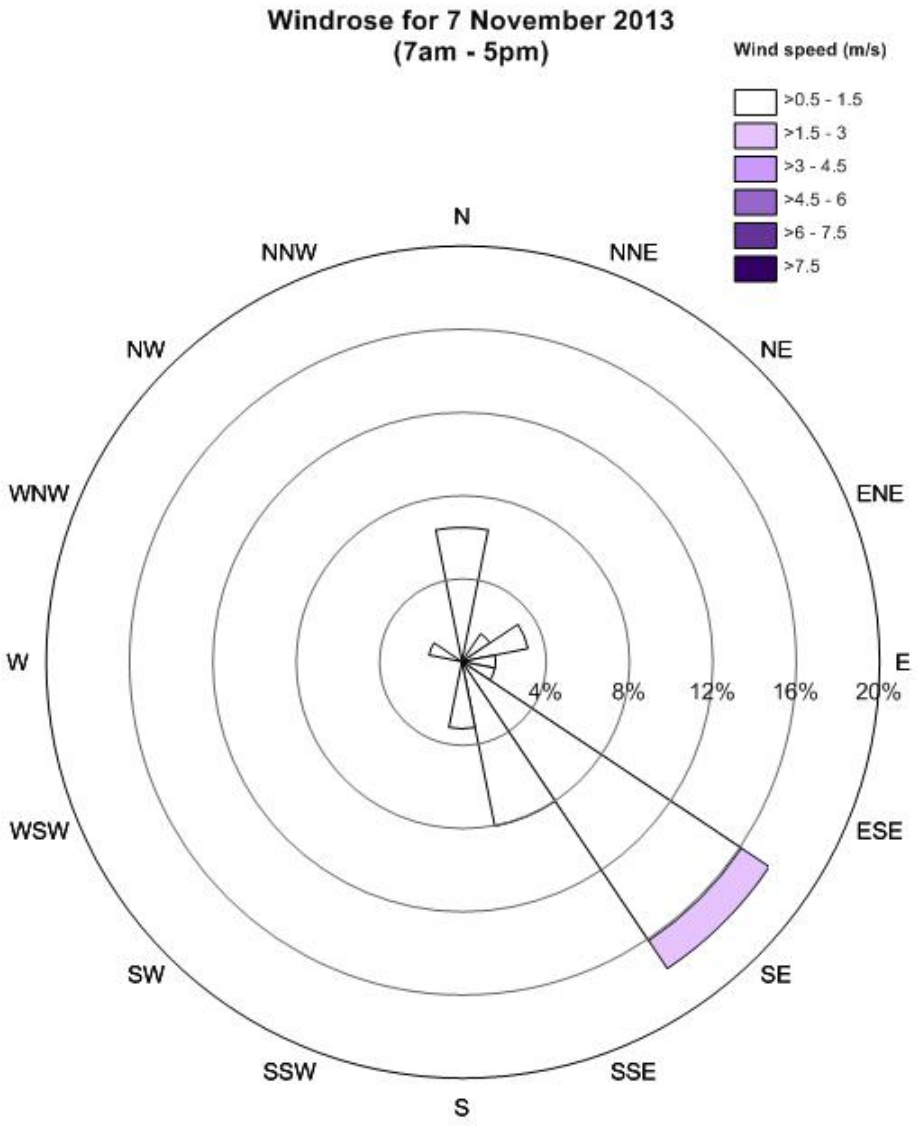
A wind rose showing the proportion of direction and strength of winds throughout the reporting period is below. A complete data set, including, humidity, temperature and rainfall is provided separately.

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.



Calms = 39.7%

Appendix A – Wind rose for 7 November 2013



Calms = 54.8%