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DEXUS Wholesale Management Limited
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Dear Sir

Re: Quarry WEST Project, DEXUS Estate - Air Quality Assessment

DEXUS Wholesale Management Limited (DEXUS), is proposing to develop an industrial and business park on a 26 hectare portion of the Greystanes Southern Employment Lands (Greystanes SEL), within the former Prospect Quarry at Pemulwuy.

In November 2009, the Minister for Planning approved a proposal from DEXUS for the development of an industrial park on the eastern portion of the Greystanes SEL. That project – then known as the DEXUS Estate Industrial Park Project and now known as QuarryEAST – involves the development of a world class industrial park, including:

- subdivision of the 47 hectare site;
- construction of internal estate roads and site services;
- detailed earthworks; and
- construction and use of industrial facilities (mainly warehousing and distribution centres) across the site.

DEXUS purchased the western portion of the industrial and business precinct of the Greystanes SEL from Boral Limited. It is now proposing to develop this western half – known as QuarryWEST – in a similar manner as the successful development of QuarryEAST, including a world-class 'logistics campus' over a large portion of the site. The QuarryWEST project has been designed in a manner that is generally consistent with the Greystanes SEL concept plan and the QuarryEAST project, and involves:

- subdivision of the 26 hectare site;
- construction of internal estate roads and site services;
- bulk and detailed earthworks; and
- construction and use of industrial (warehousing and distribution centres) and business facilities (retail facilities) across the site.

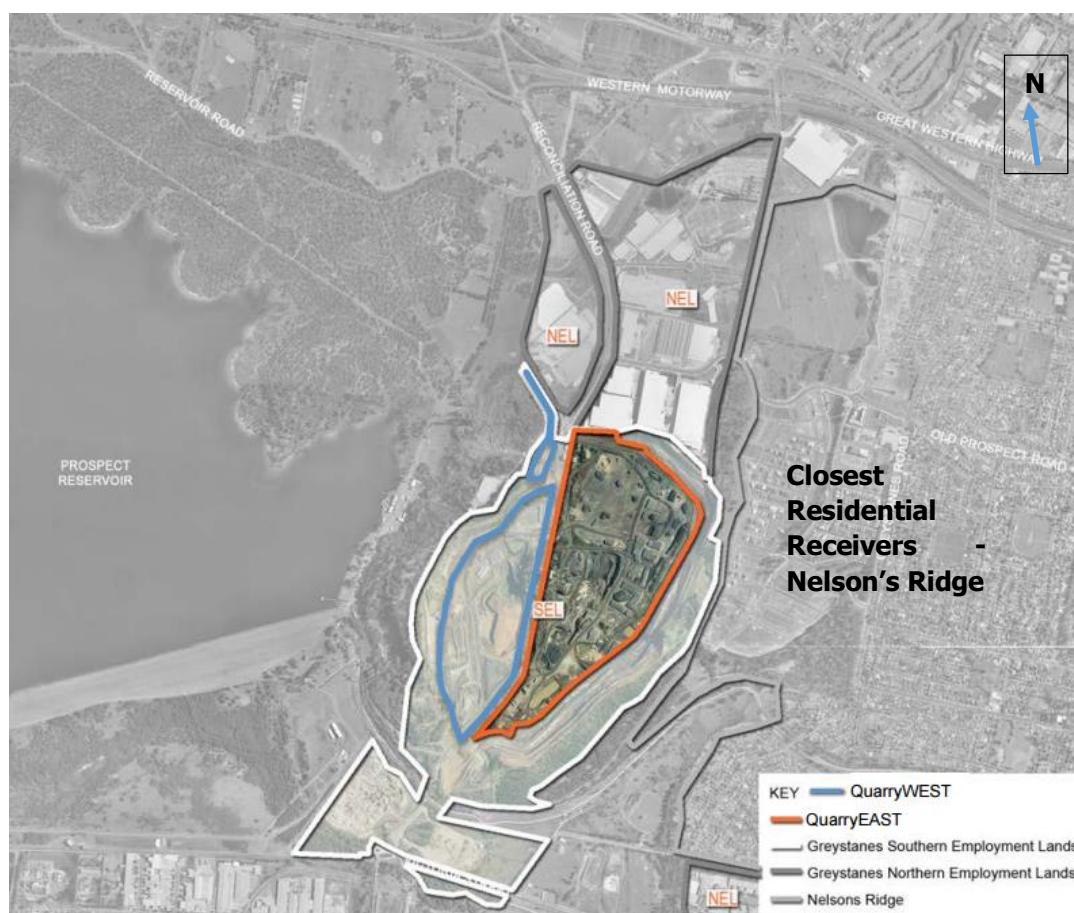
This report provides a qualitative desktop air quality assessment specifically providing details of proposed management and mitigation measures proposed for the QuarryWEST project for its initial construction phase and then its operations.

Land use surrounding the QuarryWEST site is shown on Figure 1, and includes:

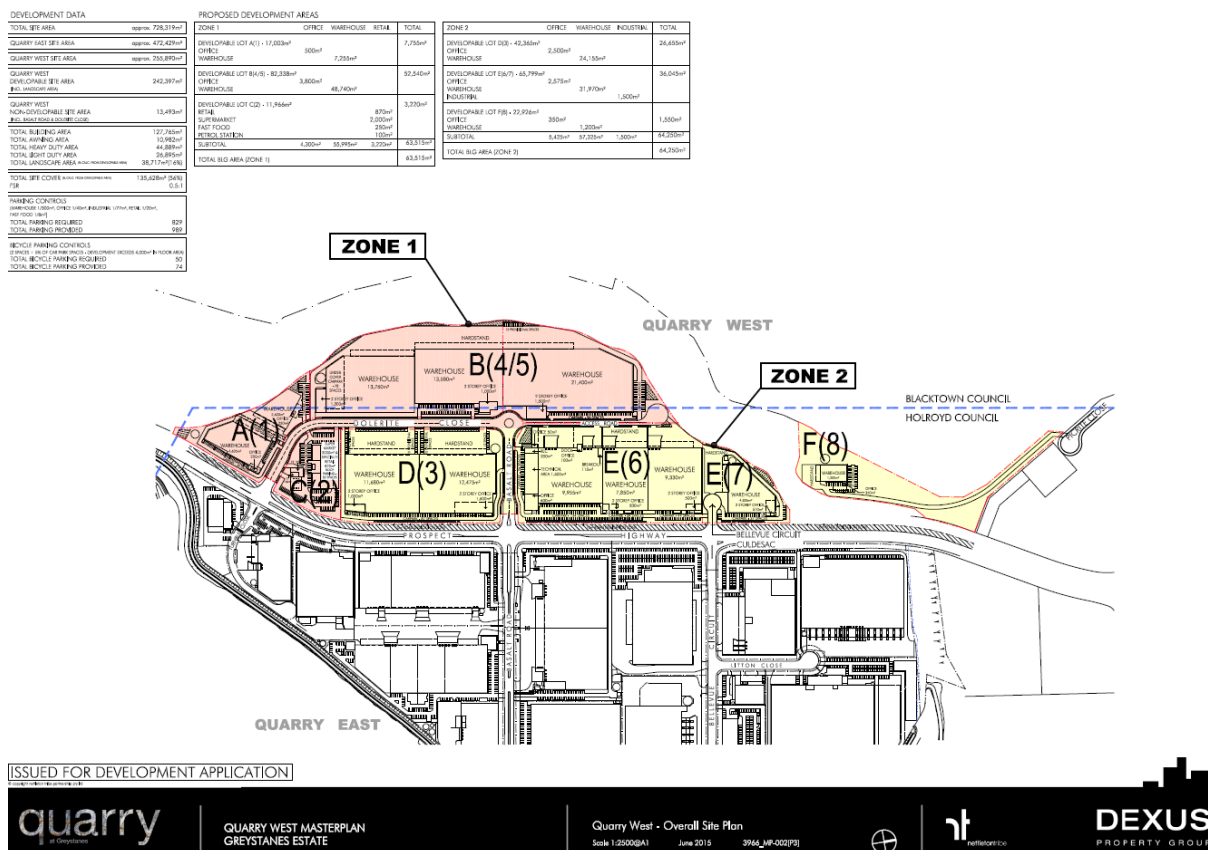
- North – the established Northern Employment Lands (NEL), an industrial subdivision consisting of lot sizes of approximately 5 hectares. Further north of the NEL is the M4 Motorway and the suburbs of Prospect, Girraween and (further afield) Seven Hills and Blacktown;
- East – the predominately established QuarryEAST industrial estate, beyond which lies the residential area of Nelson's Ridge and the suburb of Greystanes;
- South – Boral's construction materials recycling facility is located directly to the south, beyond which comprises a variety of open space regions. Further afield again are the existing industrial/manufacturing areas of Wetherill Park, Smithfield and Fairfield West; and
- West – Prospect Reservoir and Eastern Creek.

Of the above receivers, the residences at Nelsons Ridge can be classified as the potentially most sensitive receivers. The closest point between the QuarryWest development and the closest residential receivers is 700 metres and is buffered by the QuarryEast development.

Figure 1 Regional Area



The site's preliminary masterplan is presented in Figure 2.

Figure 2 Preliminary Site Masterplan

The proposed facilities may operate up to 24 hours a day, 7 seven days a week, 365 days a year. Construction works for the project would be undertaken generally in accordance with the hours as stipulated in the EPA's Interim Construction Noise Guideline, namely:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 1:00pm Saturdays; and
- no work on Sundays or public holidays.

The main sources of air emissions associated with the operation of the QuarryWEST project would be vehicle emissions and emissions from plant and equipment on site. The combustion of diesel fuel generates a range of pollutant emissions, primarily oxides of nitrogen (NOX) and particulate matter (including particular matter less than 10 µg (PM₁₀) and total suspended particulate (TSP)), as well as volatile organic compounds (VOCs). Other emissions, such as carbon monoxide are also emitted from combustion engines, but are much lower in level than the others.

Air quality from construction works associated with the project would be from the earthworks phase, and to a lesser extent building construction. The proposed construction works will generate particulate emissions, including PM₁₀ and TSP.

Air Quality Criteria

Air quality criteria are benchmarks set to protect the general health and amenity of the community in relation to air quality. The sections below identify the pollutants of interest in this study and the application air quality criteria for each pollutant.

The NSW EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (DEC, 2005) sets out applicable impact assessment criteria for a number of air pollutants.

The ambient air quality criteria for the pollutants considered in this assessment are shown in Table 1.

Table 1 Impact Assessment Criteria - Criteria Pollutants

Pollutant	Averaging Period	Criteria ($\mu\text{g}/\text{m}^3$)
Nitrogen dioxide (NO_2)	1 hour	246
	Annual	62
Total suspended particulates (TSP)	Annual	90
Fine particulate matter (PM_{10})	24 hours	50
	Annual	30
Carbon Monoxide	8 hours	10,000

Existing Air Quality

The nearest EPA Air Quality monitoring site to the development is in Prospect, approximately 2.5 kilometres to the north. The CO , NO_2 and PM_{10} values measured at the Prospect monitoring site over the period 2010 to 2011 are presented in Table 2.

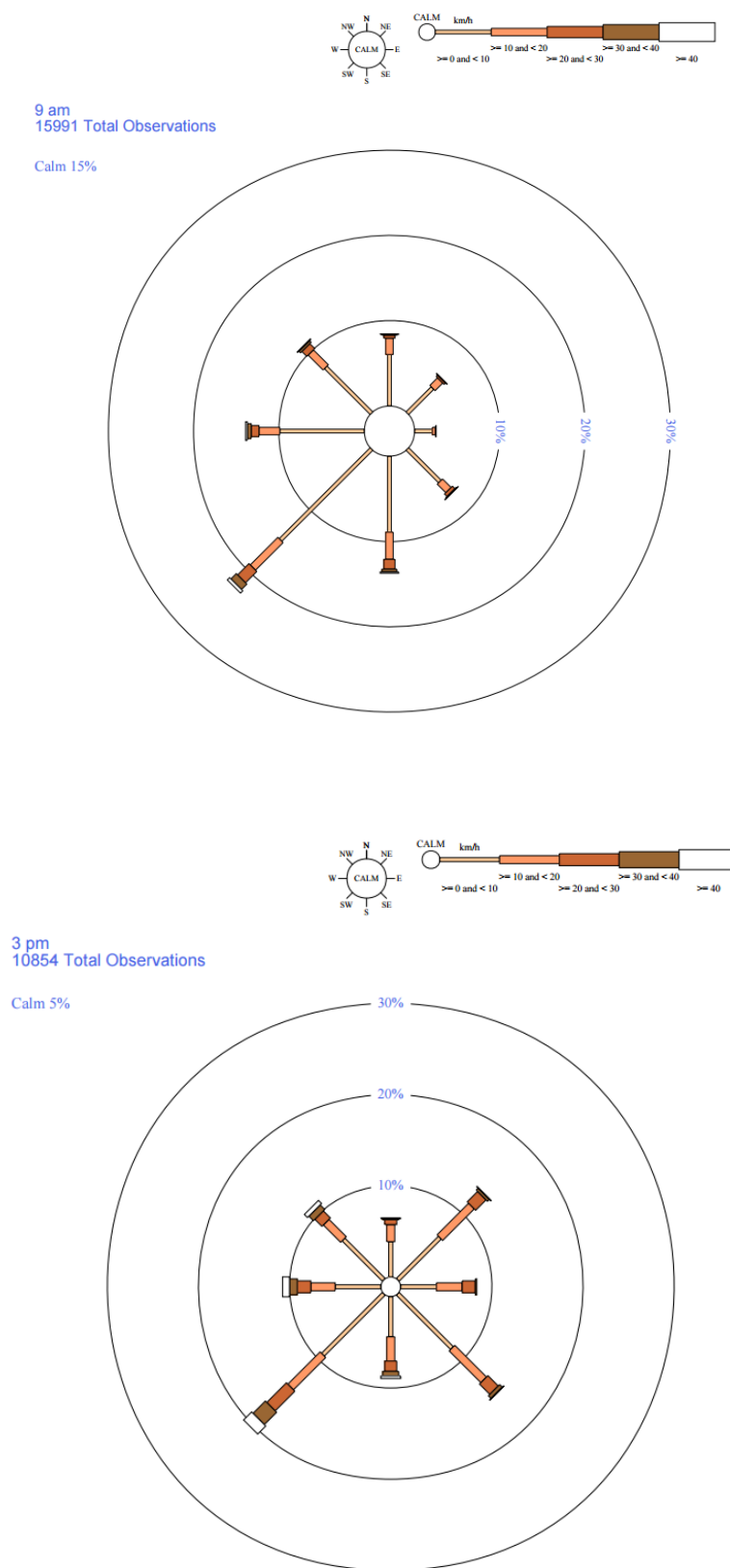
Table 2 Existing CO , NO_2 and PM_{10} Concentrations

Year	CO [$\mu\text{g}/\text{m}^3$]	NO_2 [$\mu\text{g}/\text{m}^3$]	PM_{10} Concentration [$\mu\text{g}/\text{m}^3$]
	8 hours	Annual Average	Annual Average
2010	369	23	16
2011	356	22	16

Local Meteorology

Local representative meteorological data for the Project area and its wider surroundings were retrieved from the Prospect Reservoir Bureau of Meteorology (BOM) monitoring site. This site is located approximately 1km west of the Project.

Figure 3 presents the annual 9am and 3pm wind roses for the Prospect Reservoir meteorological station. On an annual basis winds from the southwest dominate the wind distribution pattern in both the morning and afternoon. The annual average wind speed at 9am is 2.3m/s and at 3pm is 3.6m/s.

Figure 3 Annual 9am and 3pm Windroses for Prospect Reservoir

Review of potential air quality impacts

The Greystanes SEL is an existing industrial and retail/business estate that is subject to an approved concept plan for industrial and business development. The QuarryWEST project involves the development of warehouse and retail facilities that are consistent with the approved concept plan and are not expected to generate a significant amount of air emissions within the local or regional air shed for construction or the operation of the facility. The QuarryWEST site is well separated from sensitive land uses.

Construction Air Quality Impacts

Construction air quality impacts are influenced by a variety of factors including prevailing wind direction, temperature, time of day, topography and the construction activities.

The prevailing wind directions for Prospect area is south westerly as seen Figure 3. The closest residential receivers are northeast of the site and due to the physical nature of the construction activities, there is the potential for air pollution due to suspended dust particles. The dust which generally emanates from a site are usually caused by either wind or traffic generated on hardstand areas.

Dust emissions during construction works are considered able to be managed in accordance with standard best practice controls. A construction air quality management plan should be developed considering the following measures to minimise the potential for dust generation:

- letter box drop to noise sensitive receivers to inform them of potential work that could result in dust;
- minimising the area of disturbance as far as practicable during works;
- promptly stabilising/revegetating disturbance areas;
- air quality complaints handling procedure;
- monitoring of dust emissions during construction to confirm compliance;
- minimising drop heights for materials being worked on the site;
- keeping exposed surfaces moist;
- limit vehicle speeds on the construction site to less than 30km/h; and
- ensuring trucks are covered and do not track sediment onto public roads.

Diesel emissions from off road plant and equipment may also be considered in the air quality assessment of construction. Exhaust emissions of particulates, oxides of nitrogen (NO_x), Carbon Monoxide and hydrocarbons can be expected from off road construction vehicles working on the site. To minimise off road vehicle emissions the construction air quality management plan, where practical, would develop procedures where off road vehicle emission are reduced by reducing idling, ensuring equipment is correctly maintained and using cleaner equipment near sensitive populations. Where practical diesel equipment will be used with best available diesel emissions standards.

Operational Air Quality Impacts

Whilst the end-users of the facilities on site are not known at this stage, it is unlikely that the project would result in any adverse air quality impacts given the distance to sensitive receivers and the nature of the proposed facilities (ie. warehousing and distribution and retail).

Exhaust emissions of particulates, oxides of nitrogen (NO_x), Carbon Monoxide and hydrocarbons can be expected from vehicles travelling to and from the site. It is expected that all vehicles accessing the warehousing, distribution and retail facilities would have compliance with relevant and current emission standards as prescribed in Australian design rules.

Petrol odour emissions associated with the proposed service station are likely to be very localised around the facility, and are not expected to result in any detectable odour off-site. Initiatives to encourage sustainable transport modes, have been included as part of the project to assist in reducing transport-related air emissions.

The initiatives include:

- ensuring that the development does not conflict with the future construction of the Wetherill Park to Blacktown Bus Transitway by RMS.
- ensuring that the development provides access to, and does not conflict with the future construction of the cycleway (by RMS) within the transitway corridor.
- providing pedestrian footpaths for internal roads, to facilitate pedestrian and cycle movement within the estate;
- provision for bus stops on the Reconciliation Road frontage; and
- provision of bicycle facilities for all building developments.

Conclusion

DEXUS is proposing to develop an industrial and business park on a 26 hectare portion of the Greystanes Southern Employment Lands (Greystanes SEL), within the former Prospect Quarry at Pemulwuy called QuarryWest. Wilkinson Murray Pty Ltd has been commissioned by to undertake an air quality assessment of the construction and operation of the site. It is concluded that air quality impacts from the proposed construction and operation are low risk and it is recommended that a construction air quality management plan be developed to implement reasonable and feasible measures to control particulate emissions from fugitive dust sources and off road diesel vehicles.

I trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully

WILKINSON MURRAY



John Wassermann

Director