



**PROPOSED REGIONAL DISTRIBUTION CENTRE
KELLOGG ROAD, ROOTY HILL
RINKER AUSTRALIA PTY LTD
RESPONSE TO ISSUES RAISED IN SUBMISSIONS TO EAR**

FEBURARY 2006



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No.	ISSUE	RESPONSE
1	Inappropriate/unsuitable land use in terms of: - Proximity to Nurranging Reserve; - Impact on users of Nurranging Reserve; - Impact on Blacktown Olympic Park; - Proximity to local community and facilities; and - Need more open space.	Refer Sections 3.1 and 7.11.7 of Environmental Assessment Report (EAR) <i>The majority of the proposed RDC is zoned Industrial General under the Blacktown Local Environmental Plan(LEP) and accordingly in zoning this land it can be assumed that the proposed use is compatible with surrounding land uses given the 'clustering' of industrial development. The fact that the RDC is a permissible use gives weight to the RDC's compatibility with other uses which are predominantly industrial.</i> <i>The site for the proposed Regional Distribution Centre (RDC) is located within a large and growing industrial area. Major land use directly adjacent to the site includes the Onesteel Mini Mill, Humes Concrete Pipes and Products facility, the Nurranging Reserve, the Main Western Railway Line and the M7 Motorway. Other land use activities in the general area surrounding the proposed development site include a Council Depot, Blacktown City Canine Centre, Aquilina Reserve (Blacktown Olympic Centre) and Moreau Reserve. Figure 3.2 of the EAR shows the surrounding land use in relation to the development site.</i> <i>The results of the technical investigations described in the EAR indicate that there are no adverse impacts resulting from the proposed development on the surrounding community. The community living in the local area would experience no noticeable change in their local environment resulting from the construction and operation of the proposed RDC.</i> <i>People who use the western and south western portions of the Nurranging Reserve may observe a change in visual character of the adjoining area from undeveloped land to an industrial development. This effect would be ameliorated by the proposed substantial landscape plantings and other visual mitigation measures described in Section 6 of the EAR. To further ameliorate any impacts and improve the amenity of the western and south western portions of the Reserve, Readymix has sought to consult with Blacktown City Council in relation to additional landscape plantings and other works within the Reserve which would complement the works proposed within the development site.</i>

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		While parts of the Reserve are currently impacted by rail noise from the Main Western Railway Line operations, areas close to the boundary of the Reserve would at times experience noise levels above those currently experienced. During construction of the RDC noise mitigation measures are proposed to minimise impacts on users of the Reserve. Predicted noise levels within the Reserve during operation of the proposed development are below the recommended acceptable levels provided in the Industrial Noise Policy (INP). Dust levels at times would be above current levels but based on the assessment described in Technical Report (TR) No 5 and Section 7 of the EAR would be well below the levels of concern in relation to human health. For a period of approximately 6 months during the initial phase of construction there is a requirement for limited truck movements along North Parade through part of the Reserve. This may result in disturbance to other road users and those using adjacent areas of the Reserve. This section of North Parade provides access to the Nurragingy Reserve and Knox Rd for trucks traveling to the Blacktown City Council Depot. The main users of the roadway are vehicles associated with Blacktown City Council, service providers and some general public vehicles. Signs would be installed on the Knox Rd approaches to the intersection warning motorists of the possibility of construction traffic entering the roadway (eg. 'Construction traffic ahead' or 'Construction trucks entering'). Readymix has reviewed alternatives to access through Nurragingy Reserve for this period. On option identified in consultation with OneSteel is temporary access through that site. Vehicles would enter the RDC site via Kellogg Road, access the OneSteel site and then proceed to North Parade. This would however be subject to formal permission from OneSteel. The EAR has taken into account the potential impact on surrounding areas including Blacktown Olympic Park and existing users of the site. Predicted operational noise levels from the subject site do not exceed the acceptable noise levels at the Blacktown Olympic Park. The Air Quality Assessment indicates that the bulk of this site is within regions predicted to have PM_{10} concentrations in the range of 10 to 20 $\mu g/m^3$. These values are well within the current standards and are therefore safe even for residents with continual exposure. Blacktown City Council has foreshadowed possible accommodation development associated with the Blacktown Olympic Park site. No details on this development are available. The recreational amenity of both facilities will not be affected by the proposal.

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	- Development is unsuitable for Rooty Hill.	Refer Sections 2.7 and 3.1 of EAR <i>The site is situated within an intensively developed industrial area in Western Sydney. The development on the proposed site is in accordance with the NSW State Government and Blacktown City Council strategic direction policies for the local area and specific requirements in terms of investment, employment and freight transport.</i>
2	IMPACT ON RESIDENTS	
	- Derby Street, Station Street, Kingston Estate; and - Residential areas.	Refer Section 7.11.7 of EAR <i>The results of the comprehensive technical investigations described in the EAR indicate that there would be no adverse impacts resulting from the proposed development on the local community. In general terms, the community living in the area in proximity to the development site would experience no noticeable change in environmental characteristics and quality resulting from the construction and operation of the proposed RDC.</i>
3	NOISE	
	- Shunting, nighttime noise, sleep disturbance.	Refer Section 5.2.2 of EAR <i>The noise impact assessment predicts maximum noise levels caused by operation of the RDC are not likely to cause sleep disturbance at the nearest residential areas to the proposed site.</i> <i>The design and proposed future operation of the facility have incorporated noise attenuation including restrictions on the movement of locomotives in the area to the west of the M7.</i> <i>Rail wagons would be permanently coupled in groups (this practice is current in the rail industry for both coal and quarry products and also for container traffic). The permanent coupling reduces the overall length of the train, and reduces the relative movement between adjacent wagons during shunting and unloading operations. Shunting noise levels would be minimised by this arrangement.</i>
	- Project Assessment Criteria – DEC does not accept all the PSNL presented in the NIA in relation to the morning shoulder Amenity Criteria for Station Street and Crawford Road.	<i>The INP provides a “rule of thumb” with regard to the determination of a Rating Background Level (RBL) for this period to establish intrusiveness criteria but provides no guidance with regard to the determination of amenity criteria for the morning shoulder period.</i>

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		The methodology adopted by Heggies & Assoc acknowledges that it may be unduly stringent for this operation to be assessed against the night-time criteria. Measured ambient noise levels during the morning shoulder period are significantly higher than those measured during the night-time period and also higher than those measured for the day time period. Heggies methodology for the determination of the amenity criteria is based on the “rule of thumb” contained in the INP and is considered to be a fair and reasonable approach and used consistently for noise assessments for major industrial developments. Therefore, the amenity criteria for the morning shoulder period should not be revised. Section 2.2.3 of the INP states the methodology to be adopted when determining amenity criteria in an area of high traffic noise and is as follows: “The level of transportation noise - road traffic noise in particular - may be high enough to make noise from an industrial source effectively inaudible, even though the L_{Aeq} noise level from that industrial noise source may exceed the recommended acceptable noise level shown in Table 2.1. In such cases, the amenity criterion for noise from the industrial noise becomes the $L_{Aeq,period(traffic)}$ minus 10 dB. This criterion replaces the amenity criterion in Tables 2.1 and 2.2 above, and is used in the same way the amenity criterion is used, that is, in conjunction with the intrusiveness criterion, to determine the limiting criterion.” It is Heggies’ understanding of this methodology that if Tables 2.1 and 2.2 of the INP are replaced by the $L_{Aeq,period(traffic)}$ minus 10 dB then there is no requirement to further adjust the amenity criteria using Table 2.2.
	- Rail Noise Level - Selection of rail service providers should include consideration of type of wagons used in terms of noise emission characteristics.	A Train Noise Management Plan will be prepared which will require the rail service provider to achieve RailCorp DEC Licence rail network noise criteria.
	- Construction Noise Management Plan required.	Agreed and refer Section 6.3 of EAR.
	- Statement of Commitments does not include commitment to achieve nominated noise levels.	Readymix will operate to achieve the Project Specific Noise Levels identified in the EAR.
	- Increased truck noise as a result of number of vehicles.	Refer Section 7.7 of EAR Calculation of road traffic noise levels was conducted using the United States Federal Highways road traffic noise model (USFH).

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	- Impact on residents.	Refer Section 7.7 of EAR Operational noise levels are predicted to meet the project specific noise criteria at all residential locations under both calm and prevailing weather conditions. Construction noise levels are predicted to meet the relevant noise goals at the nearest potentially affected residential receivers.
	- Type of locomotives. Clarification is required as to what type of locomotives and operational procedures were used to derive sound power levels used in noise assessment.	The locomotive sound power level utilised in Heggies noise model for the subject site was determined from measurements conducted by a Heggies operator during shunting activities on the rail line at Sydenham. Measurements were conducted approximately 18 m from the rail corridor and the sound pressure levels measured. This measurement includes the noise output of one locomotive and wagons bunching during typical shunting activities. Using this measurement a sound power level of 100 dBA was determined for one locomotive. This sound power level has been adjusted upward to account for the fact there will be 3-4 locomotives and also adjusted downward to account for the duty cycle of the train. The train, when unloading, would normally not be in one position for more than approximately 5-6 minutes at a time. The scenario considered in Heggies' noise model considers locomotives, wagon bunching and rail unloading as three distinct noise sources. When the locomotives are at their highest output the rail unloading source will not exist (since the train would be in motion). Further, while a train is unloading, the locomotives would be at or near idle and therefore operating at a potentially lower sound power level than that utilised in the noise model. In addition to this, during unloading there would be no wagon bunching since the train would be stationary. Since all three sources have been modelled to occur simultaneously, it is Heggies' opinion that the modelled rail operations represent an acoustically worst case scenario.
	- Rail infrastructure Corporation Interim Guidelines for Rail Noise – These should be referred to.	Part A of the RIC Interim Guidelines describes the intent of the guidelines. Both the Guidelines for Applicants and the Guidelines for Councils aim to reduce the impact of rail noise and vibration on noise-sensitive developments located near the rail corridor. Part A of the Guidelines for Applicants states that the document has been prepared to assist those involved in the planning and design of developments that are potentially affected by rail noise and vibration. The document provides design criteria inside habitable rooms and focuses on noise and vibration

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		mitigation measures that may be adopted during the planning and design stages of residential or other noise-sensitive developments near to the rail corridor. The RIC Interim Guidelines were not designed to assist in the assessment of rail noise from a proposed industrial development with potential to increase rail traffic volumes and hence, it was not appropriate to refer to these guidelines as part of the subject assessment.
	- Noise Goal for Sleep Disturbance – Clarify Crawford Rd levels should be confirmed and RIC Guidelines utilised.	The typographical error in Table 12 of Technical Report No 6 is acknowledged. The error involves only the measured background noise level in the third column, the sleep disturbance noise goal does not change.
	- Loading of Storage Bins - What are they to be made of, clarify loading from empty / not empty bins.	Section 7.1.1 of the Noise Report (Technical Report No 6) identifies that the activity of loading the main storage bins (storage bins) from an empty state will occur rarely and will be minimised by the fact that each bin will generally store only one type of material. Section 7.2 goes on to state that this activity will not occur during the morning shoulder or night-time period. A storage bin noise source has not been considered as part of the sleep disturbance assessment since, when the bin is operating normally and not being loaded from an empty state, it is not considered to be a significant maximum noise source compared to the others that have been taken into account. The sound power level for 'product being loaded into lined storage bins' is provided in Table 1 of TR No 6. The bins may be made from steel however, the cone section of the bins will be lined to reduce impact noise and therefore minimise the potential of generating excessive noise.
	- Rail Shunting –Need to define shunting.	The maximum sound level associated with rail shunting, provided in Table 20 of Heggies report, includes the noise output of locomotive and wagons bunching during typical shunting activities.
	- General Methodology – Modelling should be revised using Soundplan.	The series of contours provided in Appendix D of TR No 6 address the industrial noise assessment for the project, not the road or rail traffic noise assessment. The Environmental Noise Model (ENM) has been produced in conjunction with the DEC and is a commonly accepted modelling package for such types of assessment.
	- Acoustic lining should be provided to all bins.	Refer Section 7.7.4 of EAR and Section 3.2 of Statement of Commitments.

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		The noise impact assessment has identified the need for rail unloading bins and the cone sections of the main storage bins which hold aggregate to be lined with noise mitigating material.
	- Noise barriers should be installed prior to commencement of construction.	Refer Section 7.7.4 and 7.7.5 of EAR Where practicable noise walls will be constructed as early as possible during the construction period.
	- Noise - Construction noise levels are unacceptable.	Refer Section 7.7 of EAR Sections of the Nurraging Reserve may occasionally experience noise levels greater than the applicable noise goal when heavy construction equipment is operating on the eastern boundary of the RDC site. Most major earthworks to be conducted on the site would be completed within the first six months of the 24 month program. Various noise management techniques have been developed to reduce the noise impact on the Nurraging Reserve during the construction phase of the proposed development and will be incorporated into the Construction Noise EMP.
	- Mechanism should be put in place to require ongoing upgrade of noise mitigation equipment.	Refer Section 6 of EAR The site EMP will be subject to review in accordance with Readymix Environmental Management System (refer Section 6.2 of EAR). This review will include an assessment of environmental performance.
4	TRAFFIC	
	- Increased congestion on roads.	Refer Section 7.10 of EAR The proposed development site is located along the south-eastern boundary of Kellogg Road, Rooty Hill. The primary access point to the development site located on Kellogg Road is approximately 3.6 km north of the M4 motorway interchange, 600 m from the M7 Motorway interchange with Woodstock Ave and 2 km south of the M7 Motorway interchange with Power St. Access to the development site is also available from North Parade however Angus Creek traverses the southern section of the site restricting main access to the northern section of the proposed development site.

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		The proposed RDC would generate traffic due to the employee movements and the distribution of aggregates and concrete from the site. All heavy vehicle access to the facility would be via Kellogg Road. With the exception of concrete agitators servicing local customers and employee vehicles, all RDC traffic would be restricted to roads through the industrial area only when accessing the M7 Motorway. Analysis shows that the nearby intersections are expected to operate satisfactorily when the development becomes operational, however some upgrades may be required.
	- Truck traffic will increase noise, dust and pollution levels in the area.	Refer Sections 7.6 and 7.7. of EAR Dispersion modelling has been used to assess the impact that dust emissions from the operation of the RDC would have on the local air quality. It is concluded that air quality impacts would be at acceptable levels and that air quality goals would not be exceeded at sensitive locations due to the operation of the RDC at full capacity of 4 Mtpa. Road traffic noise levels are predicted to satisfy the requirements of the NSW Environmental Criteria for Road Traffic Noise (ECRTN).
	- Increased accident potential.	Refer Section 7.10.4 of EAR The additional traffic generated by the proposed RDC would increase the traffic volumes in the area. However, it is not expected to have any substantial impact on accidents along Woodstock Ave or the intersections of Woodstock Ave / Kellogg Rd or Woodstock Ave / Glendenning Rd due to the recommended improvements to the surrounding road network. It is proposed that monitoring of road capacity and accidents statistics be undertaken to ensure that the extra traffic generated by the development is consistent with the Traffic Study.
	- Reduction in truck numbers reduced by rail (100 trucks per train) does not add up when compared to tonnes per truck.	Refer Sections 2.3 and 5.5 of EAR Without the project Readymix would deliver all materials direct to customer by road from outside the metropolitan area. In contrast the project would see the bulk of raw materials brought to the RDC by rail from outside the Sydney Basin. An average train may transport approximately 3500 tonnes which is greater than 100 average truck loads of material.

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	- Traffic Generation and Modelling – Modelling required to assess impact on surrounding road network.	<i>Irwinconsult undertook intersection modelling using aaSidra which is standard practice for preparing Traffic Impact Statements. In Section 4.2.1, Table 4.1 of TR 8, traffic generation for a weekday AM peak hour is summarised as 172 trips entering the site and 120 trips leaving the site.</i> <i>Based on the total number of the trips quoted in the report, Irwin Consult did not believe that the proposed RDC will generate excessive trips taking into account the current two-way traffic volumes on Woodstock Avenue east of Kellogg Road of 782 vehicles in the AM peak hour (see Figure 5 in TR8). Moreover if one was to examine the distribution of RDC vehicles on Woodstock Avenue as shown in Figure 6 in the report, the additional traffic generated on the road network is quite modest and well within the methodology used in the Traffic Impact Statement based on a worse case peak hour assessment on a weekday.</i>
	- Intersection of Woodstock Ave/Kellogg Rd – Require additional information on roundabout design, alternatives and consideration of proximity of Glendenning Rd/Woodstock Ave roundabout .	<i>These issues were considered early on in the analysis and hence the roundabout was proposed. In Section 4.3.2 of TR No 8, the merits of a roundabout option are discussed over the current situation. Traffic signals were evaluated but were considered unsuitable as an intersection in itself and incompatible with the nearby intersections particularly taking into account the close proximity of the roundabout at Woodstock Avenue with Glendenning Road.</i> <i>Detailed design will involved further consultation with Blacktown City Council and the RTA.</i>
	- Intersection of Woodstock Avenue/Glendenning Rd – A Condition of Consent is required for required works.	<i>In Figure 6 of TR8 the RDC will contribute 5 cars and 47 trucks for the left turn from Woodstock Avenue into Glendenning Road. In Section 4.3.3, presenting the intersection assessment, of the report the left turn in Glendenning Road will have an average delay of 7 seconds and queue length of 18 metres for 95 percent of the time. Based on the intersection assessment and the fact that the development traffic is very low, this does not warrant an upgrading.</i> <i>This issue should be reviewed during the design of the proposed roundabout at the intersection of Woodstock Avenue and Kellogg Road.</i>
	- Kellogg Rd Pavement – Condition of Consent should require reconstruction of 10,500m2 of pavement.	<i>Readymix propose that any contribution to the maintenance of Kellogg Road be based on percentage of future use by this project.</i>
	- Impact of construction traffic on Nurragingy Reserve is unacceptable.	<i>In Table 2.1 of TR 8 the maximum expected construction traffic is given for the critical AM peak hour; 10 vehicles exiting the site and 10 vehicles entering the site via the Knox Road/Reserve access point intersection.</i>

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		Dimensions of each volume source were selected to be as follows: • Source height: 2 m • Horizontal spread: 20 m • Vertical spread: 2 m These dimensions were chosen by examining the distance between each dust source. For a series of volume sources representing a road section, the horizontal spread is approximately one quarter to one half of the separation distance between sources. The vertical spread value of 2 m is approximately one quarter to one half of the height of the activity at each volume source. It should be noted that there will be little difference to the results beyond the site boundary due to small variations to the source dimensions. Holmes Air Sciences have not compared results from modelling the operations as volume sources with results from using area sources. The total emissions will be identical in both cases and the model results outside the site boundary would be expected to be similar. Holmes Air Sciences consider the results to be no more accurate using either method.
	- Meteorological Data - What was the basis for use.	Meteorological data from both Blacktown and St Marys were investigated for the purposes of the assessment. It was brought to Holmes Air Sciences attention that the wind data from the Blacktown site may have been subject to increased turbulence due to tree growth in the area. St Marys data were therefore chosen for the modelling. The DEC was consulted and they advised that if the region concerned was further west of the ridge, then data from the St Marys station may be of more use. Holmes Air Sciences received comments from the Department of Planning (DoP) on the assessment report dated 30 June 2005. In their comments on the air quality assessment, the DoP requested more information on the cumulative impacts of 24-hour average PM_{10}. Further assessment was required which included modelling the operations with contemporaneous hourly PM_{10} monitoring data. Since the Blacktown site was slightly closer to the project site than St Marys, the Blacktown PM_{10} monitoring data were considered to be the most relevant. Contemporaneous meteorological and PM_{10} data from the Blacktown site were therefore used for the subsequent investigations (later provided in Appendix E of TR No 5).

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		Windroses created from the St Marys and Blacktown wind data are presented in Figures 2 and 3 respectively (refer Appendix A). There are some differences in the measured wind patterns from each site and dispersion model results using both datasets are provided in Figure 4 (refer Appendix A). The dispersion model results from Figure 4 show that, for maximum 24-hour average PM_{10}, the predictions to the east and west of the site are very similar for both meteorological data records. It could be said that use of the Blacktown meteorological data results in slightly higher predictions to the east of the site. To the north and south of the site, use of the St Marys data gives slightly higher predictions than for the Blacktown data. It is noted that selection of St Marys meteorological data for the cumulative impact assessment (Appendix E of TR No 5) would have been more consistent with the main body of the report. However, the comparison presented here using both the St Marys and Blacktown meteorological datasets has shown the dispersion model results to be similar at the most sensitive (residential) areas around the site.
	- Emissions – How was the emission factor for vehicle movements on sealed surfaced derived?	Dust emissions (TSP) from vehicles traveling on paved road sections were based on emission factors from the US EPA AP-42 (US EPA, 1985 and updates). Section 13.2.1.3 of AP42 provides a predictive emission factor equation for particulate emissions from vehicles on paved surfaces.
	- Validity of conclusions – Adequacy of cumulative impact assessment.	TR No 5 concluded that “air quality impacts would be at acceptable levels and that air quality goals would not be exceeded at sensitive locations due to the operation of the plant”. The information supporting this statement included: • Annual average PM_{10}, TSP and dust deposition levels were predicted by a dispersion model to be below air quality goals at all residential areas around the site. This included the likely background concentrations. • Maximum 24-hour average concentrations due to the project alone were below the $50 \mu\text{g}/\text{m}^3$ goal at all residential areas around the site. • Maximum 24-hour average concentrations due to the project alone were below the $50 \mu\text{g}/\text{m}^3$ goal at nearby reserves for the hours when people would potentially be at these locations (12-hour average predictions).

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		It was recognised that, for 24-hour average PM_{10} concentrations, there was a potential for the “cumulative” impacts to be above the $50 \mu\text{g}/\text{m}^3$ goal. These instances were found to be when the background level was already high (say, $48 \mu\text{g}/\text{m}^3$) and the increment from the project was relatively low. The probability of these events was considered to be low. Due to circumstances whereby exceedances of the 24-hour average PM_{10} goal are generally when existing background concentrations are very close to the goal and the contribution of the project is low, the assessment adopted the approach that the predicted 24-hour average PM_{10} concentration from the development should be less than $50 \mu\text{g}/\text{m}^3$ at all the nearest residences.
	- Condition of Consent should require comprehensive air quality monitoring programme.	Noted Refer EAR Section 6.8
	- Climatic conditions.	Refer Section 7.6.2 of EAR The Bureau of Meteorology collects climatic data from Prospect Dam approximately 6 km south east of the site. Temperature data show that January is typically the warmest month with a mean daily maximum of 28°C. July is the coldest month with a mean daily minimum of 6.1°C. Rainfall data collected at Prospect Dam show that March is the wettest month with a mean rainfall of 98 mm over 11 rain days. Annually the area experiences, on average, 879 mm of rain per year. The DEC has collected meteorological data in the area from St Marys, approximately 7 km to the west of the RDC site. This data consists of hourly records of wind speed, wind direction and temperature and have been prepared into a form suitable for dispersion modelling. Data for 2003 was available for the air quality study. The data indicated that the most common winds were from the South South West, South and North. This pattern is evident in all seasons to various degrees. In the summer months winds from the East South East were also common. Of the 8,760 hours of records available the wind speed was less than 0.5 m/s for 23% of the time. Dispersion modelling has been used for the air quality assessment. The computer model used for the assessment, AUSPLUME, requires information about the dispersion characteristics of the area including wind speed, wind direction, atmospheric stability and mixing height. Technical Report No 5 provides further detail of the dispersion modelling methodology.

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	- Health effects on people visiting Reserve and workers. - Impact on residents; and - Health effects on Olympic Baseball Stadium.	Refer Section 7.6.7 of EAR Associate Professor David McKenzie of the Chest and Sleep Centre prepared a report based on his professional experience in the diagnosis and management of respiratory disorders with a particular interest in Occupational Health problems. The report was also based on an assessment of the medical literature related to exposure to dusts of various kinds and urban pollution. Technical Report No 5 includes a copy of the report prepared by Associate Professor McKenzie. Associate Professor McKenzie concluded that there is no reason for concern about adverse health effects from the proposed RDC. The anticipated levels of respirable dust in the adjacent residential areas would be well below the criteria set by the DEC. In Associate Professor McKenzie's stated there is no reason for concern about the safety of even the most susceptible individuals living in the vicinity of the proposed RDC. There is also no reason for concern about the safety of people using or working in the adjacent recreational areas.
6	CUMULATIVE IMPACT	
	- Other industries; and - Noise, air, traffic.	Refer Section 7.14 of EAR In terms of current activities particularly industrial activities, the Main Western Railway Line and the M7 Motorway, the impacts resulting such activities and developments in the area have in most instances been incorporated in the environmental investigations undertaken in the definition of existing and baseline environmental conditions. This has been done in the flooding, air quality, noise, traffic and visual impact studies as described in the relevant Technical Reports. In addition the Angus Creek water quality monitoring provides an assessment of the current conditions of the Creek catchment in terms of water pollution and erosion/sediment movement. Consequently the cumulative impacts of the proposed RDC and current activities are incorporated in the assessment presented in the EAR and the Technical Reports. In terms of future developments, with the exception of traffic and noise there were no known proposed activities which would impact on the same areas on which RDC impacts were predicted.
	- Mechanism should be put in place to require ongoing upgrade of dust mitigation equipment.	Refer Section 6 of EAR The site EMP will be subject to review in accordance with Readymix Environmental Management System (refer Section 6.2 of EAR). This review will include an assessment of environmental performance to ensure that environmental management systems at all times achieve standards and goals set by relevant regulatory bodies..

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7	RAIL	
	- Deed will be required with RailCorp for the installation and alteration of track and signaling; - Safety Interface Agreement required; - Accreditation required by Independent Transport Safety and Reliability Regulator; - Acoustic and Derailment Protection – Barriers will need to be approved by RailCorp at design stage; - Buffer Stops – Require approval by RailCorp at detailed design stage; - Require protection of M7 overbridge supports; - Access rights to the RDC- RailCorp require reasonable access; - Access to the Rail Corridor - Existing access to be maintained; - Land Occupancy Agreement required; - Environmental Safety – Measures to be implemented to ensure no impacts on rail corridor; - Transmission Lines – Some of the existing 11kv transmission line may need to be placed underground and 66kvttransimssion poles relocated; - Route for empty trains - western train movements need to be investigated further; - Access to the Main West Line will be subject to proposed condition; and - Flood Levels – Drainage works to be endorsed by RailCorp.	<i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>Noted.</i> <i>This is a commercial issue – Refer response to Issue 16.</i> <i>Noted.</i>
8	ABORIGINAL HERITAGE	
	- Written Statement required from DTAC and DCAC based on their participation in the Cultural Heritage Assessment (March 2005); and - Written Statement required from DLALC following consultation with the group regarding the proposed development.	<i>Further consultation has been undertaken (refer Appendix B). Readymix will liaise with representatives of the relevant groups during the construction phase of the project in relation to monitoring of activities.</i> <i>Refer Appendix B.</i>
9	FLORA AND FAUNA	
	- <i>Pimelea spicata</i> – targeted survey required.	<i>Targetted surveys for all threatened species known to occur in the locality including Pimelea spicata were undertaken during the flora surveys conducted by NECS in 2002, 2003 and 2004 and Biosis 2005. Surveys used the random meander method as recommended by DEC. The surveys did reveal the presence of Prickly Spider Flower.</i>

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	- Recovery Plan for Endangered Ecological Communities – No offset proposal included.	Ref Figure 7.24 of EAR and Section 6.5.7 of EAR To ensure that the ecological value of the development site is maintained, and where possible enhanced a Vegetation Management Plan (VMP) would be prepared and implemented. This plan would outline the preservation and rehabilitation of the vegetation on the site prior to and during the construction and through the operation of the RDC. Bush regeneration work would commence in areas that are less degraded and gradually extend towards areas that are more degraded. The regeneration works will include planting of an additional 1 ha in the south eastern corner of the site as part of the Angus Creek corridor. In addition to the proposed plantings on the RDC site as part of this proposed development Readymix has submitted a proposal to Blacktown City Council to undertake additional plantings in the Nurraging Reserve. Readymix would develop the above measures to meet the off-set targets recommended by the Department of Environment and Conservation (DEC). To achieve the required off-sets further consultation will be undertaken with Blacktown City Council to identify possible areas within Nurraging Reserve which could be incorporated in the offsets proposal.
	- Potential impact of noise on fauna.	The site of the proposed RDC is located adjacent to the existing Humes operations, Onesteel, the M7 Motorway and the Great Western Railway Line. The potential for noise to adversely affect fauna on and surrounding the site would be minimal. Most animals quickly become habituated to continuous noise, whereas rapid and punctuated noise, such as blasting, elicits an escape response. The noise associated with the proposed plant would be continuous so few impacts are expected.
	- Extent of survey and assessment.	Refer Section 7.4 of EAR and TR 3 Section 3 Site investigations were conducted by NECS in October, November, December (2002); January, February (2003); and May (2004). During site assessments, vegetation communities and characteristic species were assessed using the random-meander method which involves walking through all the vegetation types covering the study area. Habitat searches involving actively searching likely fauna niches. Potential fauna niches searched include dense undergrowth, base of trees, tree hollows and branches, grassland, aquatic habitats, and beneath logs, rocks and debris. Opportunistic sightings of fauna species were also recorded whilst undertaking other site surveys.

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		Fauna species recorded on the site were identified via scat, call, visual, track, and habitat analysis. Additional survey was undertaken by Biosis in March 2005.
	- Potential for weed infestations.	Refer Section 6.5.7 of EAR The VMP will include activities for weed removal and control which would be conducted prior to and during revegetation works. Weed removal and any subsequent revegetation would commence upstream (westwards) and gradually progress downstream (eastwards). This is due to the fact that water acts as a mechanism for distributing weed seeds.
	- Riparian zone has exotic plant Cockspur Coral Trees – Environmental Weed.	Noted – Will be addressed in Vegetation Management Plan.
	- Table 3 of F&F Report identifies potential habitat of 16 species for which no 8 Part Test was undertaken.	Refer Section 5 of TR No 3 Fauna – Eight Part tests were conducted for Cumberland Land Snail and the Koala. Potential habitat for the remaining threatened species recorded from the local areas does not occur on the RDC site or it not limiting therefore Eight part tests were not required for the species.
	- Impact of fencing on fauna.	The type of fencing to be used will be determined during preparation of the Vegetation Management Plan.
	- Detail use of NPWS (2002) mapping. Significance and condition should be discussed.	The NSW NPWS mapping is reported in Figure 3 of TR 3 and discussed in the Section 4.2. of the TR.
	- Disparity between surveys assessment of vegetation community condition and NPWS condition codes.	It is not uncommon for site specific mapping of vegetation communities and condition that it varies from the 1:25,000 scale vegetation mapping of NPWS.
	- 5 species of microhiroperan are considered to roost in the study area and will be potentially affected by vegetation removal and are not considered in the impact assessment.	Section 4.4 of TR No 3 discusses potential habitats by hollow-dwelling fauna. These trees are outside the development footprint and will not be disturbed by vegetation clearing.
	- Question 3 of the “8 part test” has not been addressed for endangered ecological communities.	Refer Pages 49 and 52 of TR No 3
	- Ongoing monitoring should be carried out of ecological quality of Angus Creek and its riparian zone.	Refer Section 6 of EAR

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10	AQUATIC ECOLOGY	
	- Sampling location EASO1 is considered inappropriate.	The EASO1 site was located at the upstream end of the channelised section of Eastern Creek, to provide an indication of the habitat quality (REC score) upstream of the confluence with Angus Creek. Eastern Creek is a modified urban system that has been impacted by surrounding landuse, urbanisation and weed/alien species. In addition, some sections have been artificially altered in terms of flow and channel shape. In order to improve conditions along the creek and provide green corridors, bush restoration programs have been conducted along parts of Eastern Creek. Thus, given the impacts and work towards restoration of Eastern Creek, it is difficult to define what would be a representative section of Eastern Creek. For the purposes of this study, consideration was given to the impacts of the development on the downstream environment of Angus Creek itself and on the environment downstream of its confluence with Eastern Creek. Thus it was applicable to choose a site upstream of the confluence but in the vicinity of Angus Creek to provide an indication of habitat quality and species composition in Eastern Creek against which future monitoring downstream of the confluence could be compared. This will be particular important to determine whether there are any direct impacts as a result of the development along Angus Creek. If sites were chosen further away from the confluence, then it would be difficult to determine whether the impacts were a results of other disturbances in the area (such as those described above) or due to the development on Angus Creek. The monitoring program will be prepared as part of the site EMP. It would also include recommended management actions in response to results of the monitoring program.
	- Proposed monitoring programme - Further detail required.	Refer TR 4 and Section 7.5 of EAR Survey was undertaken by Biosis in 2005.
	- No aquatic fauna survey.	Report identifies species as groundcovers.
	- Summary of AE report indicated that Commelina cyanae & Microleana stipodes are exotic but are native.	
11	CREEK CROSSINGS	
	- Applicability of Rivers and Foreshores Improvement Act.	Under Part 3A of the EP&A Act the R&FI Act does not apply
	- Options for relocating infrastructure to be considered.	Refer Sections 2.8 and 5.2.1 of EIS

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		The location of infrastructure is limited due to location of creek, Main Western Railway line, Sydney Water Sewer line and other infrastructure. Alternative locations and layouts for the rail siding and unloading station were considered. The constraints were the need to minimise impacts on the Nurragingy Reserve and Eastern Creek to the east and on the residential and commercial areas of Rooty Hill to the west. The proposed layout avoids a crossing of Eastern Creek, locates the unloading station away from the Nurragingy Reserve and restricts the movement of locomotives west of the M7 Motorway.
	- Riparian zone of 20m from the top of each side of the bank on each side of the watercourse and additional 10m of buffer width in which no exotic or invasive non local plants species should occur or structures that affect development and viability of riparian ecology. Offsets to be considered.	Refer Sections 6.5.7 and 7.5.4 of EAR The layout of the proposed RDC incorporates a riparian Buffer Zone of 20 m and where possible up to 40 m except at the location of 2 crossings of Angus Creek and portions of the rail unloading and conveyor system to the south of the Creek. The RDC has been designed to minimise impact on the riparian corridor while at the same time meeting site specific design requirements. The EMP for the site will include regeneration and protective works in the Angus Creek Corridor as well as site operational environmental management procedures.
	- Vegetation Management Plan to be prepared in accordance with "How to prepare a Vegetation Management Plan.	Refer Section 6.5.7 of EAR To ensure that the ecological value of the development site is maintained, and where possible enhanced a Vegetation Management Plan (VMP) will be prepared and implemented. This plan would outline the preservation and rehabilitation of the vegetation on the site prior to and during the construction and through the operation of the RDC. The VMP would be implemented by a suitably qualified bush regenerator and include management of weeds, revegetation, erosion control and monitoring.
	Road/Conveyor bridge . Width to be for one way vehicle traffic only.	During construction of the proposed rail siding and facilities at the southern end of the site dual carriageway will be required on the access bridge. In addition safety would be improved. The site of the proposed bridge has been selected to use a previously disturbed area with the aim of minimising disturbance.
	. Approach spans should be slotted for light and moisture.	The deck for the conveyor is perforated to allow light. Slotting has potential for increasing sediment movement directly to the creek bed.

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	. No modification of stream bed.	Noted : Readymix confirm that the flood model preserved the existing streambed below the structure and therefore that “requirement” has already been satisfied.
	. Opening should be wide enough for full scour protection.	Noted. Readymix note that the flood assessment (refer Technical Report No 2 documented how the peak 100 year event flood velocity through the central span of the bridge would increase slightly relative to ‘existing (ie pre-bridge) conditions’. That is, the velocity would increase from 0.7m/s to 0.9m/s. For most soils such infrequent and very short duration velocities do not represent ‘scouring’ velocities. Unless there is evidence of any soils at the bridge location that could be considered to be susceptible to scour, it is our opinion that the design flood velocities through the bridge are ‘non scouring’.
	. Preserve/provide revegetation opportunity up to and below bridge.	Agreed
	. Dimensions should be confirmed.	Refer Section 5.7 and Figure 5.18 of EAR
	Road / Rail bridge	
	. Channel shape must not be modified as proposed.	Because the new bridge will be relatively close to the existing narrower but deeper North Parade culvert and the significant hydraulic efficiency of the current proposal, it is preferable from a flood conveyance perspective that variations to the current proposal be limited in their scope Concerns regarding the currently proposed rectangular railway siding bridge structure can be addressed such that a channel shape similar to the current channel can be retained through the bridge. This would be achieved either by way of providing supplementary (overbank level) culverts on each side of the bridge or having a wider two span bridge arrangement. The preferred arrangement would be addressed at the detailed design stage of the project. Readymix would liaise with the Department of Natural Resources (DNR) during the detailed design phase to ensure their requirements are met.
	New crossings should meet the following conditions:	
	. Be wide enough to accommodate dry fauna passage for the normal flow conditions, on both sides.	Agreed Note - The road/rail bridge proposal would eliminate the ponding of water at its location. This is because the current proposal has a bed level of RL 32.8m which would match the natural creek invert level immediately downstream of

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		<i>the bridge (noting that at the present time there is deposited/accumulated silt and reeds which would be removed from the creek channel as part of the transition works immediately downstream of the new bridge). This is a distinct improvement on the two current culverts (at the railway and North Parade) which have water always sitting under them because their bed levels are substantially lower than the downstream creek channel – the railway culvert bed level is RL 31.4m (or 1.4 metres lower than the downstream channel) while the North Parade bed level is RL 32.0m (or 0.8 metres lower than the downstream channel).</i>
	. Be wide enough to accommodate flows without the need to excessive armouring.	<i>Agreed</i>
	. Have banks in a form that is stable and can be fully vegetated.	<i>Agreed</i>
	. Provide openings between the bridges and maximize the access for light and water under the structures.	<i>Gap can be provided between rail and road bridge</i>
	. Any scour protection used must be by appropriately sized (relative to tractive forces) random placed rock which can be soil packed (in the voids) and vegetated.	<i>Agreed</i> <i>Note - It is important to note that the current design for the rail/road bridge is the most hydraulically efficient design since (a) its capacity matches the waterway area of the railway culvert and (b) the waterway area is (refer Figure 5.21 of EAR) provided as close as possible laterally to the narrower but deeper railway culvert.</i>
	. Wire mesh rock baskets, grouted rock and concrete products are not acceptable.	<i>Agreed</i>
11	GAS PIPELINE	
	- Potential impact on Sydney to Newcastle Natural Gas Pipeline.	<i>Noted</i>
	- Risk assessment should be conducted in accordance with AS2885.	<i>Agreed</i>
12	WATER QUALITY	
	- Potential change in water flows from basins and potential impact on vegetation;	Refer Section 5.6.2, 5.9, 6.5.3 and 6.8 of EAR
	- Will change in pH level occur; and	<i>The development site slopes in the south-easterly direction towards Angus Creek. The proposed site drainage system follows the fall of the ground and</i>
	- Quality of water to be discharged.	

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		runs towards Angus Creek. The site has been divided into four main catchments with drainage systems consisting of surface flow paths and underground stormwater drainage lines (refer Figure 5.21 of EAR). The underground drainage system has been designed to accommodate and convey the stormwater flows resulting from a 1 in 20 years ARI rainfall event (refer TR No 2). External stormwater flows would be captured and diverted around the development area where applicable. Stormwater discharging from paved areas on the site would pass through silt traps and Humeceptors (hydrodynamic source control devices) for capture and retention of a range of contaminants from stormwater runoff including oils, greases and sediments. The stormwater drainage systems would discharge into dispersal basins. After filling the basins would overflow into the Angus Creek corridor as sheet flow. The basins would be regularly inspected and cleaned as required. Avoidance of pollution of receiving waters is a high priority for the site because of the proximity of the proposed works to Angus Creek, a tributary of Eastern Creek which drains through the Nurrungy Reserve. Accordingly a Surface Water Management Plan would be prepared to minimise the impact on the environment. Monitoring of water quality would be undertaken to ensure no contamination as a result of site operations. Parameters to be monitored include pH, Dissolved Oxygen, Temperature, Conductivity, Turbidity, Total Nitrogen and Total Phosphorus.
13	HYDROLOGY/STORMWATER	
	- BCC OSD policy should be considered and the requirement for OSD.	Refer Section 5.9 of EAR Readymix has considered the BCC OSD Policy and the proposed water management system is consistent with Council's code for On-site Stormwater Detention (OSD). During the design phase the policy will be considered in further detail.
	- BCC Stormwater Policy – Needs to be adequately addressed.	Refer Section 5.9 of EAR and TR No 2 The June 2005 GW Engineers report on Stormwater Drainage and Pavement Design (which forms part of TR No. 2) describes in words and accompanying Figure 5.20 the water quality treatment “train” approach which will be used to address stormwater water quality issues. The sizing of the elements will be undertaken during the project's detailed design phase
	- Aquatic habitat should be prioritized.	Noted. Refer Sections 6.5.7 and 7.5 of EAR

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	Flood extent mapping should be undertaken at a suitable scale in particular in relation to the Onesteel site.	<i>The RDC project's survey plans show that the near (or south-eastern) corner of the "OneSteel" embankment is higher than the RL 35.5m contour. Since the corresponding 100 year ARI (1% AEP) flood level is RL 35.1m, it follows that the flood level is below the top of the embankment.</i>
	Rock boulder walls or rip rap must comply with BCC specifications.	<i>Noted.</i>
	BCC Stormwater Quality Policy and the "Water sensitive Urban Design – Technical Guidelines for Western Sydney - 2004" need to be considered for clean water areas.	<i>Noted.</i>
	Contingency and response measured should be developed for dirty areas.	Refer Section 6 of EAR <i>This will be addressed in the site EMP.</i>
	Ongoing water quality monitoring of the overflow of dirty areas is required.	Refer Section 6 of EAR <i>This will be addressed in the site EMP.</i>
	The rail and North Parade crossings should be designed to allow adequate light penetration to the creek bed.	<i>This requirement has been incorporated in the design of the bridges and will be addressed further during the detailed design phase.</i>
	Figure 5.18 does not show the bridge span as 20m and no cross section is provided.	Noted.
	Recycled Water – Use should be considered in consultation with Sydney Water.	Refer Section 5.12 of EAR
	Grass should be established in drainage lines prior to construction.	<i>Noted.</i>
	Runoff – Stormwater management must address potential for erosion and decreased water quality.	Refer Sections 5.6, 5.9, 6.5.3 and 7.2.4 of EAR
14	LANDSCAPING (5)	
	What would be the extent of planting within the Nurragingy Reserve.	<i>This is to be determined in consultation with Blacktown City Council.</i>
	Landscaping works should take account of endemic species.	Refer Section 7.9.6 and 6.5.7 of EAR

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		<i>Landscaping and rehabilitation will utilise endemic species in accordance with the VMP.</i>
	- Proposed tree planting should be a condition of consent.	<i>Noted.</i>
	- Proposed landscaping along North Parade should be maintained by Readymix. Resources should be allocated to restoration of Angus Creek on the RDC site and planting within Nurragingy Reserve.	Refer Section 6 of EAR <i>Noted.</i>
	- Proposed acoustic walls will detract from the recent upgrade to Rooty Hill Streetscape.	<i>The closest element of the proposed RDC to the Rooty Hill Town centre is the section of the siding to the west of the M7. This section of the siding would include a noise barrier and landscape plantings. A photomontage has been prepared to demonstrate the existing and expected view to the location of the proposed rail siding from Rooty Hill Town Centre (refer Appendix C).</i>
15	PROVISIONS OF BLACKTOWN DCP 1992	
	- Detailed plans at appropriate scale are required to show car parking, setbacks from buildings, vehicular circulation and landscape details.	<i>These plans will be prepared during the detailed design phase.</i>
16	CONDITIONS OF CONSENT	
	- Draft conditions proposed.	<i>Refer Appendix D for Readymix comments on specific conditions proposed in submissions to the EAR.</i>
17	STATEMENT OF COMMITMENTS	
	- Amendments proposed.	<i>Revised Statement of Commitments provided in Appendix E.</i>