



Document Control

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	(c) audit report under Schedule 5 condition 8 (by the end of June 2014); and				
	(d) any modifications to this approval,				
	the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.				

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LIST OF ABBREVIATIONS

AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AS	Australian Standard
CCC	Community Consultative Committee
EA	Environmental Assessment
EMS	Environmental Management Strategy
EPA	Environment Protection Authority
ISO	International Organization for Standardization
NZS	New Zealand Standard
PA	Project Approval

1. INTRODUCTION

1.1 PROJECT OVERVEIW

The site is located on a floodplain bordering the Murrumbidgee River and private land. The total area of the site is 200ha, 120ha of which is floodplain, 29 ha encompasses the extraction area and 1.5ha is occupied by the plant and stockpile area. Access to the site is from Roach Road and McNickle Road off the Sturt Highway.

The quarry is approved to transport 150,000tpa of product from the site. The operational life of the quarry is expected to be in excess of 30 years. The quarry will be developed into a series of cells.

There is little topsoil on the site, however all useful soil material will be stockpiled for rehabilitation works. The soil depth is typically less than 0.5m thick and abruptly passes into sand and gravel. Overburden will be placed back into exhausted cells for final rehabilitation. Overburden depth is approximately 4m followed by fine-grained sand and gravel to a depth of 20m.

Material is extracted from the reserves using a 40t excavator. Raw material is transported to the crushing plant via two dump trucks each with a 35t capacity. Aggregate stockpiles normally contain approximately 20,000t of aggregate for retail distribution.

The material is sold by loading into trucks via a front-end loader and quantified using a weighbridge. All processed material is hauled from the site, via a sealed access road (Roach Road) connecting to the Sturt Highway. Haul trucks are typically truck and dog configurations carrying 33t payloads. The haul routes are either east or west along the Sturt highway.

Progressive reclamation of the quarried areas will be carried out by completing earthworks and covering the reclaimed area with topsoil and vegetation. The project seeks to recreate indigenous vegetation areas similar to those on the surrounding land. The excavated areas will naturally fill with water to create a series of dams

A project overview is provided below in Table 1.

Aspect	Description	
Project Summary	 Continuation and expansion of the Wagga Wagga Quarry including: extraction of up to 150,000 tonnes per annum (tpa) of sand and gravel (reaching a rate of up to 250,000 tpa for short periods) from four new staged quarry pits; construction of haul roads, levee banks and sediment dams; processing and washing of raw quarried material; loading and dispatch by road of an average of 150,000 tpa (but with short term peaks of up to 250,000 tpa) of quarry products including concrete aggregates, asphalt aggregates and road base; stockpiling of topsoil for reuse in rehabilitation works; and progressive rehabilitation of the site. 	
Total Site Area	200 hectares (ha).	
Extraction Areas	51.6 ha (proposed new extraction area, including up to 22.5 ha of quarry pits); 29 ha (previous extraction area, including up to 16.8 ha of exhausted quarry pits).	
Extraction Method	40-tonne excavator.	
Extraction Rate	Up to 150,000 tpa, with short-term (project-related) peaks of up to 250,000 tpa.	
Extraction Staging	Four separate quarry pits, operated as five successive extraction stages, starting from the north and extending southwards (see Figure 3).	
Resource	In excess of five million tonnes of sand and gravel.	
Depth of Extraction	Approximately 22 – 25 m below the existing land surface, to a maximum depth of 152 m AHD, approximately 15.5 m below the average height of the Murrumbidgee River.	
Processing and Facilities	Operation of existing processing facilities including a primary feed crusher and screens, with connecting conveyor belts. The site contains an existing workshop and office amenities building. A weighbridge is located on the site access road.	
Water Management	Water produced from licensed groundwater dewatering operations to be treated on-site (settled to < 50 ppm suspended solids) then discharged to the Murrumbidgee as is current site practice. Groundwater recharge basins originally proposed for the floodplain area south of the north-westem pits have been deleted from the proposal.	
Main Products	Concrete aggregates, asphalt aggregates, road base and sundry aggregates.	
Product Transport	All products would be transported by road, via Roach Road and McNickle Road to the Sturt Highway and thence to market destinations.	
	An average of six (and up to ten) truck movements per hour of dispatch.	
Project Life	Application is open ended – "a minimum of 25 years".	
Rehabilitation	For both the two existing north-western pits and four proposed eastern pits, proposed rehabilitation is to a combination of wetlands, grassland and a revegetated riparian zone. Levee banks would be removed and the material returned to the pits. Pit banks would be regraded and revegetated and all pits allowed to fill with water to a standing water level of 168 m AHD (except Stage 1, which would be refiled to 1 m above groundwater level). This proposal is consistent with an existing rehabilitation plan for the two north-western pits, approved by Council in April 2009 and covering the period 2009 - 2011, but not yet implemented. The final outcome would be a large grassed area, with five water-filled pits with vegetation around their perimeters.	
Employment	The project would directly employ between 10 and 15 people during operation, and would support employment of an additional 10 subcontracted truck drivers.	
Capital Value	\$0.5 million.	
Construction	Construction of haul roads, levee banks and sediment dams, and surface water diversion banks (if required).	
Hours of Operation	The EA reports that "production and sales" would generally occur between 7:00 am to 5:00 pm Mondays to Fridays, and 8:00 am to 1:00 pm on Saturdays, but does not propose any limitation on hours of operation. Hanson later committed to limiting quary heavy vehicle movements to six per hour between 3:00pm and 6:00pm on weekdays.	

Table 1 - Project Overview

1.2 CONSENTS AND LICENCING

Environmental monitoring and management for the site must also meet the requirements of the consent and environmental protection licence. These are summarised in the following sections.

1.2.1 Environmental Protection Licence (EPL) No. 2433

Applies to all scheduled activities undertaken by Hanson Construction Materials at Lot 2 DP 610795 and part Lot B DP 381991 (north of Roach Road). The license provides the following:

- Performance criteria for environmental management including pollutant concentration load limits, waste limits, noise limits, air quality (odour and dust) limits;
- Monitoring and record keeping requirements;
- Testing methods;
- Pollution complaints handling; and
- Reporting requirements.

1.2.2 Project Approval

The proposed Wagga Wagga Quarry Extension Project ("the Project") was approved under Section 75J of the *Environmental Planning and Assessment Act 1979* (EP&A Act), (22 November 2011). The major components of the project are summarised in Table 1 - Project Overview. The project is described in full in Hanson's Environmental Assessment (EA).

1.3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE CRITERIA

1.3.1 Environmental Management Plans

The following environmental management/monitoring plans have been prepared in accordance with the requirements of the Project Approval:

- Air Quality Management and Monitoring Plan (PAE Holmes; May 2012).
- Noise Monitoring Program (PAE Holmes, May 2012).
- Traffic Management Plan (Insite Planning, May 2012).
- Comprehensive Water Audit (Evans & Peck; June 2012).
- Water Improvement Program (Evans & Peck; currently being reviewed).
- Water Management Plan (Martens and Associates; June 2012). incorporating:
 - o Site Water Balance
 - o Erosion and Sediment Control Plan
 - o Surface Water Management Plan
 - o Flood Management Plan
- Water Monitoring Program (Martens and Associates; June 2012).

The resultant key environmental management and performance outcomes for the site are summarised in Table 2 to create a single strategy for the site.

Aspect	Element	Objective	Performance Outcomes
		Reduce river water use;	Comply with WAL entitlements.
Wator	Surface Water Demands	Provide access to available stored water	Provide pipelines to supply processing plant to eliminate evaporation.
Water		Determine existing (baseline) water quality of discharge waters;	Surface water sampling to be undertaken from EPL monitoring locations monthly.
		Create water quality improvement program for future operations;	Compliance with trigger values specified in the Water Improvement Program
	Surface Water Quality	Identify trigger values for remedial action;	Exceedance of trigger values are reported and managed internally in accordance with the Water Monitoring Program
		Create a suitable treatment system for surface water to	Optimal TSS concentration at discharge points is achieved through implementation of recommendations of

Aspect	Element O	bjective Pe	erformance Outcomes
		achieve compliance with TSS requirements as per the site's EPL.	the Water Improvement Program
	Sediment and Erosion Control	Prevent transport of sediment off site during construction and operation;	Extraction cells to be bunded with engineered levee banks and suitable fuse plugs ;
			Sediment basins should be appropriately designed to treat plant recycled water
		Control air quality impacts of the project;	Compliance with air quality criteria as per Schedule 3, Condition 5 of the Project Approval.
Air	Air Quality	Identify trigger values for remedial action;	Management of dust levels through dust control practices listed in Section 3 of the Air Quality Management and Monitoring Plan (Attachment A).
		Outline a monitoring program for air quality (dust);	Dust and particulates monitored continuously at monitoring locations identified to protect nearby sensitive receptors.
		Identify locations for continuous monitoring for fine particulates which represent sensitive receptors;	Any dust incidences to be reported internally and effectively managed.
			No dust complaints from nearby sensitive receptors.
Acoustics	Noise	Maintain current low potential for noise impacts to existing surrounding residential communities;	Compliance with noise conditions specified in Schedule 3, Condition 1 of the project approval.
		Provide a good practice noise management plan.	Consistency with industry noise emissions factors for plant and machinery.

Aspect	Element	Objective	Performance Outcomes	
			Monitoring of noise emissions from specified monitoring points (Attachment B).	

Table 2 - Summary of Environmental Management Plans

1.3.2 Non-Compliance

Non-compliance is defined as an instance where environmental performance fails to meet the statutory limit. Procedures in the event of non-compliance is outlined in the attached monitoring plans, however the general procedure is:

- 1. Non-compliance is reported by personnel to the site manager.
- 2. Under the site manager's direction, the source of the non-compliance is to be investigated and identified.
- 3. Mitigation works/measures are to be developed and actioned as soon as possible. Notify Regional Environmental Manager who contacts relevant government agencies.
- 4. Investigate possible amendments/alterations to treatment systems to avoid future non-compliance.
- 5. Prepare an incident report for the site manager to include in Annual Review for DP&I and EPA. Additional reporting may also be required by government agencies or DP&I.

Where non-compliance is likely to cause significant environmental harm, relevant government agencies are to be notified promptly by the Regional Environmental Manager.

1.4 PERSONNEL STRUCTURE AND RESPONIBILITIES

The following table summarises the organisational structure at Wagga Wagga Quarry and each roles level of responsibility in ensuring compliance with Environmental policies.

ROLES	RESPONSIBILITY	
Operations Manager	Will ensure adequate resources are available to enable implementation of this Strategy and all Environmental Management Plans and Program.	
Quarry Manager	Accountable for the overall environmental performance of the Mine, including the following.	
	 Key performance outcomes of this Strategy. 	
	Evaluation of Compliance.	
	 Corrective and Preventative Actions. 	
	Incident Reporting.	
	Dispute Resolution.	
	Review of this Strategy.	
	Consultation Strategies.	
	Emergency preparation, response and investigation.	
Quarry Supervisor	Ensure the implementation of this Strategy, including the following.	
	 Ensure employees are competent through training and awareness programs. 	
	Monitoring.	
	 Corrective Action and Preventative Action in consultation with the Quarry Manager. 	
	Consultation Strategies.	
	Complaints management.	
All personnel	Ensure compliance with this EMS including consultation strategies approved by the Environmental Supervisor.	

Table 3 - Roles and Responsibilities

1.5 ORGANISATIONAL STRUCTURE

The Hanson Construction materials structure of environmental personnel and their roles/responsibilities is shown in Figure 1. Although personnel have specific accountabilities at different levels of work, all staff members, contractors and visitors are accountable for:

- Complying with relevant legislation including EPL's;
- Complying with this EMS and associated documents as they apply;

- Communicating any information they become aware of in relation to environmental management; and
- Taking appropriate action to mitigate environmental impacts.



Figure 1: Organisational Structure environmental responsibilities

2. SUMMARY OF OPERATIONS DURING REPORT PERIOD

The following provides a summary of the works associated with the project, for the reporting period 1st January 2012 to 30th June 2012.

2.1 OVERBURDERN REMOVAL AND LEVY BANK CONSTRUCTION

- Stripping of overburden commenced in March 2012
- Temporary Haul road constructed. The main haul road which was constructed was significantly damages by flooding.
- Stage 1 was stripped and the overburden was placed into the designated levy bank walls. The final RL following stripping sits at 6m below 177AHD.
- The levy bank constructed provides adequate protection for 1 in 50 year flood event.
- Fuse Plugs have been installed in both ends of the pits.
- Martens and Associates have been appointed to design the levy bank rectification for the breach in the bank which occurred in the 2010 floods. Two options are currently being considered. These are: Sheet Piling & Mega Sand Containers.

2.2 QUARRYING ACTIVITIES

- Temporary haul constructed due the inability to access the normal route due to damage from flood and rain events.
- No material extracted in the reporting period.

2.3 REHABILITATION

- Self-seeding has been monitored.
- Rehabilitation works scheduled for mid 2013.

3. ENVIRONMENTAL MANAGEMENT, MONITORING AND PERFROMACE

3.1 NOISE MANAGEMENT

3.1.1 Current Operational Noise Management Measures

Identification of unacceptable noise impacts will be triggered by an operator's observation during operations or a noise complaint from adjacent neighbours. Identification of any significant sources of noise by investigation of operations will be undertaken and if required, activities and processes will be modified. Upon identification of an unacceptable noise impact, corrective actions are implemented by the Site Manager. The following is an overview of the current practices employed on site to reduce noise.

3.1.2 HAULING TRUCKS

Speed limits are between the site office and Roach Road are maintained internally at 20km/h. The current speed limit of McNickle Road and Roach Road is 80 km/h. These limits are adhered to by all drivers accessing the site thereby lessening the likelihood of increased noise impacts from fast moving vehicles. The haul road constructed for the new extraction area will create less internal traffic noise because it is designed to run the shorter distance between the processing plant and the extraction area.

3.1.3 EMBANKMENTS

Embankments are established using the topsoil and overburden removed from the extraction zone at a height of 3.2 metres. The location of these bunds acts to block the direct line-of-sight to the nearest residence and will be completed before extraction takes place.

3.1.4 MOBILE EQUIPMENT

All mobile equipment is turned off when not in use.

3.2 NOISE MONITORING

Monitoring will be carried out at the nearest sensitive receptors to operations to establish the project noise level at receptors for compliance purposes. Unattended real-time noise monitoring will be carried out using four noise monitors. **Figure 1 -Noise Monitoring Locations** shows the proposed locations of the real time noise monitors; however they may be relocated as required. Real-time noise monitors should be configured such that when the criteria are exceeded, real time audio is captured for an appropriate duration to aid exceedance identification.

The Project Approval states that the proponent shall ensure that the noise generated by the project during operation does not exceed the criteria in Table 4 - Noise Limits. 'Day' is defined as the hours between 6:00am and 6:00pm Mondays to Friday and 8:00am to 1:00pm on Saturday but does not include public holidays. Only a dewatering pump will run outside of these hours and it noise levels from this source must remain below background.





3.2.1 Noise Limits

Location	Day
Kulleroo 2	39
Riverglen	40
All other privately owned land	35

Table 4 - Noise Limits

3.2.2 Results

Noise Monitoring is schedule to be conducted when full quarry operations resume in the project area. An onsite whether station will be installed and commissioned in October 2012.

3.2.3 Non Conformances

• Testing was not completed in the reporting period.

4. AIR QUALITY MANAGEMENT

A site inspection was undertaken to evaluate dust generating activities associated with current operations. The following activities have been identified as key areas for potential dust generation:

- Wheel generated dust from movement of vehicles on unsealed roads within the site.
- Movement of machinery at the processing plant (front end loaders, excavators and dump trucks).
- Scraping of overburden.
- Crushing and screening of aggregate.
- Materials handling and conveying.
- Emplacement of materials within the site.
- Wind erosion of stockpiles/exposed areas.

4.1 CLOSEST SENSITIVE RECEPTORS

The locations of the closest sensitive receptors are identified in **Table 5**. The locations of these receptors relative to the site are shown in **Figure 2**. Kullaroo represents Kullaroo 1 in the Air. The project site comprises of two mining lease areas, the old extraction area located to the north-north-west of the processing plant and the new extraction area located to north-northeast of the processing plant.

Residence ID	Distance to Site Boundary	Distance to Processing Plant	East (m)	North (m)
Kullaroo	0.2	1.7	527572	6117801
Sweetwater	0.2	1.4	528569	6117275
Riverglen	0.7	1.2	529831	6116625
Globine	0.5	1.0	527908	6115201
Pomigalarna	0.4	1.5	526301	6116493

Table 5 - Closest Sensitive Receptor Locations



Figure 2 - Locations of Closest Receptors

4.2 DUST MANAGEMENT CONTROLS

Identification of a dust incident event will be triggered by evidence of unacceptable visible fugitive emissions on the site or a dust complaint from adjacent neighbours. Upon identification of a dust incident, one or more of the following corrective actions will be implemented by the Site Manager. Identification of any significant sources of emissions by visual inspections will be undertaken and if required, activities and processes will be modified. If requested, air quality monitoring should be conducted at the complainant's property. Specific dust management practices, that address the potential sources identified in **Section 2.1** *of the Air Quality Management Plan* are summarised below.

4.2.1 Hauling

When dusty conditions are identified by the Site Manager the water cart is sent out to water the haul roads. The frequency of watering is determined by the availability of staff to operate the water cart.

- Speed restrictions between the public road and site office are applied at 20 km/h.
- Loads are required to be covered when haul trucks exit the site.

- The new haul road (currently under construction) minimises the distance travelled by taking the most direct route from the new extraction area to the processing plant.
- The public road is sealed from the site entrance resulting in less wheelgenerated emission from product haul trucks on public roads.
- Speed limit on the public road is restricted to 80 km/h.

4.2.2 Extraction

- The machinery used to scrape overburden also has the facility to haul and dump the material, thereby lessening the handling of the material and resulting in fewer emissions.
- Due to the location of the quarry operation, the sand and aggregate is being extracted from below the water table therefore the moisture content of the product is high.

4.2.3 Processing

- > Bins in the processing plant have three sided enclosures.
- Two of the four screens onsite have water piping that can be used to dampen the material during the screening process.
- Transfer of sand from the processing plant to the stockpile is delivered using a pipe that mixes the sand with water, therefore no emissions are produced during this process.

4.2.4 Wind Erosion

- The planting of the wildlife park adjacent to the operation acts as a windbreak near the stockpiles and other exposed areas.
- Overburden stockpiles are seeded during the course of the operation to reduce wind erosion.

4.3 DUST DEPOSITION MONITORING

4.3.1 Dust Deposition Monitoring

Four dust deposition gauges have been maintained at the site since 2001 to determine dust deposition levels at the site. Dust deposition gauges (DDGs) are operated in accordance with:

- NSW OEH Approved methods for the sampling and analysis of air pollutants in NSW (NSW DEC 2005).
- Australia/New Zealand Standard: Methods for sampling and analysis of ambient air

Monitoring for dust deposition is conducted at four sites across the operation at a frequency of one-month continuous basis. Current locations of each dust deposition gauge (DDG) are illustrated in **Figure 3.**



Figure 3 - Dust Deposition Gauge (New Locations)



Figure 4 - Dust Deposition Gauges (Original Location)

4.4 LIMITS

The operation of the quarry must comply with conditions of air quality impact assessment criteria (Condition 5 of Schedule 3 of the project approval), operating hours (Condition 2 of Schedule 3 of the project approval) and air quality management (Conditions 6 and 7 of Schedule 3 of the project approval). All reasonable and feasible avoidance and mitigation measures must be employed so that particulate matter emissions generated by the project do not cause an exceedance of the criteria shown in **Table 6, Table 7 & Table 8**.

Pollutant	Averaging Period	^d Criteria
Total Solid Particulates (TSP)	Annual	² 90 μg/m³
Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 μg/m ³

Table 6 – PM10 - Annual Limits

Pollutant	Averaging Period	^d Criterion
Particulate matter < 10 µm (PM ₁₀)	24 Hour	Α 50 μg/m ³

Table 7 – PM10 - 24 hour Limits

Pollutant Averaging Period		Maximum Project Contribution	Maximum Total Deposited Dust Level	
^c Deposited Dust	Annual	^b 2/g/m2/month	* 4 g/m²/month	

Table 8 - Deposited Dust - Annual and Monthly Limits

4.5 RESULTS

4.5.1 Dust Disposition Results

Location	Date	Result	Comments
Site 1	02/02/2012	1.8 g/m2/month	
Site 2	02/02/2012	6.0 g/m2/month	Exceedance noted to close proximity civil works being completed.
Site 3	02/02/2012	2.7 g/m2/month	
Site 4	02/02/2012	8.4 g/m2/month	Exceedance noted to close proximity civil works being completed.
Site 1	15/06/2012	35 g/m2/month	Flood effected. Gauges not accessed since February 2012.
Site 2	15/06/2012	37.3 g/m2/month	Flood effected. Gauges not accessed since February 2012.
Site 4	15/06/2012	3.7 g/m2/month	Flood effected. Gauges not accessed since February 2012.

Note: These results have been taken from the original locations as per Figure 4. The DDG's have been relocated to the locations as per the Project Air Management Plan from DDG1 through to DDG5 as per Figure 3.

4.5.2 PM10 Results

The Dust Track monitor is schedule to be commissioned in October 2012. As such no results have been monitored.

4.5.3 Non-Conformances

As above the Dust Disposition gauges on the 15th of June 2012 returned results which were significantly higher than the allowable limit. These reading were a result of the gauges being inaccessible for a number of months, due to the flood events which occurred at the begging of the year. Routine testing to follow post June 2012.

5. TRAFFIC MANAGEMENT AND CODE OF CONDUCT

5.1 TRAFFIC MANAGEMENT CONTROLS

5.1.1 General Requirements

Heavy vehicle drivers hauling from Wagga Wagga Quarry must:

- Have undertaken a Site Induction carried out by an approved member of the Quarry staff or suitably qualified person under the direction of the Quarry management;
- ii) Hold a valid driver's licence for the class of vehicle that you operate;
- iii) Operate the vehicle in a safe manner within and external to the Quarry site;
- iv) Comply with the direction of authorised site personnel when within the site;

5.1.2 Heavy Vehicle Speed

Increased speed means not only an increased risk of crashing but also increased severity if a crash occurs. A study undertaken for the Australian Transport Safety Bureau found that travelling 10 km/h faster than the average traffic speed can more than double the risk of involvement in a casualty crash. (source Roads and Maritime Services (RMS) previously known as Roads and Traffic Authority (RTA)).

There are two types of speeding:

- i) Where a heavy vehicle travels faster than the posted speed limit; and
- ii) Where a driver travels within the speed limit but because of road conditions (e.g. fog or rain) this speed is inappropriate. (source RMS).

Drivers and truck operators are to be aware of the "Three Strikes Scheme" introduced by the Roads and Maritime Services which applies to all vehicles over 4.5 tonnes. When a heavy vehicle is detected travelling at 15 km/h or more over the posted or relevant heavy vehicle speed limit by a mobile Police unit or fixed speed camera, the Roads and Maritime Services will record a strike against that vehicle. If three strikes are recorded within a three year period, the Roads and Maritime Services will act to suspend the registration of that vehicle (up to three months).

More information is available from the Roads and Maritime Services website.

Vehicle speed on public roads is enforced by the NSW Police Service.

The speed limit within the quarry site is 20 km/h which is to be strictly maintained.

Drivers are to observe the posted speed limits, with speed adjusted appropriately to suit the road environment and prevailing weather conditions, to comply with the Australian Road Rules. The vehicle speed must be appropriate to ensure the safe movements of the vehicle based on the vehicle configuration.

5.1.3 Heavy Vehicles Driver Fatigue

Fatigue is one of the biggest causes of crashes for heavy vehicle drivers. The Heavy Vehicle Driver Fatigue Reform was therefore developed by the National Transport Commission (NTC) and approved by Ministers from all States and Territories in February 2007.

The heavy vehicle driver fatigue law commenced in NSW on 28 September 2008 and applies to trucks and truck combinations over 12 tonne GVM (however there are Ministerial Exemption Notices that can apply).

Under the law, industry has the choice of operating under three fatigue management schemes:

- i) Standard Hours of Operation
- ii) Basic Fatigue Management (BFM)
- iii) Advanced Fatigue Management (AFM)

All heavy vehicle drivers operating out of the Wagga Wagga Quarry are to be aware of their adopted fatigue management scheme and operate within its requirements.

5.1.4 Heavy Vehicle compression braking

Compression braking by heavy vehicles is a source of irritation to the community generating many complaints especially at night when many residents are especially sensitive to noise.

In some instances compression braking is required for safety reasons however when passing through or adjacent to residential areas or isolated farmsteads a reduction in the speed of the vehicle is recommended to reduce the instances and severity of compression braking.

Due to the relative proximity to residential homes in Riverview Estate and along McNickle Road drivers are requested to limit the noise created in this area as much as possible.

Brakes must be applied so as not to create excessive noise that could disturb local residents where possible. Compression braking within or adjacent to Riverview Estate or other residential areas or isolated residences should only be used if required for safety reasons.

5.1.5 Heavy vehicle noise

The operating hours for transportation of materials off-site are:

Monday – Friday (except Public Holidays) Saturdays Sundays and Public Holidays (Condition of Consent: Schedule 3_Part 2_"Operating Hours") 6:00 am to 6:00 pm 8:00 am to 1:00 pm No activities

At commencement of the working day it is not unusual for drivers to arrive early and wait for opening. If this occurs drivers are to wait with engines off.

To reduce the impact of vehicle noise at commencement of the working day heavy vehicles waiting for the quarry to open are to wait with engines off when possible.

5.1.6 Load covering

Loose material on the road surface has the potential to cause road crashes and vehicle damage.

All trucks departing from the site loaded with material are required to have an effective cover over their load for the duration of the trip. The load cover may be removed upon arrival at the delivery site.

All care is to be taken to ensure that all loose debris from the vehicle body and wheels is removed prior to leaving the site.

Drivers must ensure that following tipping that the tailgate is locked before leaving the site.

5.1.7 Vehicle departure and arrival

Heavy Vehicles travelling in close proximity on single lane public roads can be of concern to light vehicle drivers as well as increasing noise through or adjacent to residential areas. To alleviate public concern and increase road safety, heavy vehicles leaving the Quarry should be separated by a minimum five minute interval.

It is difficult to schedule arrivals to the Quarry (except at the commencement of work for the day) due to the different directions of approach from external jobs and the varying job completion times, however, when a driver becomes aware, through visual contact or two-way contact between trucks, that they will arrive at approximately the same time then they are to ensure that there is a suitable gap between vehicles.

To alleviate public concern and increase road safety heavy vehicles leaving the Quarry should be separated by a minimum five minute interval.

5.1.8 Breakdowns and incidents

In the case of a breakdown the vehicle must be towed to the nearest breakdown point as soon as possible. All breakdowns must be reported to the RTA TMC (Transport Management Centre) on 131700 and the vehicle protected in accordance with the Heavy Vehicle Drivers handbook.

To ensure that traffic impacts are minimised in the event of an incident, rapid response from the haulage company is required. In order to ensure rapid response to incidents drivers must contact the RTA TMC on 131700, their shift manager and Wagga Wagga Quarry Manager as soon as the stranded vehicle and load is safely secured.

If there is a product spill while loading/unloading or en route the driver must:

- i) Immediately warn persons in the area who may be at risk;
- Inform their shift supervisor/owner. If this occurs on McNickle Road or Roach Road or the vehicle is owned or contracted by Hanson Construction Materials Pty Limited the Wagga Wagga Quarry Manager must be immediately informed so that emergency services can be contacted and a cleanup initiated;
- iii) All spills must be adequately cleaned up and waste disposed of in an acceptable and environmental manner;
- iv) Put out warning triangles where it is safe to do so.

5.1.9 Wiradjuri walking track & pedestrians/cyclists

Drivers are to be aware of the Wiradjuri Walking Track which has a road crossing point for pedestrians/cyclists in McNickle Road at the Bagley Road intersection and

continues north down McNickle Road on the east side past the Roach Road intersection.

5.2 TRAFFIC INCIDENT REGISTER

Date	Incident Details
	Nil Incidents Reported

5.3 CODE OF CONDUCT REGISTER

Transport Company	Number of drivers signed up to date
	Nil to report. Code of conduct is scheduled to be presented to
	the CCC for approval.

5.4 NON COMPLIANCES

Nil to report

6. WATER MANAGEMENT

6.1 WATER MANAGEMENT CONTROLS

A fundamental requirement for any system that uses a sediment basin or pond to retain fine silt is that the hydraulic loading rate is sufficiently low to allow settlement of the majority of silt while the water transits across the basin or pond.

Based on sedimentation theory, there is an inverse logarithmic relationship between particle size and the ration of the surface area to the flow rate (m2/m3/s) required for particles to settle out of suspension. Based on data quoted in Section 6.3.5 of *Managing Urban Stormwater: Soils & Construction* (Landcom, 2004).

6.1.1 Water Management Review

A Water Management Review is currently being completed by Evans & Peck on behalf of Hanson Construction Materials Pty Ltd.

The report will be prepared to address the requirements of Clauses 8 and 9 of Schedule 3 of the Project Approval, namely:

8. Within three months of the date of this approval, the Proponent shall commission independent surface and groundwater expert/s, approved by the Director-General, to undertake a comprehensive audit of current and proposed water management practices and infrastructure on the site. The Comprehensive Water Audit shall:

(a) fully describe and audit all current site water management practices, including with respect to surface water, groundwater, water licensing, flooding, drainage, process water usage and management, wastewater disposal practices and discharges of water from the site (whether to the surface or underground environment);

(b) identify all reasonable and feasible measures to improve water management and monitoring on the site, having regard to existing water management practices and the approach proposed within the EA;

(c) Identify all reasonable and feasible measures to improve the management of process water on the site, with particular reference to opportunities for improved and/or increased recycling/reuse of process water;

(d) Recommend design parameters for process water systems on the site, including with respect to water recycling/reuse systems and constructed wetland systems; and

(e) Be undertaken in consultation with OEH, NOW and the Council, and include consideration of any additional water management issues identified through this consultation.

9. Unless otherwise agreed with the Director-General, the Proponent shall submit a copy of the Comprehensive Water Audit report to the Director-General, OEH, NOW and the Council within six months of it commissioning the audit. The Audit report must be accompanied by a Water Management Improvement Program, based on the Audit report's recommendations, to improve water management practices on the site and to ensure continuous improvement over the life of the project, including a program of proposed timeframes for implementation. Should the Proponent propose to not implement one or more of the Audit recommendations, it must provide detailed justification to this effect.

6.2 LIMITS

6.2.1 Licencing

Wagga Wagga Quarry currently holds licences from the following sources:

- Surface water from the Murrumbidgee River 100 ML/year;
- Groundwater from the alluvial aquifer 360 ML/year.

Although these are two sources are licenced separately, the surface and groundwater at the site are so closely linked that they effectively constitute a single source. The water balance analyses indicate that, for any of the proposed options described in this report, the net (extraction – return flow) would be significantly less than the available licenced volume (460 ML/year).

The remaining regulatory issue relating to water licencing is that the current NSW water licencing regime does not account for return flows to either the groundwater or surface water sources. It is understood that a draft policy to address this issue was prepared by NOW a few years ago, but has not yet been acted upon. This anomaly needs correction.

In the meantime, however, it appears that Hanson will need to acquire sufficient licences to account for a 'take' of up to 800 ML/year.

6.3 RESULTS

6.3.1 Usage

Location	Usage (ML)	Average/Month
Syphon	67.6	11.2
8" Dewater	Nil	Nil
6" Dewater	Nil	Nil
River 1	6.6	1.1
River 2	2.1	3.6
Recycle	Nil	Nil

Note: Due to Floods which occurred in March 2012 all records regarding previous water readings where lost. The above is an average of readings taken from November 2011 to the most current reading.

6.3.2 Bore Water Analysis

Data loggers have been installed in the Bores and results will be made available in the next reporting period.

7. COMMUNITY RELATIONS

7.1 STAKEHOLDER AND COMMUNITY CONSULTATION

The Company will undertake consultation with all relevant stakeholders to allow for consideration of all reasonable views and timely feedback to any issues that are raised. The approach to be taken would be constructive to ensure that the required environmental management of the Project meets with expectations described in the *Environmental Assessment* and subsequent review of any approvals. All personnel will be responsible for ensuring that any issues raised are dealt with through the appropriate pathways as stated by the relevant Management Plans.

Relevant stakeholders include, but are not limited to the following.

- Department of Planning and Infrastructure.
- Office of Environment and Heritage.
- NSW Office of Water.
- Community Consultative Committee.
- Local community.

Communication, consultation and information dissemination strategies will include the following.

- Regular community newsletters and meetings.
- Regular meetings Community Consultative Committee.
- Individual meetings on request with surrounding landholders and interested community groups.
- Placement of all relevant environmental management monitoring and other relevant documents on the Company's website.

7.2 COMPLAINTS HANDLING

In order to receive record and respond to any complaints in a timely manner, the Company has established the following mechanism for receiving complaints.

- Directly via the 24-hour, 7 day per week Company's general Emergency Line (1800 882 478). This number will be advertised widely in the local media, on signage at the Site entrance and on the Company web site www.hanson.com.au.
- Directly via a dedicated email address which will be advertised in a similar manner to the Community Information Line.
- Indirectly via the relevant government agencies.

In addition, consultation will be held with the community as part of the Company's standard consultation procedures. These meetings will provide a further forum at which complaints maybe received.

All complaints will be registered in a database and responded to within one business day from the receipt the complaint. The following information will be recorded (where it can be reasonably obtained) in the database.

- The date / time the complaint was made.
- Complainant's name.
- Complainant's telephone number and/or email address.
- Nature of complaint.

The nature of the response will depend on the nature and source of complaint but will include one or more of the following actions.

- 1. The complaint will be reviewed by the Quarry Manager or their delegate to determine the nature, date and time of the air quality emission.
- 2. Liaison with the complainant to ascertain all details and to identify the nature and source of the complaint and provide supplementary details for the log. Details recorded in the log will include:
 - the date and time of the complaint;
 - the method by which the complaint was made;
 - details of the person making the complaint;
 - the nature of the complaint;
 - action taken in relation to the complaint including any follow-up contact; and
 - if no action, the reason why.
- 3. As appropriate, the initiation of monitoring or other investigations to verify or otherwise the exceedance or non-compliance with approval or licence condition(s).
- 4. Initiation of appropriate changes in operating practices or procedures.
- 5. Conducting a follow-up interview with the complainant to determine their level of satisfaction with the response and the resultant outcome.

A copy of the complaint report will be supplied to the complainant, if requested. The complaints database will be updated on the Company's website quarterly and a summary of the complaints received in each 12 month period will also be included in each *Annual Report*. The Quarry Supervisor will be responsible for the recording of the complaint, response action requirements and updating of the database and website.

7.3 SUMMARY OF COMPLAINTS

Risk Number	Report	Date/Time	Complainant	Comments
				Nil to report

7.4 COMMUNITY CONSULTATION MEETINGS

Meeting Date	Attendees	Comments
		Nil to report. First CCC meeting scheduled for August 2012.

8. CORRECTIVE AND PREVENTATIVE ACTIONS

Where an exceedance of the relevant assessment criteria are observed the Quarry Manager, or their delegate, may identify a range of corrective and preventative actions in accordance with the procedures identified in the relevant Management Plan.

Corrective and/or preventative actions will be assigned to relevant Company personnel. Actions will be communicated by the Quarry Manager, or their delegate, internally through planning meetings and toolbox talks and outstanding actions will be monitored for their effectiveness upon completion.

A copy of the investigation report and regular updates on the status of the identified corrective and/or preventative actions will be provided to the relevant government agencies and, if required, any complainant. In addition, a copy of all reports will be included in the Annual Review.

9. INCIDENT REPORTING

The Company shall notify the relevant government authorities of any incident associated with the Quarry as soon as practicable after the Company becomes aware of the incident. Within 7 days of the date of the incident, the Company will provide the relevant agencies with a detailed report on the incident.

10. COMPETENCE TRAINING AND AWARENESS

All personnel shall undergo environmental management awareness training as a component of the competency based site induction program. The following areas will be covered in the induction:

- Noise management.
- Air quality management.
- Soil and water management, including hydrocarbon and chemical management.
- Landscape management.
- Reporting of incidents.

The Quarry Supervisor will be responsible for ensuring the appropriate Environmental Management training is included in the induction.

END OF REPORT