Integrated Environmental Management System (IEMS)

May 2018

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Table 1: Abbreviations

CIP	Continuous Improvement Program
EA	Environmental Authority
EHP	Department of Environment and Heritage Protection
EICR	Environmental Incident and Complaint Register
ESC	Erosion and Sediment Control
GED	General Environmental Duty
IEMS	Integrated Environmental Management System
SMP	Stormwater Management Plan
WMR	Waste Management Register

1.0 EXECUTIVE SUMMARY

1.1 Company History

Commencing in 1957 in the Ipswich and Somerset Region, Zanows' commenced supplying natural sand and gravel products to the construction industry, local council and landscaping market. Zanows' Earthmoving was a key part of the business in the early days working for local construction companies, farmers and councils with a fleet of earthmoving and extraction equipment.

In 1997 the company commenced extraction of natural sand and gravel products at Fernvale. The range of products grew from natural sand and gravel to soils, crushed aggregates, horse arena sand, gabion, drainage and rock products. The Fernvale site is now a major supplier to the construction and landscaping industry in the SEQ Region.

In 2010 a concrete batching plant was constructed at the Fernvale quarry which supplies high quality concrete to the Somerset and Ipswich Region using Zanows Natural Products and providing the full range of concrete products to customers in the region.

In 2013 the production of a full range hard rock quarry products was commenced at Kalbar for supply to the Ipswich, Scenic Rim and Somerset Regions. The Kalbar quarry supplies aggregates, road-bases, pre-coat materials and specialty rock products to the construction industry in the region.

Proudly family owned, operated and South East Queensland based, Zanows' Concrete and Quarries remain committed to the supply of quality construction materials at a competitive price in the SEQ region.

1.2 Mission Statement:

Zanows Concrete and Quarries recognises environmental management as a high priority in its overall operations and management, and is committed in ensuring environmental impacts in all forms are controlled and mitigated.

1.3 Environmental Policy

Zanows Concrete and Quarries is committed to minimising environmental harm and will strive to conform to the principals of ecologically sustainable development. It is committed to conducting its activities in compliance with environmental legislation and will strive to achieve best practice environmental management.

1.4 Management Commitment

Zanows Concrete and Quarries management have made a commitment to regularly review environmental performance, procedures and infrastructure with the implementation of a Continuous Improvement Program (CIP).

Management understand the importance of environmental awareness throughout the organisation and have made a commitment to undertake environmental training in the induction process. Current staff receive regular 'tool-box' training to ensure they are aware of their environmental responsibilities and the company's environmental performance.

1.5 IEMS Objective

Zanows Concrete and Quarries has developed this IEMS with the following objectives identified:

- Enhance environmental performance of all Zanows Concrete and Quarries sites and operations;
- Ensure compliance with regulatory and legislative requirements;
- Set objectives and mechanisms to achieve these objectives;
- Provide a consistent structure and management across the organisation;
- Conduct regular reviews of environmental performance with a commitment to continuous improvement across all sites and operations.

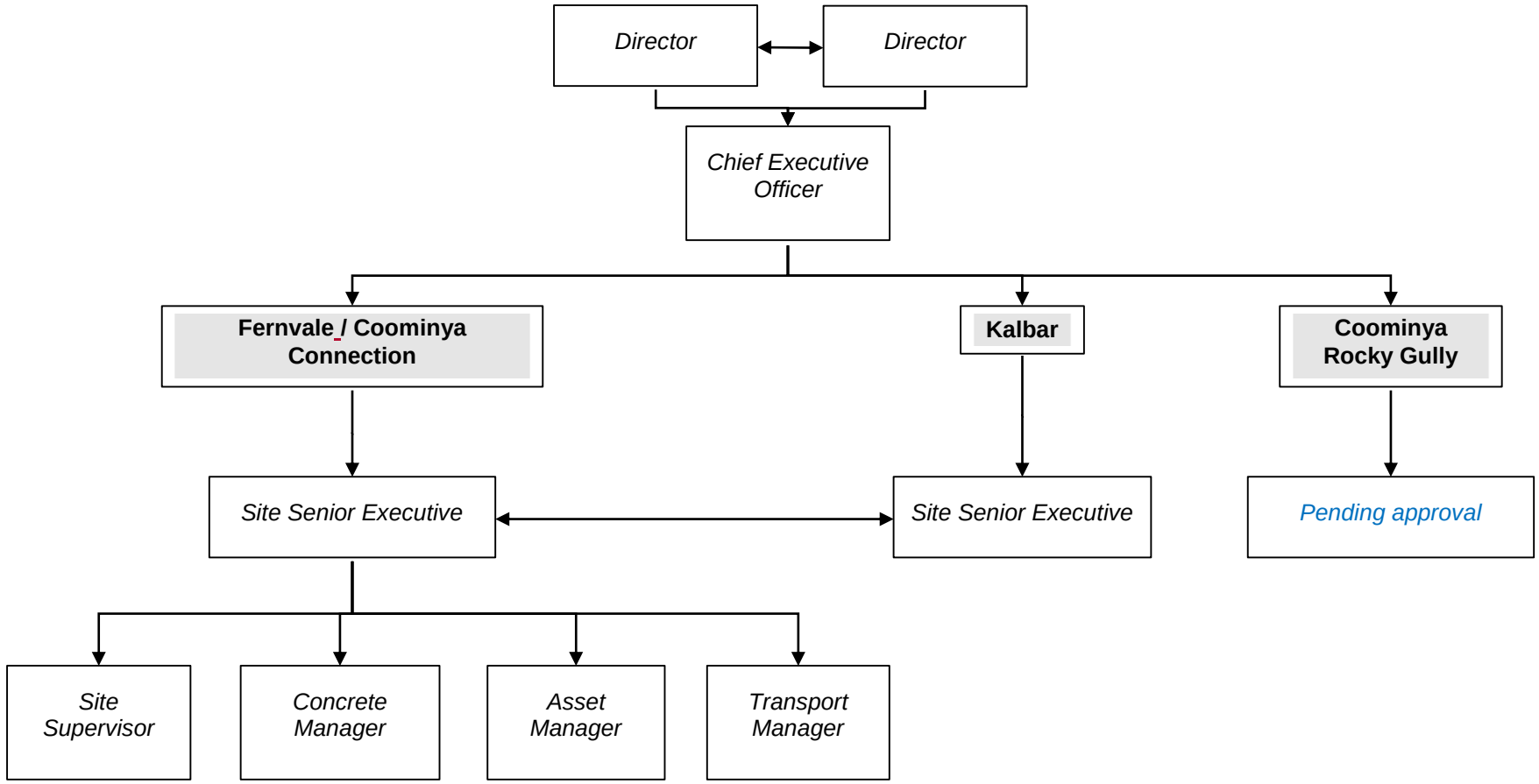
1.6 Support and Communication

Zanows Concrete and Quarries has adopted a top-to-bottom whole of organisation approach to environmental management across the different operations and sites. All management and staff are responsible for protection of environmental values, minimising potential environmental nuisance and reporting of potential or actual environmental issues.

In addition to this IEMS, site specific environmental documentation including procedures have been developed and implemented at the different sites reflecting the different operations and potential impacts. Documented procedures and environmental registers can be found in Appendices A – F at the end of this document.

Zanows Concrete and Quarries undertake regular staff training to ensure all staff are aware of their environmental responsibilities, commitments and objectives made by management and mechanisms to achieve those objectives with continuous improvement in environmental performance. All staff are encouraged to report any actual or potential environmental issue they may identify with open communication encouraged throughout the organisation.

2.0 ORGANISATIONAL STRUCTURE



2.1 Environmental Responsibilities

Director

- Provide direction and leadership of the importance of environmental performance throughout the organisation
- Provide direction and support for best-practice environmental activities, initiatives and procedures
- Provide direction and support for continuous improvement of environmental performance across all sites
- Provide direction and support to ensure environmental awareness throughout the organisation
- Review Continuous Improvement Program and external audit recommendations
- Investigate new and emerging technologies to improve environmental performance

Chief Executive Officer

- Ensure best-practice environmental management measures and procedures are implemented and maintained across all sites
- Liaison with regulatory agencies in response to environmental incidents or complaints
- Development of environmental management systems and procedures that are consistent across all sites
- Analysis and reporting of outcomes from 6-monthly review of environmental performance indicators
- Regular evaluation of environmental performance and develop program of works where improvements can be made
- Develop and maintain a Continuous Improvement Program (CIP) that is consistent across all sites

Site Senior Executive

- Implementation of environmental management systems and procedures
- Regular inspections and reviews of environmental measures implemented
- Maintenance of environmental registers
- Collation of information and data from inspections, review and registers for analysis and review

- Conduct 6-monthly internal review of environmental performance indicators
- Provide on-going environmental awareness training to all staff
- Provide initial response for corrective actions and notification of environmental incidents or complaints
- Ensure corrective actions are undertaken as soon as practicable and are effective
- Implementation of program of works identified from performance evaluations

All staff

- Awareness of the organisations environmental responsibility and commitment
- Regular inspection of environmental measures implemented to ensure effectiveness
- Notification of environmental incidents, complaints or environmental measure failure/ineffectiveness

3.0 PERFORMANCE EVALUATION

To monitor the effectiveness of the environmental measures adopted, a regime of regular inspections and audits must be developed and implemented. The table below identifies the environmental aspects for the various activities and operations and the frequency of inspections, audits and reporting (refer Table 1). The information and data collected can then be reviewed and performance evaluated thus ensuring improvements in performance are identified and areas where improvements can be made are addressed and action plans developed.

Table 1: Environmental aspects, inspection/review frequency and performance indicators

Aspect / Objective	Task	Frequency	Performance Indicator
Air			
Minimise dust emissions	Inspection of haul roads, raw material & end-product stockpiles, loading / unloading of raw material	Continuously throughout daily operation	No dust complaints received
	Utilise dedicated water truck	As required throughout daily operations	No dust complaints received
	Inspection of dust minimisation equipment i.e. shrouds	Weekly	No dust complaints received
	Regular removal of collected material from dirt removing devices at site exit	Weekly	No dirt/material tracked onto road
	Record vegetation health & growth on exposed areas	Weekly	No dust complaints received
	Record meteorological conditions during operations	Daily for extractive operations As required when blasting	No dust complaints received
Minimise combustion emissions	Inspection of equipment for combustion emissions	Continuously throughout daily operation	No complaints received

Aspect / Objective	Task	Frequency	Performance Indicator
Water			
Minimise contaminated stormwater	Inspection of stormwater capture dams	Weekly under dry weather conditions	No contaminated stormwater released from site
		Within 24 hours of rainfall event i.e. 20mm in 1 hour	No contaminated stormwater released from site
	Inspection of erosion and sediment control infrastructure	Weekly under dry conditions	Minimal erosion and sediment movement evident and integrity of measures maintained
		Within 24 hours of rainfall event i.e. 20mm in 1 hour	Minimal erosion and sediment movement evident and integrity of measures maintained
	Inspection of re-fuelling hardstand pad for integrity and cleanliness	Daily	No visible hydrocarbon contamination
Controlled release of flood waters	Compliance with EA conditions	As required	Compliance with EA conditions
Noise			
Minimise noise emissions	Inspection of acoustic barriers including bunding	Weekly	No noise complaints received
	Operate during approved hours only	Daily	No noise complaints received
	Maintenance of haul roads and speed limits enforced	Continuously throughout daily operation	No noise complaints received

Aspect / Objective	Task	Frequency	Performance Indicator
	Record meteorological conditions during blasting operations	As required when blasting	No noise/vibration complaints received
Land			
Minimise land contamination	Inspection of hazardous substances storage area	Daily	No spillages have occurred
	Inspection of clean-up of spillages equipment	Daily	Sufficient equipment available for spillage clean-up
	Review of clean-up of spillages procedure	Quarterly	Aligns with best-practice methods
Waste			
Minimise waste material generated	Inspection of waste storage areas and containers	Daily	No waste material released to the environment
	Review of waste management register	Quarterly	Ensure waste minimisation principles are adhered to

The information and data collected from the above inspections and reviews should be collated, analysed and reported internally on a quarterly basis. An external annual review of environmental performance should be conducted. This review should include recommendations where improvements can be made and be integrated into a Continuous Improvement Program (CIP).

Development and implementation of a CIP will provide a framework for information and data collected from inspections and reviews. The performance indicators outlined above will allow any measurable improvements to be identified as well as areas requiring improvement. The CIP should be regularly reviewed internally (i.e. every 6 months) and externally on an annual basis.

4.0 SITE LOCATIONS

LOT & PLAN	STREET ADDRESS	APPROVED ERAs
		FERNVALE #
Lot 1 on RP884225; Lot 3 on RP884225; Lot 4 on RP884225; Lot 1 on RP28857; Lot 20 on SP203659; Lot 22 on SP203659	1604 Brisbane Valley Highway, Fernvale QLD 4306	• 16(1)(c) – Dredging, in a year, more than 100,000t but not more than 1,000,000t of material • 16(2)(b) – Extracting, other than dredging, in a year, more than 100,000t but not more than 1,000,000t of material • 16(3)(b) – Screening, in a year, more than 100,000t but not more than 1,000,000 to of material • 53 – Composting and soil conditioner manufacturing – manufacturing from organic material or organic wastes, 200t or more of compost or soil conditioners in a year
		COOMINYA
Lot 227 on CA31637; Lot 228 on CA31637	Coominya Connection Rd, Coominya QLD 4311	• 16(2)(b) – Extracting, other than dredging, in a year, more than 100,000t but not more than 1,000,000t of material • 16(3)(b) – Screening, in a year, more than 100,000t but not more than 1,000,000 to of material
Lot 220 on SP250792; Lot 225 on CA31641; Lot 226 on CA31641; Lot 236 on SP260138; Lot 246 on CA31773	Rocky Gully Rd and Banffs Lane, Coominya	• 16(2)(b) – Extracting, other than dredging, in a year, more than 100,000t but not more than 1,000,000t of material • 16(3)(b) – Screening, in a year, more than 100,000t but not more than 1,000,000 to of material (PENDING APPROVAL)

FRAZERVIEW (KALBAR) #		
Lot 14 on SP229448; Lot 15 on SP229448; Lot 16 on RP20973	551 Frazerview Rd, Frazerview QLD 4309	• 16(2)(b) – Extracting, other than dredging, in a year, more than 100,000t but not more than 1,000,000t of material • 16(3)(b) – Screening, in a year, more than 100,000t but not more than 1,000,000 to of material

Sites including approved concrete batching plants.

4.1 Summary – Site Locations and Operations

The following section provides a brief summary of the different locations, the activities conducted at these sites and the relevant environmental aspects and impacts they trigger. Further details with respect to risk assessment and environmental management of the various activities is provided in **Part A – Operations and Environmental Management**.

4.1.1 Brisbane Valley Highway, Fernvale

The quarry at Fernvale is the largest by area and operation of the Zanow Concrete and Quarries with multiple activities occurring on site. This site is the location of Zanows Concrete and Quarries head office and has significant infrastructure on-site including administration and management offices, training room, staff amenities, workshop as well as the extraction, screening and concrete batching equipment. Figure 1 below shows the location of the various activities and infrastructure undertaken on-site.

The infrastructure and activities on-site trigger all environmental aspects and impacts of *Air, Water, Noise, Land and Waste*.

Operations on-site include:

- Extraction and screening of sand and gravel products;
- Concrete batching; and
- Soil conditioner manufacturing.

Extraction and Screening:

Around 25 percent of the topsoil overlaying the sand and gravel is stripped, dry screened through an adjacent mobile plant then sold. The remainder is used for progressive rehabilitation and formation of final stable landform. The underlying sand and gravel is extracted, loaded into trucks and hauled to the processing area. All extraction of overburden, sand and gravel occurs off stream. The raw material is washed, crushed and sized using various methods and stockpiled adjacent to the processing plant. From these stockpiles, the materials are loaded into trucks and delivered throughout the South-East Queensland region.

Concrete Batching

The production of concrete utilises a percentage of raw materials extracted on-site. Concrete is a mixture of cement, water, sand and aggregate with the last materials extracted and processed on-site. The concrete batching plant is located adjacent to site offices and is a self-contained area with management and procedures specifically for the activity.

Soil Conditioner Manufacture

Waste material from the extraction of overburden is mixed with imported products including mulched green waste, composted chicken manure and coarse coal bottom ash. The blending of overburden with imported material with specific composition results in the production of garden soil, under turf soil and top dressing soil. The blended material is either sold off site as another product from the extractive industry or utilised on-site to ensure effective rehabilitation of disturbed areas.

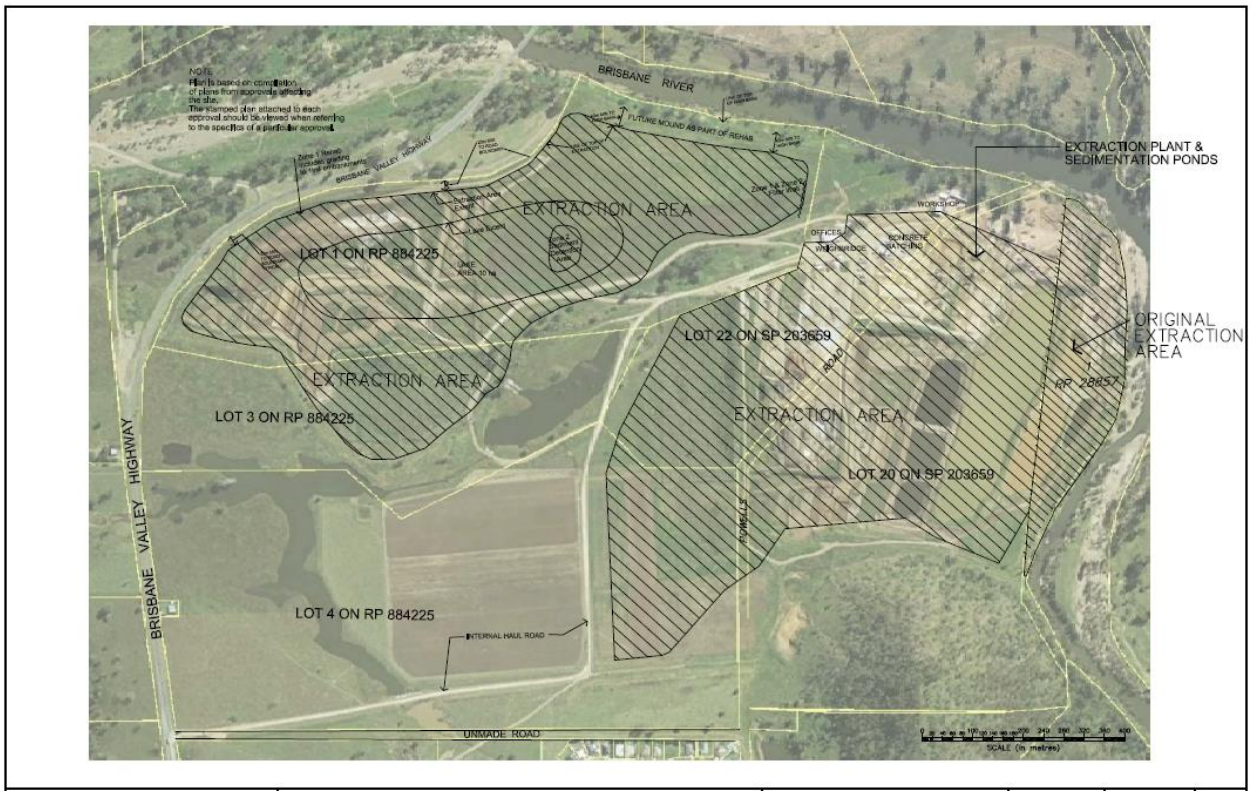


Figure 1: Extraction, concrete batching and soil conditioner manufacture at Brisbane Valley Highway, Fernvale

4.1.2 Coominya Connection Road, Coominya

The site at Coominya Connection Road, Coominya is primarily for extraction of raw material that is transported to the Fernvale site for further processing. The site operates on as 'as required' basis to supplement extraction activities at Fernvale in providing raw material to meet end-product specifications. The operations at this site involve removing and stockpiling overburden material for later use in rehabilitation progressively and formation of a final stable landforms at cessation of the activity. The underlying sand and gravel is extracted for transport offsite with occasionally material being dry-screened on-site to remove boulders and rocks <150mm. The large boulders and rocks are utilised on-site for the maintenance of erosion and sediment control measures implemented. Figure 2 below shows the location of the activity with all extraction occurring off stream. The activity at this site is basic with minimal equipment stored on-site with additional equipment transported to the site when required.

The infrastructure and activities on-site trigger the environmental aspects and impacts of *Air, Water, Noise, and Land*.

Figure 2: Extraction activities at Coominya Connection Road, Coominya

4.1.3 Frazerview Road, Frazerview

The activity at the Frazerview site is hard rock quarrying involving the removal of overburden material via drilling and blasting followed by loading and hauling of shot rock (i.e. raw material) for crushing and screening to meet required end-product specifications. Development on-site includes preparation and stabilisation of uppermost benches and working areas with on-site infrastructure including buildings (i.e. staff facilities), workshop facilities, access and haul roads and sufficient stockpiling areas. In addition to the quarrying activities, operations on-site involve the storage of fuel, oils and other chemicals and the generation of waste materials. Figure 3 below shows the location of the site and the various operations undertaken.

The infrastructure and activities on-site trigger all environmental aspects and impacts of *Air, Water, Noise, Land and Waste*.

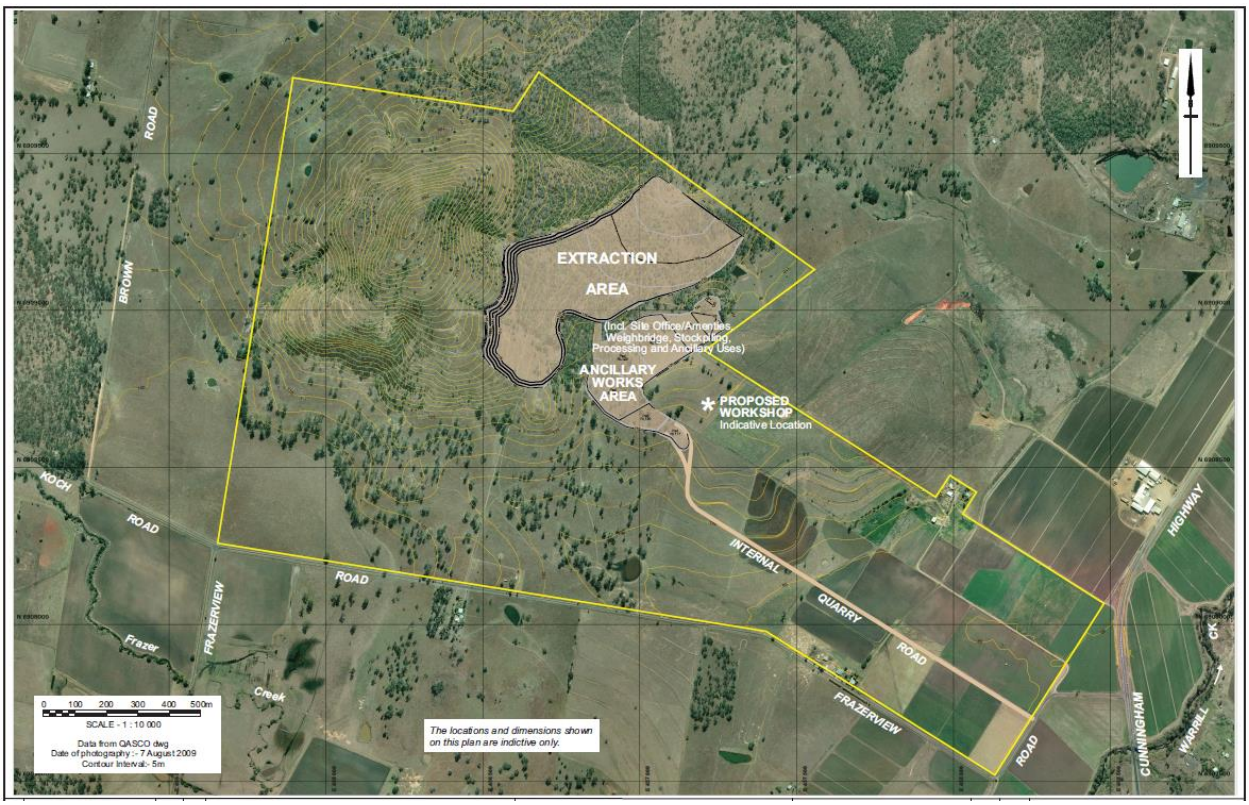


Figure 3: Hard rock quarrying activities at Frazerview Road, Frazerview near Kalbar

4.1.4 Rocky Gully Road, Coominya

The proposed activities at Rocky Gully Road, Coominya (i.e. Banffs Lane) are similar to those conducted at Coominya Connection Road, Coominya except that processing of the extracted materials will occur on-site. The operations at this site will involve removing and stockpiling overburden material for later use for rehabilitation purposes that occur progressively with the formation of a final stable landform at cessation of the activity. The underlying sand and gravel is extracted and processed on-site with limited dry-screening occurring. The material is stockpiled and later transported off-site for delivery to the surrounding region. In addition to the quarrying activities, operations on-site involve the storage of fuel, oils and other chemicals and the generation of waste materials. Figure 4 below shows the location of the proposed extraction activities at Rocky Gully Road, Coominya (i.e. Banffs Lane).

The infrastructure and activities on-site trigger all environmental aspects and impacts of *Air, Water, Noise, Land and Waste*.

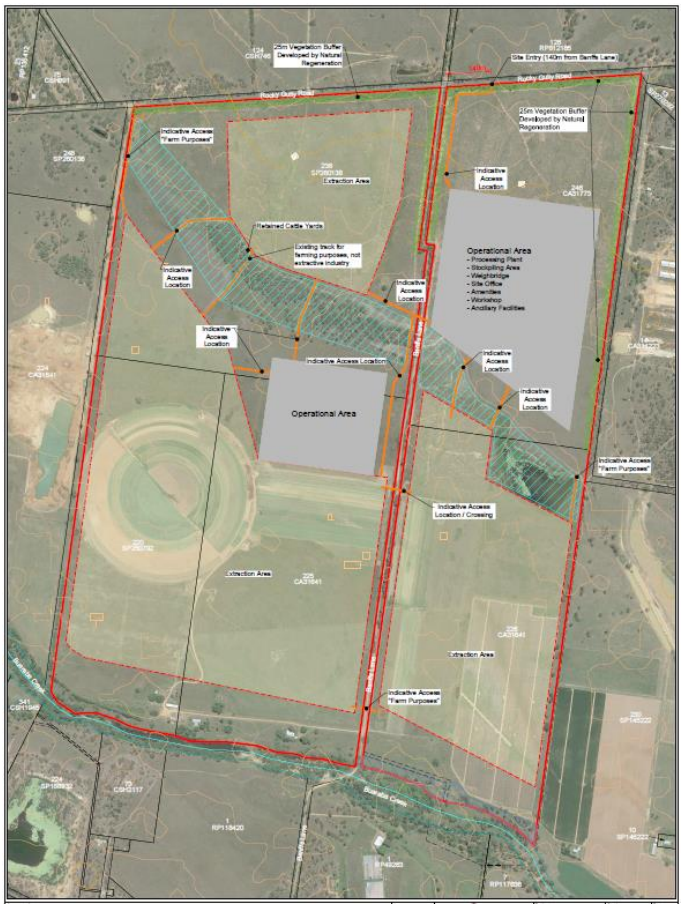


Figure 4: Location of proposed extraction activities at Rocky Gully Road, Coominya (i.e. Banffs Lane)

5.0 PART A: OPERATIONS & ENVIRONMENTAL MANAGEMENT

Zanows Concrete and Quarries have developed extensive site-specific management plans that are regularly reviewed and updated to reflect changes in operations and/or management. The purpose of the following sections is to provide an over-arching framework for the different sites ensuring consistent procedures and management strategies are adopted.

The following sections address the key requirements of environmental management, regulatory interests and compliance with Environmental Authority conditions:

- Air;
- Water (including stormwater);
- Noise;
- Land; and
- Waste.

The structure of the document will follow the Environmental Aspect and Impact Risk Assessment model with activities for the different sites combined. There are differences between the various sites but they pose similar potential environmental impacts and can be concisely and effectively covered with this method of risk assessment. Where there are site specific activities and potential impact, these will be addressed separately.

The management systems will be structured to address the following components:

- Objectives/Targets;
- Tasks/Actions;
- Measures;
- Monitoring & Maintenance;
- Records & Reporting; and
- Contingency Plans & Corrective Actions

5.1 EXTRACTIVE INDUSTRIES

5.1.1 Air

Emissions to air are known environmental pollutants and have the potential to cause adverse health effects. The potential emissions sources from extractive industries activities are:

- *Fugitive emissions* – overburden removal, loading and hauling raw feed, crushing and screening, stockpiling, wind borne from exposed areas, general vehicle movement and drilling and blasting (hard rock only)
- *Point source emissions* – crushing and screening, transfer points in crushing and screening process, stockpiles and drill rigs
- *Stack emissions* – mobile machinery and other combustion engines

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Air))* *c) Mining and Quarrying Safety and Health Act 1999* *d) Workplace Health and Safety Act (2011)* e) Local government planning approval and by-laws • To minimise/mitigate air emissions impacts of the activities that have the potential to adversely impact on sensitive receptors • To ensure air emissions from the activity do not cause nuisance to sensitive receptors
Tasks/Actions	• Installation of infrastructure to provide adequate water supply for dust suppression for activities generating fugitive and point source emissions • Installation of other infrastructure such as shrouds to minimise point source emissions • Regular inspections and maintenance of vehicles and mobile equipment to minimise combustion emissions

	• Appropriate construction and maintenance of haul and access roads • Taking into consideration weather conditions when undertaking various on-site activities • Continuous use of a dedicated water truck to maintain all roads, hardstand areas and stockpiles in a moistened state • Enforcement of on-site speed limits • Installation of wheel wash or other dirt removing devices at site exit • Progressive rehabilitation to minimise exposed areas • Installation and maintenance of vegetation and other barriers to minimise airborne emissions • Induction and regular training of on-site staff on the requirements of air quality control
Measures	• Air tasks / actions implemented • Maintenance of emissions minimisation infrastructure (both fugitive and point source) • Regular inspections by on-site staff and management to determine effectiveness of implemented emissions minimisation strategies • Clear reporting mechanism of identified issues and actions to rectify via Environmental Incident and Complaints Report (**Appendix A**) • No complaints from on-site staff or sensitive receptors
Monitoring & Maintenance	• Dust monitoring to be conducted: a) As directed by the administering authority in response to a complaint received; and/or b) In response to a complaint received from a sensitive receptor • Monitoring is to be conducted when required as per EA conditions and administering authority guidelines

	• Regular inspections and monitoring by all on-site staff and reporting of excess or rogue emissions to Quarry management
Records & Reporting	• All incidents and complaints to be reported via Environmental Incident and Complaints Report (**Appendix A**) • Incident and complaints reports will be held on site as per EA requirements • An Environmental Incident and Complaint Register will be maintained by the Site Manager/SSE (**Appendix B**) • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for implementation and maintenance of emissions plans is the Site Manager/SSE • Regular review of the effectiveness of emissions mitigation measures to be conducted by all on-site staff • Failure of any emissions mitigation measure must be immediately rectified or the activity ceased until rectified • All complaints received will be recorded in the Environmental Incident and Complaint Register (**Appendix B**) and investigated and actions taken as required • Corrective actions undertaken communicated and integrated in the Company's CIP

5.1.2 Water

Stormwater run-off has the potential to cause adverse environmental impacts as it may contain contaminants, primarily suspended solids and nutrients. Uncontrolled stormwater flow can cause erosion and lead to downstream water quality impacts through deposition of suspended solids, nutrients and other contaminants.

A Stormwater Management Plan (SMP) has been developed and implemented across all sites that aligns with the principles of erosion and sediment control to minimise stormwater flows, both

direction and velocity, to mitigate potential impacts from stormwater run-off and erosion. The SMP also includes mechanisms and infrastructure for capture, treatment and re-use of stormwater for the purposes of dust suppression and ensuring growth of vegetation to minimise both dust emissions and potential erosion.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Water))* c) Local government planning approval and by-laws • Minimise potential for erosion and suspended solid deposition on surrounding land and adjacent water courses • Prevent release of contaminants (i.e. hydrocarbons) to surface waters, groundwater and land • Ensure adequate water supply is available for dust mitigation purposes • Ensure adequate water supply is available to maintain rehabilitation areas and vegetation for screening
Tasks/Actions	• Development and implementation of a Stormwater Management Plan (SMP) • Installation and maintenance of stormwater management infrastructure as per SMP • Installation and maintenance of erosion and sediment control measures such as rock barriers, berms etc as per SMP • Regular inspections of stormwater and erosion and sediment control infrastructure to ensure integrity and effectiveness • Construction and maintenance of a hard stand pad for refuelling operations with appropriate spill kit and clean up procedure implemented • Progressive rehabilitation to minimise exposed areas

	• Installation and maintenance of vegetation and other barriers to minimise stormwater flows and potential erosion • Development and implementation of reporting structure when issues identified
Measures	• Development and implementation of SMP with regular review of effectiveness of measures adopted • Development of timeframes to rectify identified issues • Development and implementation of captured sediment management plan • Development and implementation of hydrocarbon and other contaminant clean up procedure • Regular training of staff on stormwater management, erosion and sediment control measures and incident/issues reporting
Monitoring & Maintenance	• Daily inspection of stormwater management infrastructure and erosion and sediment control measures • Inspection of stormwater management infrastructure and erosion and sediment control measures during and after rainfall event • Regular removal of sediment from settlement dams to maintain storage capacity • Regular inspection of bunded areas to ensure integrity and removal of contaminants as required • Conduct regular general house-keeping clean ups to remove potential contaminants • Stormwater monitoring of downstream aquatic environment as required by EA conditions or as directed by the administering authority
Records & Reporting	• All incidents and non-compliance to be reported via Environmental Incident and Complaints Report (**Appendix A**)

	• Incidents that result in non-compliance with EA conditions will be notified to the administering authority as per EA and/or legislative requirements (i.e. GED) • Incident reports will be held on site as per EA requirements • An Environmental Incident and Complaint Register (**Appendix B**) will be maintained by the Site Manager/SSE • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for the implementation of the SMP is the Site Manager/SSE • All staff are responsible for inspection of stormwater management infrastructure and erosion and sediment control measures • All staff are responsible to notify of any issues identified using the Environmental Incident and Complaints Report (**Appendix A**) • Installation of emergency spill equipment including documented procedure and training of staff (**Appendices D-G**) • All complaints are to be recorded in the Environmental Incidents and Complaints Report (**Appendix A**) and investigated with actions undertaken where necessary and documented • In the event of catastrophic failure of any infrastructure or measures adopted, re-installation is to occur immediately and the failure investigated • Regular review of infrastructure and measures adopted to ensure current and best-practice including areas where improvements and integrated into the CIP

5.1.3 Noise

Noise is considered a form of pollution that can have adverse health impacts on sensitive receptors and result in conflict between the operator and the local community. Zanows Concrete and Quarries undertake both sand and gravel extraction and hard rock quarrying activities which are inherently noisy activities that need to be managed.

The sources of potential noise are as follows:

- Truck and mobile plant engine noise;
- Drilling;
- Ripping of overburden;
- Crushing and screening activities;
- Product transfer, loading and delivery to external sites;
- Conveyor belts;
- Truck air brakes;
- Emergency alarms;
- Compressors;
- Reversing warning devices;
- Radios;
- Out of hours operation;
- Blasting (including ground vibration and air over pressure – hard rock only)
- Rock breakers (hard rock only)

This section will cover general Noise of the quarrying activities with more detail on noise specific to transport activities provided below in 5.3 **TRANSPORT**.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Noise))* *c) Mining and Quarrying Safety and Health Act 1999* *d) Workplace Health and Safety Act (2011)* e) Local government planning approval and by-laws

	• Minimise the potential for noise from the activity causing nuisance at a sensitive receptor
Tasks/Action	• Installation and maintenance of acoustic barriers and bunding, where required, to minimise the potential for noise adversely impacting on sensitive receptors • Regular inspection of noise mitigation measures to ensure integrity and effectiveness • Adherence to approved operating and blasting hours • All access and haul roads to be maintained to minimise noise from truck movements onto and around the site • Enforcement of on-site speed limits • All mobile equipment to be regularly maintained and silencers fitted where appropriate • Installation/replacement of reversing alarms to 'sqwarkers' or equivalent technology to minimise potential nuisance at a sensitive receptor • Blasting and drilling from hard rock quarry activities to be conducted as per EA requirements and take into consideration weather conditions • Regular training of on-site staff of the requirements of noise control
Measures	• Hours of operation as per EA and Council requirements • The activity is conducted and does not cause nuisance to sensitive receptors
Monitoring & Maintenance	• Noise monitoring will be conducted as per EA requirements in the event of a complaint received or as directed by the administering authority • Regular inspection and maintenance program of all fixed and mobile equipment to ensure minimal noise emissions • All staff are responsible for notifying of potential noise emissions that can affect sensitive receptors

	• Regular inspections of noise mitigation measures adopted to ensure integrity and effectiveness
Records & Reporting	• Implementation of the noise tasks / actions is the responsibility of the Site Manager/SSE • All incidents or complaints reported via Environmental Incident and Complaint Report (**Appendix A**) • An Environmental Incident and Complaint Register (Appendix B) will be maintained by the Site Manager/SSE • In the event of a complaint, noise monitoring will be conducted as per EA requirements • An investigation of the incident is to be conducted and corrective actions undertaken as required • All EA non-compliance will be notified to the administering authority including monitoring results and findings of investigations undertaken • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• All incidents and complaints received will be recorded in the Environmental Incident and Complaints Report (**Appendix A**) • All complaints will be investigated and where necessary actions will be taken to resolve the complaint and minimise the potential for recurrence • EA non-compliance from noise monitoring will be investigated and appropriate corrective actions undertaken

5.1.4 Land

The operation of both sand and gravel and hard rock quarries involves the use of various heavy earth moving equipment and vehicles that require regular re-fuelling and maintenance. As a result, diesel, oils and fluids are stored on site that if poorly managed can lead to contamination

of the surrounding environment. Poor management and containment of these materials can also lead to stormwater contamination if spillage clean up procedures are not adhered to.

Environmental controls are required to minimise the risk of uncontrolled release of hazardous material to the environment.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Water))* c) Local government planning approval and by-laws • Minimise potential of uncontrolled release of hazardous materials to the surrounding environment including land and surface and ground waters • Ensure all hazardous materials are appropriately and adequately stored and contained
Tasks/Actions	• A Hazardous Substances Register will be maintained at all sites by the Quarry Manager • A Clean-up of Spillages Procedure to be developed and implemented with all staff and contractors inducted and adequately trained (**Appendices D – G**) • Material Safety Data Sheets for all hazardous materials will be retained at all times where the hazardous materials are stored • Hazardous material must be stored in accordance with the Flammable and Combustible Liquids Regulations (incorporating Australian Standard AS1940) and other applicable standards and guidelines • Chemical ands and hazardous material will be stored in a manner that minimises the risk of accidental spills or release resulting in contamination of the surrounding environment

	• Storage method may include, but are not limited to: (i) Storage in a covered area on an impervious surface and contained in an appropriate manner; (ii) Bunding that is adequate in size to contain the volume of material being stored and is impervious (iii) Storage of hazardous or flammable material will be in an area isolated from heating or ignition sources and provided with adequate natural ventilation (iv) Volatile liquids will be stored in closed containers when not in use to prevent unnecessary exposure and release to the environment (v) Where practical, hazardous substances will be stored on higher ground (preferably above a 1 in 100 year flood event) • Clean up equipment, absorbent material and other materials used for neutralising or decontaminating spills are to be stored in a readily accessible location adjacent to the storage areas • In the event of a spill, the materials will be cleaned up as soon as practicable with contaminated material appropriately contained for transport off-site for recycling or disposal by a licensed waste transporter. <u>Rocky Gully Road, Coominya:</u> • All portable pump-out (temporary) toilet stalls will be located a minimum of a 100m from Buaraba Creek and the drainage line through the centre of the site. • Desilting of all sediment basins and quarry sumps will be harvested using an excavator and trucks, and stockpiled or directly delivered to the sand based cultivation and mixed with other products. The silt will be incorporated into the sandy soils on-site to increase the nutrient and

	organic levels, or removed from site in accordance with industry standards and requirements.
Measures	• All spills cleaned up as soon as practicable with all contaminated material removed • All spills to be recorded as an environmental incident
Monitoring & Maintenance	• Daily inspection of hazardous materials storage area, particularly bunding and other containment measures • Recording of any spillages, maintenance requirements and incorrect handling techniques • Maintenance of spill clean-up equipment
Records & Reporting	• All incidents and complaints to be reported via Environmental Incident and Complaints Report (**Appendix A**) • Incidents that result in non-compliance with EA conditions will be notified to the administering authority as per EA and/or legislative requirements (i.e. GED) • Incident reports will be held on site as per EA requirements • An Environmental Incidents and Complaints Register (Appendix A) will be maintained by the Site Manager/SSE • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for the implementation of the Clean-up of Spillages Procedure is the Site Manager/SSE • All staff are responsible for inspection of hazardous materials storage and containment areas • All staff are responsible to notify of any issues identified using the Environmental Incident and Complaint Report (Appendix A) • Installation of emergency spill equipment including documented procedure and training of staff (**Appendices D – G**)

	• All incidents and complaints are to be investigated with actions undertaken documented via Environmental Incidents and Complaints Report (**Appendix A**) • Regular review of infrastructure and measures adopted to ensure current and best-practice including areas where improvements and integrated into the CIP

5.1.5 Waste

A number of different types of wastes are generated from quarrying activities including general, recyclable and regulated wastes. Waste management should follow EHP's waste hierarchy from most to least preferable:

- Avoid / reduce
- Reuse
- Recycle
- Recover Energy
- Treat
- Dispose

Waste management is an integral part of any business and includes good housekeeping, positive staff attitudes and implementation of waste minimisation procedures, reuse options and appropriate disposal methods. Poor waste management will result in adverse amenity of the site, may increase costs in clean-up and could result in compliance and enforcement action.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Water))* *c) Waste Reduction and Recycling Act (2011)* d) Local government planning approval and by-laws • Minimise potential of uncontrolled releases of waste materials to the environment

	• Ensure all waste materials are appropriately and adequately stored and contained • Ensure all waste material requiring off-site treatment or disposal is undertaken by a licensed waste transporter to an appropriately licensed waste management facility • Minimise waste generation and maximise reuse/recycling options
Tasks/Actions	• A Waste Management Register (WMR) (**Appendix C**) is to be maintained on site to capture volumes and types of waste generated. All wastes are to be sorted and stored according to type i.e. general, recyclable, regulated • Waste required to be disposed of or treated off-site are to be transported by a licensed waste transporter to an appropriately licensed waste management facility • Installation and maintenance of waste containers that are clearly labelled to be placed at various locations throughout the site • Any waste identified as being able to be reused will be stored and contained appropriately until reuse • A register of licensed waste transporters and facilities will be maintained and kept on site • The WMR is to be regularly audited to ensure compliance with EA conditions and other regulatory requirements particularly waste minimisation opportunities • All staff and contractors are to be inducted and trained on the requirements and importance of waste management
Measures	• Reduce the volume of waste material generated on-site • Reduce the volume of waste material requiring off-site treatment or disposal • Of the waste material generated on-site, increase the volume of waste material generated that can be reused or recycled

	• Identify opportunities for waste minimisation, reuse or recycling
Monitoring & Maintenance	• Regulated waste tracking certificates to be kept on site to ensure compliance with EA conditions • Maintenance of the Waste Management Register (**Appendix C**) of all waste material transported off-site including details of the transporter and the facility material is transported to • Regular inspection of all waste containers to ensure correct procedures are being followed and material is not over-flowing
Records & Reporting	• All incidents and non-compliance to be reported via Environmental Incident and Complaints Report (**Appendix A**) • Incidents that result in non-compliance with EA conditions will be notified to the administering authority as per EA and/or legislative requirements (i.e. GED) • Incident and complaint reports will be held on site as per EA requirements • An Environmental Incidents and Complaint Register (Appendix B) is to be maintained by the Site Manager/SSE • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for the implementation of the waste tasks / actions is the Site Manager/SSE • All staff are responsible for inspection of waste containers and storage areas • All staff are responsible to notify of any issues identified using the Environmental Incident and Complaint Report (**Appendix A**) • All incidents and complaints are to be investigated with actions undertaken where necessary and documented in

	the Environmental Incident and Complaint Report (Appendix A) • An Environmental Incident and Complaint Register (Appendix B) is to be maintained by the Site Manager/SSE • Regular review of the WMR to ensure current and best-practice including areas where improvements can be made and integrated into the CIP • Annual review of the WMR to: a) Identify new waste minimisation opportunities; and b) Ensure existing waste management practices are being implemented and are effective

5.1.6 Rehabilitation

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) Local government planning approval and by-laws • Utilise waste extractive material to minimise overburden stockpiles and reuse in rehabilitation • Minimise amount of disturbed area and potential air (dust) emissions • Formation of final stable landform • Improve soil structure and quality to allow diverse land uses post-extraction
Tasks/Actions	• Development and implementation of approved Rehabilitation Plans that specifically address the different requirements and environments of the various operations • Undertake progressive rehabilitation concurrently with extractive activities to minimise disturbed areas
Measures	• Rehabilitated areas have vigorous and healthy ground cover and/or vegetation consistent with the intended land use under the approved Rehabilitation Plans

	• Rehabilitated areas are stabilised and not impacted by erosion forces i.e. air and water
Monitoring & Maintenance	• Regular inspection of rehabilitated areas to ensure vigorous vegetation growth and/or ground cover • Regular inspection of rehabilitated areas to ensure landform stability • Removal of all weed species
Contingency Plans & Corrective Actions	• Responsibility for implementation and maintenance of rehabilitation tasks / actions is the Site Manager/SSE • Regular review of the effectiveness of rehabilitation works to be conducted by all on-site staff • Failure of any rehabilitation measure must be rectified • Corrective actions undertaken communicated and integrated in the Company's CIP

5.2 SOIL CONDITIONING

The activity of soil conditioning which occurs at the Fernvale site only, has the potential to release emissions that can potentially cause both adverse health impacts and environmental nuisance.

This section will provide environmental aspects and impacts specific to the Soil Conditioning manufacture being primarily Air, Water and Land. The environmental aspects and impacts of Noise and Waste have been addressed in the Extractive Industries sections of the IEMS.

The materials approved to be used in the soil conditioning activity are as follows:

- *Screened sandy topsoil*
- *Screened bedding sand*
- *Unscreened sandy topsoil*
- Mulched recycled wood waste and sawdust
- Composted chicken manure
- Coarse coal bottom ash
- Compost material that complies with AS4454

Note: the material in *italics* are sourced from overburden material generated during on-site extractive activities.

5.2.1 Air

There are two (2) primary emissions that can result in non-conformance, dust and odour. Dust emissions can occur from truck movements delivering material, loading and transporting material off-site and blending the material to meet end-product specifications. Odour emissions can occur when receiving material such as composted chicken manure, during the blending of material to meet end-product specifications and poorly maintained leachate dams that can become anaerobic and release offensive odours.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Air))* *c) Workplace Health and Safety Act (2011)* d) Local government planning approval and by-laws • To minimise/mitigate air emissions impacts of the activities that have the potential to adversely impact on sensitive receptors • Ensure that stockpiled raw and soil conditioner material does not become waterlogged and potentially generate offensive odours • Ensure the leachate storage dam does not become anaerobic and potentially release offensive odours • To ensure air emissions from the activity does not cause nuisance to sensitive receptors
Tasks/Actions	• Correct profiling of land to ensure no pooling or ponding of leachate in raw material and soil conditioner product areas • Water used for dust suppression must not be sourced from leachate dam(s) • Aerate leachate dam to stop it becoming anaerobic • Minimise amount of compost material stored on-site, maintain ‘as required’ volumes of material

	• Regular inspections and maintenance of vehicles and mobile equipment to minimise combustion emissions • Appropriate construction and maintenance of haul and access roads • Taking into consideration weather conditions when undertaking various on-site activities • Continuous use of a dedicated water truck to maintain all roads, hardstand areas and stockpiles in a moistened state • Enforcement of on-site speed limits • All trucks to have loads covered with tarpaulins • Progressive rehabilitation to minimise exposed areas, particularly around composted chicken manure stockpile • Installation and maintenance of vegetation and other barriers to minimise airborne emissions • Induction and regular training of on-site staff on the requirements of air quality control
Measures	• Maintenance of emissions minimisation infrastructure (both fugitive and point source) • Regular inspections by on-site staff and management to determine effectiveness of implemented emissions minimisation strategies • Clear reporting mechanism of identified issues and actions to rectify • No complaints from on-site staff or sensitive receptors
Monitoring & Maintenance	• Dust monitoring to be conducted: a) As directed by the administering authority in response to a complaint received; and/or b) In response to a complaint received from a sensitive receptor • Monitoring is to be conducted when required as per EA conditions and administering authority guidelines

	• Regular inspections and monitoring by all on-site staff and reporting of excess or rogue emissions to Quarry management
Records & Reporting	• All incidents and complaints to be reported via Environmental Incident and Complaints Report (**Appendix A**) • Incident reports will be held on site as per EA requirements • An Environmental Incidents and Complaints Register (**Appendix B**) is to be maintained by the Site Manager/SSE • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for implementation and maintenance of emissions plans is the SSE/Site Manager • Regular review of the effectiveness of emissions mitigation measures to be conducted by all on-site staff • Failure of any emissions mitigation measure must be immediately rectified or the activity ceased until rectified • All incidents and complaints received are to be investigated and actions taken as required and documented via the Environmental Incident and Complaint Report (**Appendix A**) • Corrective actions undertaken communicated and integrated in the Company's CIP

5.2.2 Water

Stormwater run-off has the potential to cause adverse environmental impacts as it may contain contaminants, primarily suspended solids and nutrients. Uncontrolled stormwater flow can cause erosion and lead to downstream water quality impacts through deposition of suspended solids, nutrients and other contaminants.

A Stormwater Management Plan (SMP) has been developed and implemented across all sites that aligns with the principles of erosion and sediment control to minimise stormwater flows, both

direction and velocity, to mitigate potential impacts from stormwater run-off and erosion. The SMP also includes mechanisms and infrastructure for capture, treatment and re-use of stormwater for the purposes of dust suppression and ensuring growth of vegetation to minimise both dust emissions and potential erosion.

Treated leachate is reused for irrigation of vegetation and/or adjacent cropping. The irrigation practices includes water quality monitoring of the captured leachate as well as the area where the treated leachate is applied. Monitoring of the area where treated leachate is utilised includes requirements to ensure that the irrigation area is adequate for assimilation of the nutrient, organic and salt loading and soil structure and groundwater are not adversely impacted by the activity.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Water))* c) Local government planning approval and by-laws • Minimise potential for erosion and suspended solid deposition on surrounding land and adjacent water courses • Prevent release of contaminants (i.e. organics) to surface waters, groundwater and land • Ensure adequate water supply is available for dust mitigation purposes • Ensure raw material and soil conditioner end product stockpiles do not become water logged • Reuse of treated leachate for irrigation purposes
Tasks/Actions	• Treated leachate reuse for irrigation purposes as per EA conditions • Installation and maintenance of stormwater management infrastructure • Installation and maintenance of leachate management infrastructure

	• Installation and maintenance of erosion and sediment control measures such as rock barriers, berms etc • Regular inspections of stormwater and erosion and sediment control infrastructure to ensure integrity and effectiveness • Regular inspections of leachate dam to ensure sufficient aeration • Construction and maintenance of a hard stand pad for soil conditioning operations with appropriate grade to ensure no pooling or ponding of leachate material in stockpile area • Provide adequate drainage profile to ensure raw material and soil conditioning end product stockpiles can freely drain to minimise water logging potential • Progressive rehabilitation to minimise exposed areas • Development and implementation of reporting structure when issues identified
Measures	• Regular review of effectiveness of stormwater and erosion and sediment control measures adopted • Regular review of effectiveness of stockpile area to ensure there is no pooling or ponding of leachate material • Regular review of leachate dam to ensure effective aeration • Development of timeframes to rectify identified issues • Development and implementation of captured sediment management requirements • Development and implementation of leachate management requirements • Regular training of staff on stormwater management, erosion and sediment control measures and incident/issues reporting
Monitoring & Maintenance	• Daily inspection of stormwater management infrastructure and erosion and sediment control measures

	• Inspection of stormwater management infrastructure and erosion and sediment control measures during and after rainfall event • Daily inspection of soil conditioning hardstand and stockpiles to ensure adequate drainage with no pooling or ponding of leachate • Regular removal of sediment from settlement dams to maintain storage capacity • Reuse of treated leachate for irrigation purposes to adjacent land including a water quality monitoring program as per EA conditions • Regular inspection of bunded areas to ensure integrity and removal of contaminants as required • Conduct regular general house-keeping clean ups to remove potential contaminants • Stormwater monitoring of downstream aquatic environment as required by EA conditions or as directed by the administering authority • Undertake water quality monitoring from the soil conditioning activity at the location and frequency as required by EA conditions
Records & Reporting	• All incidents and complaints to be reported via Environmental Incident and Complaints Report (**Appendix A**) • Incidents that result in non-conformance with EA conditions will be notified to the administering authority as per EA and/or legislative requirements (i.e. GED) • Incident reports will be held on site as per EA requirements • An Environmental Incident and Complaints Register (**Appendix B**) will be maintained by the Site Manager/SSE

	• All monitoring records as require by EA conditions will be stored and made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for the implementation of the water tasks / actions are the Site Manager/SSE • All staff are responsible for inspection of stormwater management infrastructure and erosion and sediment control measures • All staff are responsible for the inspection of soil conditioning infrastructure • All staff are responsible to notify of any issues identified using the Environmental Incident and Complaints Report (**Appendix A**) • All incidents and complaints are to be investigated with actions undertaken where necessary and documented via the Environmental Incidents and Complaints Report (**Appendix A**) • In the event of catastrophic failure of any infrastructure or measures adopted, re-installation is to occur immediately and the failure investigated • Regular review of infrastructure and measures adopted to ensure current and best-practice including areas where improvements can be made and integrated into the CIP

5.2.3 Land

The operation of Soil Conditioning manufacture has the potential to cause land and groundwater contamination by leaching of nutrients and organics from raw material, end-product stockpiles and leachate capture storage dams. Incursion of stormwater into the raw material and end-product stockpile area can result in land contamination downstream from the activity. Effective stormwater diversion in infrastructure must be constructed appropriately and adequately maintained to prevent this from occurring. The reuse of treated leachate, if not appropriately managed and applied, can result in land contamination from nutrients and organics, have an adverse impact on soil structure and the growth and health of vegetation.

Environmental controls are required to minimise the risk of uncontrolled release of nutrient and organic material to the environment.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Water))* c) Local government planning approval and by-laws • Minimise potential of uncontrolled release of nutrient and organic materials to the surrounding environment including land and surface and ground waters • Ensure a hardstand pad is constructed that is impervious and graded to drain to minimise ponding and pooling of leachate material • Ensure stormwater is diverted away from the raw material and end-product stockpiles (i.e. construction of diversion berms) • Ensure treated leachate irrigation does not result in land contamination where utilised • Ensure percolation to groundwater does not occur from the leachate dam
Tasks/Actions	• Constructions and maintenance of a hardstand pad that is impervious to percolation • The hardstand pad is to be appropriately graded to ensure no pooling or ponding of leachate material • Development and implementation of a contaminant release area monitoring program that addresses requirements of EA conditions
Measures	• No adverse impact to vegetation growth in areas where treated leachate is utilised • No adverse impact to soil structure in areas where treated leachate is utilised

Monitoring & Maintenance	• Monitoring of areas where treated leachate is utilised for irrigation purposes • Regular inspection of the hardstand pad to ensure there is no pooling or ponding of leachate material • Regular inspection of stormwater diversion infrastructure to ensure its effectiveness and integrity
Records & Reporting	• All incidents and complaints to be reported in the Environmental Incident and Complaints Report (**Appendix A**) • Incidents that result in non-compliance with EA conditions will be notified to the administering authority as per EA and/or legislative requirements (i.e. GED) • Incident reports will be held on site as per EA requirements • An Environmental Incident and Complaint Register (**Appendix B**) will be maintained by the Site Manager/SSE • All monitoring records as required will be held on site as per EA conditions • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for the inspection and maintenance of the hardstand pad and association stormwater diversion measures is the Site Manager/SSE • Responsibility for ensuring contaminant release area monitoring is conducted as per EA conditions is the SSE/Site Manager • All staff are responsible for inspection of the hardstand pad and associated stormwater diversion infrastructure • All staff are responsible to notify of any issues identified using the Environmental Incident and Complaints Report (**Appendix A**)

	• All incidents and complaints are to be investigated with actions undertaken where necessary and documented via Environmental Incident and Complaint Report (**Appendix A**) • Regular review of infrastructure and measures adopted to ensure current and best-practice including areas where improvements can be made and integrated into the CIP

5.3 TRANSPORT

The loading and unloading of material into vehicles for transport has the potential to impact on environmental aspects, particularly Air, Noise and Land and to a lesser extent Water. These impacts can occur during loading on-site, transport of material off site and at the site material is delivered.

Transport management practices have been developed and implemented to minimise environmental impacts of material transfer both on-site and to external sites. The following is a list of the various trucks and heavy earthmoving equipment operating at the different site. The primary environmental impacts potentially caused by vehicles is dust emissions by moving around the site, loading of product and combustion emissions. Vehicles also have the potential to generate noise that can be a nuisance by unnecessary revving of engines, unsecured chains and gates that may bang as they move down haul roads and braking. Zanows Concrete and Quarries have equipped their vehicles with an alarm that if the brake is not engaged and the driver's door opens there is a noise to alert the driver.

FERNVALE	KALBAR	COOMINYA
Caterpillar D7G Track Dozer	Caterpillar 345BL Excavator	Komatsu PC450 Excavator
Caterpillar 375B Excavator	Komatsu PC450 Excavator	Caterpillar 972G Front End Loader
Volvo 4800 Excavator	Komatsu PC228 Excavator	Product Delivery trucks
2 x Caterpillar 773B Dump truck	Caterpillar D8R Track Dozer	

2 x Caterpillar 740 articulated Dump truck	2 x Caterpillar 759B Dump Trucks	
2 x Caterpillar D350 980G Front End Loader	Caterpillar D350 articulated Water Cart	
2 x Caterpillar 972H Front End Loader	Caterpillar 972G Front End Loader	
Caterpillar 972G Front End Loader	Caterpillar 966G Front End Loader	
Concrete trucks	Product Delivery trucks	
Product Delivery trucks		

5.3.1 Air (Transport)

Emissions to air are known environmental pollutants and have the potential to cause adverse health effects. The potential emissions sources from transport activities, particularly truck movements are:

- *Fugitive emissions* – loading material into vehicles, general vehicle movement, transport and delivery of material
- *Point source emissions* – loading and unloading of material; exhaust emissions; engine noise
- *Stack emissions* – mobile machinery, trucks, earthmoving machinery, concrete trucks

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Air))* *c) Mining and Quarrying Safety and Health Act 1999* *d) Transport Operation (Road User Management) Act 1995* *e) Workplace Health and Safety Act 2011* f) Local government planning approval and by-laws

	• To minimise/mitigate air emissions impacts of the activities that have the potential to adversely impact on sensitive receptors • To ensure air emissions from the activity does not cause nuisance to sensitive receptors
Tasks/Actions	• Installation of infrastructure to provide adequate water supply for dust suppression for activities generating fugitive and point source emissions on-site • Regular inspections and maintenance of vehicles and mobile equipment to minimise combustion emissions • Appropriate construction and maintenance of on-site haul and access roads • Continuous use of a dedicated water truck to maintain all on-site roads, hardstand areas and stockpiles in a moistened state • Enforcement of on-site speed limits • Installation of wheel wash or other dirt removing devices at site exit • Induction and regular training of on-site staff on the requirements of air quality control
Measures	• Regular inspection and maintenance of all vehicles to ensure efficient operation and minimise combustion emissions • Maintenance of emissions minimisation infrastructure (both fugitive and point source) • Regular inspections by on-site staff and management to determine effectiveness of implemented emissions minimisation strategies • Clear reporting mechanism of identified issues and actions to rectify • No complaints from on-site staff or sensitive receptors
Monitoring & Maintenance	• Dust monitoring to be conducted:

	a) As directed by the administering authority in response to a complaint received; and/or b) In response to a complaint received from a sensitive receptor • Monitoring is to be conducted when required as per EA conditions and administering authority guidelines • Regular inspections and monitoring by all on-site staff and reporting of excess or rogue emissions to Quarry management
Records & Reporting	• All incidents and complaints to be reported via Environmental Incident and Complaints Report (**Appendix A**) • Incident reports will be held on site as per EA requirements • An Environmental Incidents and Complaint Register (**Appendix B**) will be maintained by the Site Manager/SSE • All records will be made available to the administering authority on request
Contingency Plans & Corrective Actions	• Responsibility for implementation and maintenance of emissions plans is the Site Manager • Regular review of the effectiveness of emissions mitigation measures to be conducted by all on-site staff • Failure of any emissions mitigation measure must be immediately rectified or the activity ceased until rectified • All complaints received are to be investigated and actions taken as required and documented via Environmental Incidents and Complaint Report (**Appendix A**) • Corrective actions undertaken communicated and integrated in the Company's CIP

5.3.2 Noise (Transport)

The sources of potential noise from transport operations are as follows:

- Truck and mobile plant engine noise;
- Product transfer, loading and delivery to external sites;
- Truck air brakes;
- Emergency alarms;
- Reversing warning devices;
- Radios;
- Out of hours operation

This section will cover Noise generated from the transport component of the different activities across multiple sites.

Objective/Target	• To comply with the following: a) Environmental Authority conditions b) *Environmental Protection Act 1994* and other subordinate legislation (*Environmental Protection Policy (Noise))* *c) Transport Operation (Road User Management) Act 1995* *d) Workplace Health and Safety Act 2011* e) Local government planning approval and by-laws • Minimise the potential for noise from the activity causing nuisance at a sensitive receptor
Tasks/Action	• Adherence to approved operating hours • All access and haul roads to be maintained to minimise noise from truck movements onto and around the site • Enforcement of on-site speed limits • All mobile equipment to be regularly maintained and silencers fitted where appropriate • Installation/replacement of reversing alarms to 'sqwarkers' or equivalent technology to minimise potential nuisance at a sensitive receptor

	• Regular training of on-site staff of the requirements of noise control both on-site and during transport and delivery of material
Measures	• Hours of operation as per EA and Council requirements • The activity is conducted and does not cause nuisance to sensitive receptors
Monitoring & Maintenance	• Noise monitoring will be conducted as per EA requirements in the event of a complaint received or as directed by the administering authority • All staff are responsible for notifying of potential noise emissions that can affect sensitive receptors • Regular inspections of noise mitigation measures adopted to ensure integrity and effectiveness
Records & Reporting	• Implementation of the noise transport tasks / actions is the responsibility of the Site Manager/SSE • All incidents or complaints will be reported as per Environmental Incident and Complaint Report (**Appendix A**) • In the event of a complaint, noise monitoring will be conducted as per EA requirements • All incidents and complaints are to be investigated and corrective actions undertaken as required and documented via Environmental Incidents and Complaints Report (Appendix A) • An Environmental Incident and Complaints Register (**Appendix B**) will be maintained by the Site Manager/SSE • All EA non-compliance will be notified to the administering authority including monitoring results and findings of investigations undertaken • All records will be made available to the administering authority on request

Contingency Plans & Corrective Actions	• All incidents and complaints received will be recorded in the Environmental Incident and Complaints Report (**Appendix A**) • All complaints will be investigated and where necessary actions will be taken to resolve the complaint and minimise the potential for recurrence • EA non-compliance from noise monitoring will be investigated and appropriate corrective actions undertaken

6.0 PART B: NON-ENVIRONMENTAL MANAGEMENT PLANS

6.1 Emergency Procedures

Zanows Concrete and Quarries have developed and implemented Contingency Plans and Emergency Response procedures that are consistent across all activities and operations at the various locations operated by the organisation.

6.2 Workplace Health & Safety

Zanow Concrete and Quarries have developed Workplace Health and Safety management and procedures that comply with primarily the *Mining and Quarrying Safety and Health Act* and *Workplace Health and Safety Act* where it applies. Management and procedures are consistent across all activities and operations at the various locations operated by the organisation.

Appendix A: Environmental Incident and Complaint Report

ENVIRONMENTAL INCIDENT OR COMPLAINT REPORT

REPORT NOS……

Location :……Date:

Incident/Complaint Details:……

……

……

……

……

……

……

Report by (PRINT)……..Signed:

Complainant Name:……

Telephone Nos:……

….

Address:……

……

……..

CORRECTIVE ACTION/S

Short-Term:……

……

……

……

……

Long Term:……

……

……

……

……

VERIFICATION OF EFFECTIVENESS OF CORRECTIVE ACTION

Reporting Officer:

Date:

Senior Officer:

Date:

Environmental Officer:

Date:

Incident Ranking (indicate which applies (x)) **(Administering authority notification required for Level 2 to 4; company to nominate officer)**

Level 1 ↑	Level 2 ↑	Level 3 ↑	Level 4 ↑
• Minor incident • No external activity required. • Instigate clean up as appropriate • Complete report	• External contact made (regulator or neighbour) • For example, dust, noise, water, pollution • Verbally report details to a more senior officer of the company • Complete report within 2 days	• Clean up or potential costs to exceed $5,000. • Immediately report details verbally to a more senior officer of the company. • Complete this report within a stipulated time frame.	• Clean-up or potential costs to exceed $50,000. • Immediately report details verbally to a more senior officer of the company and Managing Director. • Await directions from those advised.

Appendix B: Environmental Incidents and Complaints Register

The Environmental Incidents and Complaints Register (EICR) is a summary of all reported non-conformances and complaints detailed in the Environmental Incident and Complaint Report.

Note: Complaints are to be recorded as CR001 and Incidents as IN001, examples are provided in the table below.

Date Occurred	Reference Number	Environmental Aspect	Summary	Date Actioned	Resolved (Y/N)
1/12/17	CR001	Dust	Complaint received from neighbouring property	1/12/17	Y – contacted complainant; water truck utilised
1/12/17	IN001	Land	Spillage of diesel while re-fuelling	1/12/17	Y – spillage cleaned up as per procedure

Appendix C: Waste Management Register

Date	Company or Organisation receiving Waste	Volume Received	Waste Treatment Method (a)	Site Where Waste Is To Be reused (if applicable)	Regulated Waste (EA license number)	General/Recycled Waste (vehicle registration

Note (a) – Waste Treatment Method – Reuse; Recycle; Disposal

To be checked by Quarry Manager:

Date Checked: __/__/__ Signature:_____ Date Checked: __/__/__ Signature:_____ Date Checked: __/__/__ Signature:_____

Date Checked: __/__/__ Signature:_____ Date Checked: __/__/__ Signature:_____ Date Checked: __/__/__ Signature:_____

Appendix D: Clean-up of Spillages Procedure – Fuel and Oil

List of Equipment/PPE Required
1. Steel Cap Boots, Safety Vest, Safety Glasses, Rubber Gloves, Long sleaves & trousers 2. Spill Kit, Shovel, sand, wheelbarrow, broom, hose
List of Requirements to Comply With
1. Do not let any fuel or oil enter drains, gutter or stormwater systems
Sequence of Basic Steps
1. IMMEDIATELY isolate any potential ignition sources and prohibit smoking.  **There is a high fire risk with a fuel or oil spill and fire prevention must always be the first priority.** 2. Stop further spillage, if safe to do so, by blocking the discharge point, wear appropriate PPE (boots, gloves, safety glasses). 3. Prevent any spillage from entering drains, creeks, water courses, sewers by blocking drains, bunding using sand / soil. 4. Have fire extinguishers standing by. 5. Contact Fire Brigade if necessary. 6. Estimate volume spilled and the most suitable method of containment. 7. Contact Plant Manager, Quarry Manager and Company Director. 8. Use Spill Kit, sand, soil or other materials to further contain and clean up spill, ensure PPE is worn. 9. Shovel contaminated earth into containers and label. 10. Report incident by completing Risk Report, and any legal reporting requirements and H&S implications. 11. Dispose of contaminated earth in accordance with the Local Government. 12. Arrange remediation of any affected area. Reference: SDS's - Distillate, Oil, Petrol

Appendix E: Clean-up of Spillages Procedure – Dry Concrete / Flyash

List of Equipment/PPE Required

1. Steel Cap Boots, Safety Vest, Dust Mask, Safety Glasses, Rubber Gloves, Long sleaves & trouses
2. Shovel, wheelbarrow, broom, hose, street sweeper as required

List of Requirements to Comply With

1. Do Not hose cement & flyash into drains, gutter or stormwater systems

Sequence of Basic Steps

1. IMMEDIATELY STOP the action causing the discharge to atmosphere (stop pumping into silo, drawing from silo, batching load etc.).

 Caution - Cement may be hot.

2. Notify Plant Management of discharge, estimate quantity (minor < 20 kg, significant 20kg to 500kg, major > 500 kg).
3. Estimate area affected (contained on site, minor discharges off site, major discharges off site).
4. Contact emergency services / local council if required to help clean up.
5. Contact Plant Manger, Quarry Manager and Company Director.
6. Identify resources required and mobilise clean up team, use PPE (boots, gloves, safety glasses, dust mask / respirator, full cover clothing).
7. Use only **light** water spray if required to settle dust in yard, prevent wind blown dust, until clean up activated, or cover with tarpaulins.

 DO NOT hose spillage into stormwater drains.

8. Prevent any spillage from entering stormwater drains, creeks, water courses.
9. Clean up spill using DRY methods, eg: shovel, broom, vacuum street sweeper.
10. Only minor spills and areas draining to the contaminated water storage facility on the plant site may be hosed.
11. Dispose of spilt cement into plant washout system or council tip.
12. Arrange remediation of any affected area.
13. Contact any affected neighbours and provide clean up services.
14. Report incident by completing Risk Report, and any legal reporting requirements and H&S implications.

Reference: MSDS's - Portland & Blended Cement, Fly Ash

Applies To:	All Operations		Local
Prepared by:	D. Gormley	**Approved by:**	Steve Pyne
Issue Date:	31.07.2016	**Filename:**	Cement Spillage.doc

Appendix F: Clean-up of Spillages Procedure – Concrete

List of Equipment/PPE Required
1. Steel Cap Boots, Safety Vest, 2. Shovel, wheelbarrow, broom, hose, street sweeper as required
List of Requirements to Comply With
1. Do Not hose concrete into drains, gutter or stormwater systems 2. Do not attempt a clean up on roads where there is traffic hazard / risk of injury.
Sequence of Basic Steps
1. Notify Plant of spill, estimate quantity (minor < 20 litres, significant 0.02m^3 to 1m^3, major > 1m^3). 2. Prevent any spillage from entering drains, creeks, or other water courses by blocking drains, or bunding with sand / soil.  **Do not use water to disperse the spillage.** 3. Plant to advise local authority if spill is on a road. 4. Contact emergency services/council etc. if required, eg: traffic control. 5. Contact Plant Manager, Quarry Manager and Company Director. 6. Identify resources required and mobilise clean up team, use appropriate PPE (boots, gloves, safety vest, safety glasses). 7. Clean up spill using **DRY** methods, eg: shovel, broom, vacuum street sweeper, loader and truck. 8. Dispose of spilt concrete into plant washout or council tip. 9. Arrange remediation of any affected area. 10. Report incident by completing Risk Report and any legal reporting requirements and H&S implications. Reference: SDS - Ready Mixed Concrete

Applies To:	All Operations		Local
Prepared by:	D. Gormley	**Approved by:**	Steve Pyne
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Appendix G: Clean-up of Spillages Procedure – Concrete Additive

List of Equipment/PPE Required
1. Steel Cap Boots, Safety Vest, Safety Glasses, Rubber Gloves, Long sleaves & trouses 2. Spill kit, sand, broom, hose
List of Requirements to Comply With
1. Do not hose additives into drains, gutter or stormwater systems
Sequence of Basic Steps
1. IMMEDIATELY stop further spillage by blocking the discharge point, wear appropriate PPE (boots, gloves, safety glasses). 2. Prevent any spillage from entering stormwater drains, creeks, water courses by blocking drains, bunding with sand / soil. 3. Estimate volume spilled and the most suitable method of further containment and clean up. 4. Contact Plant Manger, Quarry Manager and Company Director. 5. Use Spill Kit, sand or other materials to further contain and clean up spill. 6. Small quantities spilt within the contaminated area in the plant may be hosed and diluted into the plant contaminated water system. 7. Report incident by completing Risk Report, and any legal reporting requirements and H&S implications. 8. Dispose of contaminated earth in accordance with the Local Government requirements. 9. Arrange remediation of any affected area. Reference: SDS's for Concrete Additives

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