

Work Authority WA1488 Work Plan (WA) PLN-001354

Licence Ownership Details


Licensee	Dandy Premix Quarries Pty Ltd
Registered Address	21 - 23 Bennet Street Dandenong, Victoria 3175

Mineral Resources (Sustainable Development) Act 1990

Tenement Number: WA1488

Plan Number: PLN-001354

Work Plan Variation Statutorily Endorsed

Signed: 

Delegate of the Department Head

Date: 29/05/2020

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PLAN**

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Plan Summary Details

Project Name	Grantville
Plan Description	<p>This Work Plan Variation describes proposed changes to the development and operation of an existing sand quarry (WA1488) located at Grantville for Dandy Premix Quarries Pty Ltd (DPQ). Specifically, the Variation describes, in addition to the current operations,</p> <ul style="list-style-type: none"> • The further development of the existing extraction area, • A deepening of the existing extraction area to remove sand from below the groundwater level, • The development of a new extraction area to the east of the existing extraction, • The implementation of a dredging extraction method to win material from below the groundwater level, • The introduction of a sand washing and dewatering processes, and • An extension of operating hours with respect to the dewatering process plant and sales loading and despatch operations. <p>The Variation, and the attached figures, plans (including the Risk Management Plan and the Rehabilitation Plan), and specialist reports provides details on the location of these activities, receptors that might be impacted as a result of the activity, and associated controls and mitigation measures.</p> <p>There is no proposal to vary the Work Authority boundary.</p> <p>This Work Plan has been prepared in accordance with the requirements of the Mineral Resources Development Act 1990 and the Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2010 and incorporates the risk based approach described by the Earth Resources Regulation Branch of the Department of Jobs, Precincts and Regions, Victoria (the Department) guidelines Preparation of Work Plans and Work Plan Variations, December 2018.</p> <p>WA1488 is located at Grantville, approximately 100km drive southeast of Melbourne City, see Figure 1 Regional Plan.</p> <p>Given the size of the resource and the required new CAPEX investment to realise the resource are both substantial, output (sales) from WA1488 is</p>

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WA1488

PLN-001354 Work Plan (WA)

	<p>expected to increase to in the order of 600,000 to 850,000 tonne per annum over the ensuing 5-10 year period. This increase is directly related to (heavily dependent on) the future demand for construction sands in the Melbourne Supply Area (MSA).</p> <p>General Geology, (Sch 1, 1.2)</p> <p>Geologically, the majority of the WA1488 site is located within the Western Port Basin. The exception is a small area in the south-eastern corner of the site that is within the Gippsland Basin. The two basins are separated by a regional fault, the Heath Hill Fault. The Heath Fault is aligned northeast to southwest and extends from the foothills of the Great Dividing Range near Drouin to southeast of Grantville and possibly further southwest towards the Anderson area. The Heath Hill Fault has juxtapositioned Tertiary rocks of the Western Port Basin against the Cretaceous Strzelecki Group rocks of the Gippsland Basin.</p> <p>The Brighton Group beneath WA1488 was not fully penetrated during sand resource investigative drilling undertaken by BCA between 2010 and 2018. However, based on a review of bore logs in the (greater) Grantville area the stratigraphic sequence beneath WA1488 is considered to consist of (from oldest to youngest): 1) Strzelecki Group (siltstone, mudstone, sandstone, black coal), 2) possibly Childers Formation (sand, clay, gravel, conglomerate, thin brown coal seams), and Brighton Group (silt, sand, clay).</p> <p>Outcropping Strzelecki Group were mapped in the south-eastern corner of WA 1488 to the east of the Heath Hill Fault (Welsh et al., 2011). However, investigative drilling in this area during 2018 intersected weathered basalt (Mornington Volcanics Group). Interpretation of geophysical survey data and field inspection indicates that the basalt is localized and is most likely a volcanic plug along the Heath Hill Fault.</p> <p>Site Geology</p> <p>The sand resources at WA1488 belong to the Brighton Group. Movement along the Heath Hill Fault zone most likely dragged-up Brighton Group and other Tertiary stratigraphic units on the western side of the fault which would explain the steep dips in the Tertiary sediments and the greater than expected thickness of the Brighton Group close to the Tertiary-Cretaceous contact. The upper (near surface) portion of the Brighton Group across WA1488 is predominantly clay or silt which in the context of sand extraction is referred to as "overburden". The thickness of the clay/silt overburden varies from absent to about 15 m and is mostly between 5 m and 10 m across the lower elevated, western portion of the site but is thinner on the hill in the south-eastern part of the site.</p> <p>From the geological model developed, the pit strata are expected to consist of:</p> <ul style="list-style-type: none"> • 150-200 mm of soil in open paddocks to under 100mm poor sand soil where sand outcrops, • 5-10m of overburden, • Over 60 metres sand sequence generally consisting of fine-medium, medium-coarse, coarse and very fine sand • Organic coated sands occur in places. <p>Geological Investigation</p> <p>Sixty-nine (69) holes have been drilled at the WA1488 site including sand resource drill holes (the majority), groundwater monitoring bores and holes to investigate the Heath Hill Fault.</p> <p>A total of 57 sand resource investigation holes have been drilled, with 48</p>
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	<p>drilled in 2011 and a further 9 in 2017. The drilling and testing work have identified varying sand layers extending over most of the western portion of the site. These are overlain by a variable thickness of very silty clayey sands and sandy clays which would be classified as overburden.</p> <p>The sand units have been generally categorised as: -</p> <ul style="list-style-type: none"> • "Fine-Medium" • "Coarse -Very Coarse" • "Very Fine-Fine " <p>The western lower lying part of the site mostly contains fine-medium sand, with little shallow very fine or coarse sand. This area is covered by the existing approved extraction area. The land east of this rises and contains a mix of fine-medium to coarse sand with very fine sand areas. Further to the east at the Heath Hill Fault, the sand tends to be mostly coarse to very coarse. East of the fault there is no known sand occurrence.</p> <p>There is an organic coating occurring on some sands in limited areas of the Fine Medium Sand Extraction Pit (FMSEP) below the water table.</p> <p>Estimated Resource (Sch 1, 1.2)</p> <p>The resource drilling indicated a total site wide resource (remaining at the time of drilling) of approximately 76,000,000 tonnes of sand.</p> <p>The resource associated with the proposed extraction areas is estimated at 29,750,000 tonnes. An estimate of the amount of overburden covering this sand is 3,600,000 cubic metres (bcm).</p> <p>Current and past land uses</p> <p>The majority of the site has been extensively farmed continually since the 1930's, and most recently by Bill and Roy Blackmore. The site is mostly cleared, except for some remnant native vegetation on the elevated, eastern part of the site.</p> <p>WA1488 was granted in 2013 and commenced development in 2015. WA1488 is 156.1 ha in size.</p> <p>Method and Scale of Operation (Sch1 1.3a) Size of extraction area</p> <p>The total extraction area, including both the expanded existing extraction area and the new coarse sand pit (CSEP), is 77.33 ha.</p> <p>The total disturbed area, including site access road, access tracks around site (mostly for farm management) extraction area, processing and hardstand/stockpile area, visual screening bunds, water dams and overburden storage is 84.21 ha. The extent of the extraction area and disturbed area is shown on Figure 3 Site Layout Plan.</p> <p>The maximum disturbance area at any time is estimated to be 50 ha.</p> <p>Extraction methods</p> <p>Conventional dry extraction mobile plant and equipment will be used for extraction above the water table, including but not limited to excavators, bulldozers, front-end loaders, dump trucks, and water carts. Other specialised equipment such as compactors, scrapers and graders may be used as required.</p>
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	<p>Extraction below the groundwater table will be undertaken by a suction cutter dredge mounted on a floating pontoon. The resulting material will be pumped to shore for further processing via pontoon mounted slurry pipelines.</p> <p>Processing (Sch1 1.3b)</p> <p>The sand washing and dewatering plant will incorporate the existing raw bulk feed bin system with the addition of constant density feed regulating sumps, cyclones, wet sizing and dewatering screens, water clarifier and thickening tank, mud buffer tanks, process water and make-up tanks, electrical MCC and PLC centres, a dewatering belt press and additional transfer conveyors to co-ordinate continued use of the existing conveyor and radial stacking system. Mobile screening plant will be used when required.</p> <p>Storage of clean water</p> <p>Clean/fresh water will be pumped to the processing plant from a pontoon located in the dredge pond but some distance from the dredging operation. Water will be pumped as required, with some tank storage available in the plant area.</p> <p>Storage of Processed Water.</p> <p>As part of the wet/dredging extraction process raw sand material will be pumped to the plant in a slurry, with residual post-process water returned to the dredge pond.</p> <p>Some water will be held in the thickener and other vessels and tanks in the water recovery circuit.</p> <p>Storage of processed (dewatered) slimes (Sch1 1.3c)</p> <p>Slimes will be generated from the sand washing plant at an estimated rate of 40,000m³ – 45,000m³ per annum (approx. 165m³ – 190m³ per day based on a 5 day week, 48 weeks per annum for sand washing and dewatering operations).</p> <p>The Slimes will be dewatered by a 3.0m wide Belt Press fitted with a gravity drainage table to achieve a consistently 'spadeable' Filter Cake with a 63% w/w solids content.</p> <p>The Filter Cake will be blended with both oversize clay reject (OCR) from the sand washing plant screening process (industry standard of 3% x weight (OCR) production has been applied) and/or stripped Overburden for use in progressive rehabilitation. The blended combination of Filter Cake and OCR results in a minimum 70% w/w solid content material for use with Overburden in rehabilitation works.</p> <p>The availability of 'backfill areas' for use of the Filter Cake in the CSEP will be dependent on the rate of development of that pit, i.e. the rate of coarse sand extraction to depth and establishment of the north-east terminal face batters. The anticipated rate of coarse sand extraction in the formative years of the CSEP is in the order of 50,000m³ to 70,000m³ per annum (80,000 tonne – 130,000 tonne per annum).</p> <p>These numbers enable a well-managed 'mass balance' of all earthwork materials (Sands, Overburden, Topsoil, Filter Cake and OCR) across the WA1488 during stripping, sand extraction, sand washing and dewatering and progressive site rehabilitation works.</p> <p>During the early years of sand washing when the immediate blending and</p>
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	<p>use of Filter Cake and OCR in progressive rehabilitation of the CSEP is not possible, the material will be managed in several separate and sequential phases.</p> <ul style="list-style-type: none"> Initially, Filter Cake and OCR produced from the Belt Press in years one, two and possibly three, will be temporarily stored above ground within the extraction limits of the FMSEP, to the east of the Haul Road in an area that has been stripped of topsoil and prepared for this purpose. The designated Filter Cake and OCR storage area will be in excess of 40,000m² (4 hectares), located either-side of the upper (southern) reach of the MW3840 drainage line and the surrounding lower site elevations. The above ground 'east-west windrows' of temporarily stored Filter Cake and OCR, will be limited in height to a nominal 3.0 metres. The upper reach of MW3840 will be retained as long as required (it is located within the fully developed FMSEP footprint) to facilitate the early years above ground storage of Filter Cake and OCR. Storing this material both sides (east and west) of the MW3840 drainage line, which will allow drainage, or sediment runoff from the Filter Cake and OCR to capture for settlement in the existing Northern Storage Dam. This dam is the initial collection and treatment point of the site's MW3840 surface water drainage (SWMP) and filtration system and currently discharges at overflow to the existing Farm Dam. <p>When the Farm Dam, which is the second treatment point of the above system, is removed as part of the initial FMSEP Cutter Suction Dredge (below water) sand extraction operations, settled overflow water from the Northern Storage Dam will be directed to the FMSEP dredge pond.</p> <ul style="list-style-type: none"> The second planned phase of Filter Cake and OCR disposal involves placing it below Groundwater in the FMSEP dredge pond 'void' created in years one and two of Cutter Suction Dredge operation. Should two years of Cutter Suction Dredge operations in the FMSEP not create an adequately sized below water 'void' to receive Filter Cake and OCR and capacity of the above ground storage area has been exhausted, an additional Filter Cake and OCR storage area in the FMSEP floor, i.e. the pit area not yet extracted below the surface water level (SWL), will be used for this purpose. Drainage of water, or sediment runoff from Filter Cake and OCR stored on the FMSEP floor, e.g. from a significant rainfall event, will either be diverted to the FMSEP dredge pond, or enter Groundwater aquifer via infiltration of the sand underlying the designated FMSEP storage area. Once the initial (north-east) terminal batters of the CSEP are established, Filter Cake and OCR, as well as stripped Overburden from further development of the FMSEP and the CSEP, will be used to progressively backfill and rehabilitate the CSEP behind coarse sand extraction, as its development progresses in a south-west direction. Any Filter Cake, OCR and Overburden excess to backfill requirements in the CSEP will be placed in the below water 'void' of the FMSEP. <p>Refer Figure 3 – Site Development Plan.</p> <p>If required by the Regulator (DJPR/ERR) and/or Southern Rural Water (SRW) as the relevant Statutory Referral Agency, Dandy Premix will undertake a specialist study to determine if co-disposal of Filter Cake, OCR and Overburden below water in the FMSEP dredge pond, creates any potential for short, or longer-term impact on Groundwater quality, in particular, to other licensed local users.</p> <p>The movement of Belt Press generated Filter Cake within the WA1488 site, including for blending with OCR and Overburden in preparation for rehabilitation works, will be by conventional earthmoving equipment, i.e. Excavator and Haul Truck. Additionally, a Conveyor may also be installed from the Belt Press operation to the FMSEP for below water disposal of</p>
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	<p>Filter Cake, and OCR in preference to the use of load and transport by Haul Truck for this particular 'waste' handling operation.</p> <p>Proposed depth of extraction:</p> <p>The extraction depth of the FMSEP is proposed to be 88m, with a terminal reduced level of -13mRL and a crest level of 75mRL on the eastern terminal batter.</p> <p>The extraction depth of the CSEP is 55m, with a terminal reduced level of 60mRL and a crest height of 115mRL on the eastern terminal crest. The CSEP will be backfilled as part of the site rehabilitation and closure.</p> <p>Proposed sequencing of extraction</p> <p>An initial dredge pond will be established adjacent to and south of the existing processing area, and within the existing extraction area. This initial dredge pond will be progressively enlarged, preceded by the stripping and extraction of material above the water table as required.</p> <p>The development of the FMSEP further to the east will necessitate the maintenance of the CSEP Access Track until such time as the extraction and backfilling of the CSEP has been completed. The Access Track will be appropriately constructed to facilitate the on-going wet extraction process. The upper two benches of the FMSEP, on the eastern batters, will be sequential worked from the top down with the uppermost bench rehabilitated prior to stripping of the second bench. This is illustrated on the Site Layout Plan, Figure 3, and will minimise the visual impact of the disturbed area as viewed from the west.</p> <p>After vegetation removal and stripping, the CSEP will be developed from the southern end, working on grade progressively northeast on the eastern side to maximise the topographical shielding, before extraction to full depth in the northeast and working back in a southwest direction.</p> <p>Design of extraction pit including number of benches and slope configuration</p> <p>Benching and batter slopes are shown on Figure 3, Site Layout Plan.</p> <p>Number of benches</p> <p>The FMSEP will consist of a maximum of five (5) benches above the water table (on the higher elevation eastern side), although generally only one or two. There will be a single bench below the water table</p> <p>There will be four (4) terminal faces on the eastern side of the CSEP and two on the western side.</p> <p>Bench Slope & Configuration.</p> <p>Face and batter designs are based on the geotechnical work undertaken by GHD (see attached document WA1488 Geotechnical Assessment of Proposed Pit Design.pdf), and in particular Figure 24 of that assessment (Slope Design Geometry 1- Charts for Pit Face Excavation).</p> <p>The general design for the terminal benches within the FMSEP is;</p> <p>Upper Slope (eastern side only) – 15m high, with a 10m berm and an overall slope of 1V:3.4H</p>
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	<p>Lower Slope – 15m high, with a 7.5m berm and an overall slope of 1V:2.1H</p> <p>Underwater bench – 20m high and an overall slope of 1V:2H</p> <p>The final slope on the eastern side, from underwater toe to crest, is designed to be 1V:3.2H</p> <p>A 20 m wide beaching bench of 1V:10H will be establish at water level</p> <p>The general design for the terminal benches within the CSEP is;</p> <p>Eastern side – 15m high, with a 7.5m berm and an overall slope 1V: 1.5H</p> <p>Western side – 15m high, with a 7.5m berm and an overall slope 1V:1.3H</p> <p>All indicated slopes “Crest to Toe”. Terminal face profiles are depicted visually on the insets on Figure 3 Site Layout Plan.</p> <p>Working faces in both the FMSEP and the CSEP will be approximately 1V:1H over 15m benches.</p> <p>Working face profiles are depicted visually on the insets on Figure 3 Site Layout Plan.</p> <p>Indicative time between completion of extraction and rehabilitation</p> <p>Progressive rehabilitation will be integrated into normal (e.g. weekly, monthly) operations as much as possible to maintain focus on the achievement of successful progressive rehabilitation outcomes. The backfilling/rehabilitation of terminal faces in the CSEP will not commence until extraction has reached final depth (floor level) in the north-eastern terminal face, which will be no longer than five (5) years after the commencement of CSEP extraction.</p> <p>Due to the importance afforded progressive rehabilitation over the life of operations, it is anticipated that all final earthworks involved in rehabilitation of the WA1488 will be achieved within 12 months of the completion of sand extraction.</p> <p>See Rehabilitation and Site Closure Plan (attached) for greater details.</p> <p>Describe depth and slope for all parts of extraction area</p> <p>See Figure 3 Site Layout Plan for the specific details of all parts of the excavation.</p> <p>Dewatering</p> <p>As part of the works proposed groundwater will be used for both processing and dust suppression. Groundwater will be extracted directly from the dredge pond, using both a separate floating pontoon pump and as part of the dredging operations.</p> <p>Appropriate licensing, including a Take and Use entitlement, is being sought from Southern Rural Water and will be secured before any groundwater is extracted (see attached ad hoc document).</p> <p>Vegetation clearing</p>
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	<p>The proposed changes to the extraction area will result in impacts to existing native vegetation. A Native Vegetation Removal Report, Detailed Pathway, has been prepared by Paul Kelly & Associates (see attached) and identifies 12.988 ha extent of proposed removal and 47 large trees. The resultant offset requirement is detailed in the aforementioned Report.</p> <p>The required offset will be secured through the management of existing native vegetation on private land owned or controlled by DPQ, being both within WA1488 and on the adjoining allotment to the north. This allotment abuts the Gurdies Nature Conservation Reserve. As part of the above Report, an assessment of the available offset vegetation has been made and this will continue to be secured through an existing s173 agreement on title.</p> <p>The Grantville Offset Management Plan has been prepared in relation to these offset areas and a copy is attached as part of the Report.</p> <p>Heritage sites</p> <p>The western boundary of WA1488 is partially covered by a mapped area of Cultural Heritage Sensitivity. The proposed changes described in this Work Plan Variation do not impact on this area of mapped Cultural Heritage nor is there any proposal to vary the boundary of WA1488. As such the preparation of a Cultural Heritage Management Plan is not required.</p> <p>An Aboriginal Victoria self-assessment/process list concerning the need or otherwise for a Cultural Heritage Management Plan (CHMP), and a proponent's CHMP Declaration are attached.</p> <p>There are no registered/documented European heritage sites on the Work Authority</p> <p>Blasting methods and times</p> <p>No blasting is proposed.</p> <p>Drainage diversion</p> <p>The FMSEP will directly impact on the Deep Creek tributary MW3840, and result in the removal of part of this drainage line and its catchment. No other drainage lines are impacted by the proposed works and no diversion is necessary.</p> <p>An assessment of the resultant impact on Deep Creek and the downstream environment has been undertaken by Water Technology (see attached) and concluded that the proposed expansion of extraction activities will have no significant or detrimental impact on the hydrological regime of the lower reaches of Deep Creek, below its confluence with the MW3840 tributary. Protection measures related to the western end of MW3840 are already in place through an 'Endorsed Plan' under Planning Permit No 120388 (see attached as Bass Coast Landcare – RG_Grantville_Landscape Plan_FINAL_Oct 2013.pdf). DPQ has engaged with Melbourne Water as part of the quarry's development and Melbourne Water have provided confirmation of their satisfaction with the proposed extraction area (see attached correspondence).</p> <p>Surface Water Management</p> <p>The site water management strategy is to divert surface water flowing across undisturbed ground around the works, and direct and collect</p>
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	<p>surface water flows over disturbed ground into sediment dams, the base of the excavation or the dredge pond. A site Surface Water Management Plan (SWMP), including a monitoring program, has been developed and implemented in accordance with the recommendation of surface water assessments (conducted both prior to quarrying commencing and more recently to inform this variation). The SWMP will be reviewed and revised as part of standard DPQ operating practices. A copy of the SWMP is attached and provided for information only.</p> <p>Location of topsoils, overburden and product (Sch1 1.3d)</p> <p>The location of temporary topsoil and overburden stockpiles are shown on Figure 3 Site Layout Plan. Where possible these will be located within the future extraction footprint. Topsoil stockpiles will be no higher than 2m.</p> <p>Product stockpiles will generally be located adjacent to the processing plant (see Figure 3). Where additional product stockpile space is required, an area within the FMSEP extraction area will be stripped of topsoil and overburden and established as a temporary stockpile. Product stockpiles will generally be 5 to 10m in height, but no higher than 15m.</p> <p>Water source for site operations</p> <p>Water will be required for the proposed sand washing processing plant, and for continued dust suppression. Currently water for dust suppression is sourced from existing farm dams. As part of the works proposed groundwater will be extracted directly from the dredge pond for processing and dust suppression use.</p> <p>Potable water for use in the offices etc is sourced from off-site or by rainwater collection.</p> <p>Physical and chemical composition of hazardous material (Sch1 1.3c)</p> <p>There are no known hazardous materials / chemicals in the resource. The resource drilling identified the intermittent presence of some organic material below the water table, with any impacts mitigated through processing and the management of stockpiles and surface water run-off. The potential for impacts on groundwater quality was considered in both the groundwater and surface water assessments (see attached Hydrogeological Assessment and Surface Water Assessment). Monitoring associated with the Groundwater and Surface Water Management Plans will continue to monitor and assess potential impacts on the water quality.</p> <p>The site stores and uses hydrocarbons (including fuels, lubricants and greases). Any flocculants or other water treatments that may be used in the sand processing plant are all industry proven and accepted environmentally safe products.</p> <p>A register of MSDS's of any chemicals (ie hydrocarbons, flocculants, dust suppressants) used on the site will be maintained at the quarry office. Risks associated with fuel, lubricants and other hazardous materials are considered in the Risk Management Plan (RTP 2.10).</p> <p>Permit, approval and licencing requirements</p> <p>The proposed works will require planning consent from the Bass Coast Shire, and a letter confirming this is attached (2019 12 12 Planning advise re 1381-1395 Bass Highway Grantville.pdf).</p>
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	<p>Licensing associated with a water entitlement and Take and Use Licence from Southern Rural Water will be required and is being sought. Any permitting or approvals concerning the impacts on Melbourne Water assets will be secured prior to those impacts occurring.</p> <p>Description and location of roads, bridges, pipelines, powerlines, easements, waterways, depth to groundwater heritage sites and communities in the vicinity of project area (Shd1 1.1 & Sch1 1.5)</p> <p>The extent of crown land is shown on Figure 2 Locality Plan. The status of Crown land within the vicinity of the site includes Government roads, reserves (to the north east) and managed crown lands and is shown on WA1488 Crown Land Status (GeoVic).pdf, attached as an ad-hoc document. The extent of private land in shown of Figure 2 Locality Plan.</p> <p>Residential properties within 2km of the work authority are presented on Figure 2 Locality Plan. Commercial and industrial development and public facilities and infrastructure in the surrounding area are also presented on Figure 2 Locality Plan.</p> <p>Roads, bridges, pipelines, powerlines and other public assets (if any) within 2km of the site are identified on Figure 2 Locality Plan. These include public assets within the Western Port Coastal Reserve.</p> <p>Groundwater levels are well established and have been monitored since the quarry commenced in 2013. The maximum extraction depth in the FMSEP is -13mRL, designed to be approximately 19m below the existing groundwater table at the FMSEP.</p> <p>The surface water way Deep Creek (MW3839) is located immediately north and west of the Work Authority. A tributary of Deep Creek (being MW3840) will be partially removed by the development of the FMSEP.</p> <p>The description of titles</p> <p>Title Volume 07824, Folio 032 and Plan TP267029V (CA 176B PP2453) Title Volume 05390, Folio 819 and Plan TP398939V (CA 1 TP398939) Title Volume 08869, Folio 053 and Plan TP515206V (CA 1 TP515206) Title Volume 11044, Folio 476 and Plan PS604744H (CA 5 PS604744) Title Volume 11044, Folio 475 and Plan PS604744H (CA 4 PS604744) Title Volume 10031, Folio 148 and Plan PS300991J (CA 2 PS300991)</p> <p>There are no depth limitations on any titles.</p> <p>Potential heritage sensitive receptors are discussed above.</p> <p>Community engagement plan: (Sch1 6)</p> <p>The aim of the Community Engagement Plan (CEP) is to share relevant information about the Work Authority that may affect the community and providing reasonable opportunities for the community to express their views about activities at the site. The name and contact details of the Quarry Manager are displayed on a sign at the Site Entrance for any members of the community to use for providing feedback.</p> <p>The CEP provides reasonable opportunities for the community to express their views about activities at the site, including the establishment and maintenance of a complaints register with the following information to be recorded:-</p> <ul style="list-style-type: none"> the date and time of the complaint;
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	<ul style="list-style-type: none"> • who the complaint was from; • the specific issue/s raised in the complaint; • the actions taken to address the specific issue/s raised in the complaint; • acknowledge complainants and notify them of outcomes. <p>Rehabilitation plan:</p> <p>The primary objective of the Rehabilitation Plan for the site is to leave it in a safe, stable and sustainable condition. The rehabilitated landform will include some backfilled excavation areas and a water filled pit.</p> <p>Progressive rehabilitation and land management priorities include:</p> <ul style="list-style-type: none"> • Surface drainage and erosion control • Maintaining appropriate / effective visual screens through plantation vegetation • Weed control and management; • Pest animal control and management; • Bush fire prevention and management; <p>All proclaimed noxious weeds on the site will be controlled in accordance with the Catchment & Land Protection Act (1994) and the recommended herbicide application. The primary objective is to ensure that noxious weeds do not contaminate adjoining land. Noxious Weed control will be carried out in accordance with the herbicide manufacturer's recommendations including the most appropriate time to ensure effective control. Care will be exercised during weed control works to ensure the natural regeneration of native shrubs and trees will not be sprayed with herbicide.</p> <p>WA1488 Rehabilitation and Site Closure Plan details the objectives, strategies, monitoring and reporting requirements as well as the operational and post closure criteria.</p>
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Area Details	
Property Name	DPQ Grantville
Address	1381 Bass Highway
Suburb / Town	Grantville
Postcode	3984
Land Tenure (ownership) details	
Land Tenure Type	
Depth Limitations	No
Depth Limits	

Resource Type	
WA Commodity	Gravel; Sand
WA Primary Commodity	Sand
Total Resource Estimate	76,000,000.00
Unit of Measure	Tonnes

Proposed Final Depth of Extraction	
Estimated Max Terminal Depth	88.00 metres
Batter Slope Angle	degrees

Top soil, overburden and subsoil disturbance	
Est Volume of Top Soil	130,000.00
Unit of Measure Top Soil	Cubic metres
Est Depth of Top Soil	0.10 metres
Est Volume of Overburden	3,600,000.00
Unit of Measure Overburden	Cubic metres
Est Depth of Overburden	7.50 metres
Area of Disturbance	84.21 hectares

Operation Type	
Operation Type	Dry open pit; Wet open pit; Multi - level; Dredging
Operation Type – Other	

Plant, Equipment and Method
<p>Buildings and non-processing assets (Sch1 1.3e)</p> <p>Mobile Plant will include dry excavating equipment (trucks, loaders, excavators etc) and a wet extraction floating (pontoon mounted) cutter suction dredge. Ancillary mobile equipment such as mobile screening plant, graders, scrapers, watercarts etc. may also be used.</p> <p>Processing Plant (Sch1 1.3b)</p> <p>Processing plant includes screens, conveyors, stackers, pipelines, pumps, tanks, thickeners, filters and associated electric motors and control units.</p> <p>Derelict and redundant plant</p> <p>All derelict and redundant plant, vehicles, machinery and equipment is stored in a designated area, out of sight of the general public from Work Authority boundaries, until removed or sold to a third party.</p> <p>Equipment Location. Location of workshop, storage sheds, lunchroom, amenities, site office, laboratory, weighbridge, training and meeting rooms, maintenance, hardstand and Vehicle wash-down: (Sch1 1.3e)</p> <p>The location of processing fixed plant, and associated quarrying infrastructure (including offices, a workshop, weighbridge and wheel wash are shown on Figure 3 Site Layout Plan.</p> <p>Location of topsoils, overburden and product (Sch1 1.3d)</p>

The location of temporary topsoil and overburden stockpiles are shown on Figure 3 Site Layout Plan. Where possible these will be located within the future extraction footprint.

Product stockpiles will generally be located adjacent to the processing plant (see Figure 3). Where additional product stockpile space is required, an area within the FMSEP extraction area will be stripped of top soil and established as a temporary stockpile.

Slimes generated from the processing plant will be filtered and thickened to a spadeable filter cake (approx. 60% solids) consistency and blended with overburden for use in rehabilitation. When immediate use in rehabilitation backfilling is not possible this material will be stacked within the FMSEP extraction area and adjacent to the dredge pond, on an area already stripped of top soil and overburden (see Figure 3). Any drainage or sediment run-off from this storage area will directly enter the dredge pond.

Dewatering equipment and location of water bores and pumps:

Groundwater will be extracted directly from the dredge pond as part of the dredging operations or via a separate floating pontoon pump. The location of these activities will change as the dredge pond develops, with Figure 3 Site Layout Plan indicating notional locations only.

Operation Hours:

Site Establishment/Construction 6am-6pm M-F and 6am-1pm Sat

Extraction 7am-6pm M-F and 7am-1pm Sat

Sales (Loading & Dispatch) 6am-10pm M-F and 6am-4pm Sat

Processing (a) Screening/Blending, Sand Washing and other Ancillary Plant Processing Operations

6am – 6pm M-F and 6am – 1pm Sat

(b) Clarifier/Thickener, Mud Buffer Tank and Belt Press Dewatering Operations

ONLY

6am – 2am (next morning) M-F and 6am – 10pm Sat

Repairs & Maintenance 6am-10pm Mon – Sat

Operating Hours (24 Hour)

	Above Ground Operations	Sales	Processing
Mon-Fri Start	7:00	6:00	6:00
Mon-Fri End	18:00	20:00	2:00
Sat Start	7:00	6:00	6:00
Sat End	13:00	16:00	22:00
Sun Start	N/A	N/A	N/A
Sun End	N/A	N/A	N/A

Public Holiday Activity	No	No	No
Operational hours Clarification	Repairs & Maintenance 6am-10pm Mon – Sun Water Clarifier/Thickener, Mud Buffer Tank & Dewatering Belt Press Only, 6.00pm - 2.00am Monday to Friday and 1.00pm - 10.00pm Saturday		

Risk Management Plan

Hazard:				
Source	Receptor	Standard Controls and Measures	Monitoring and Reporting	Additional Treatment Required

Attachments Provided

Mineral Resources (Sustainable Development) Act 1990			RISK REGISTER FOR WORK AUTHORITY NUMBER:			WA1488			Dandy Premix			Laste Updated: Dec 2019		
Tenement Number: WA1488 Hazard: PLN-001534 Plan Number: _____ Work Plan Variation Statutorily Endorsed ALTERED VISUAL / <i>Quarry</i> Signed: _____ Delegate of the Department Head Date: 29/05/2020			Risk Event	Causes/Background	Receptors	Phase of Project			Risk Assessment prior to additional risk controls - project inherent risk			Risk Assessment after including risk controls - project residual risk		
						Construction	Operation	Closure	Likelihood	Consequence	Risk Rating	Likelihood	Consequence	Risk Rating
			nd operations visible from residence	Vehicle movements, processing equipment, OB mounds and quarry operation	Residences to the west of WA1488	Yes	Yes	Yes	Almost Certain	Minor	High	Possible	Minor	Medium
			Plant and operations visible from roads	Vehicle movements, processing equipment, OB mounds and quarry operation	Nearby public roads including the Bass Highway	Yes	Yes	Yes	Almost Certain	Minor	High	Possible	Minor	Medium
NOISE			3	Excessive noise at any sensitive receptors resulting from vehicle movements	Truck / vehicle movements, (Road trucks, loaders, haul truck)	Yes	Yes	Yes	Possible	Moderate	Medium	Rare	Minor	Low
			4	Excessive noise at any sensitive receptors resulting from wash plant	Wash Plant (incl. screens, stackers)	Yes	Yes	No	Possible	Moderate	Medium	Rare	Minor	Low
			5	Excessive noise at any sensitive receptors resulting from excavating equipment	Excavating equipment (eg dozer, loader, excavator, dredge)	Yes	Yes	No	Possible	Moderate	Medium	Rare	Minor	Low
DUST			6	Excessive dust from vehicle movements on all access roads, site roads and hardstands	Excavation and associated site operations	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Minor	Low
			7	Excessive dust from processing plant and equipment within the WA	Excavation and associated site operations	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Minor	Low
			8	Excessive dust from soil and overburden dumps (construction and maintenance)	Excavation and associated site operations	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Minor	Low
			9	Excessive dust from product stockpiles	Excavation and associated site operations	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Minor	Low
			10	Excessive dust when stripping top soil	Excavation and associated site operations	Yes	Yes	No	Likely	Moderate	High	Possible	Minor	Medium
			11	Excessive dust during rehabilitation	Excavation and associated site operations	Yes	Yes	Yes	Likely	Moderate	High	Possible	Minor	Medium
STORM WATER/FLOODING			12	Storm water not contained on site, resulting in turbid water discharge	Major storm events (ie <5AEP)	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Minor	Low
			13	Inundation from flooding	Major storm events (ie <1AEP)	Yes	Yes	Yes	Rare	Minor	Low	Rare	Minor	Low
GROUND DISTURBANCE			14	Ground disturbing works impacting on Aboriginal heritage	Excavation and associated site operations	Yes	Yes	Yes	Rare	Critical	High	Rare	Critical	High
			15	Ground disturbing works impacting on European heritage	Excavation and associated site operations	Yes	Yes	Yes	Unlikely	Minor	Low	Unlikely	Minor	Low
			16	Ground disturbing works resulting in unauthorised impact on native vegetation.	Unauthorised excavation and associated site operations	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Moderate	Medium
			17	Ground disturbing works impacting on groundwater	Excavation and associated site operations	Yes	Yes	Yes	Unlikely	Minor	Low	Unlikely	Minor	Low
			18	Ground disturbing works impacting on surface water	Excavation and associated site operations	Yes	Yes	Yes	Almost Certain	Moderate	Very High	Possible	Moderate	Medium
GROUND INSTABILITY			19	Slope / embankment failure impacting beyond WA boundary	Excavation and associated site operations	Yes	Yes	Yes	Possible	Major	High	Rare	Minor	Low
			20	Localised (single bench/face) failure resulting in silt laden run-off	Excavation and associated site operations	Yes	Yes	No	Possible	Moderate	Medium	Possible	Minor	Medium
			21	Large stockpile/overburden dump slumping resulting in silt laden run-off	Vehicle movements, OB mounds and quarry operation	Yes	Yes	Yes	Possible	Moderate	Medium	Rare	Minor	Low
EROSION & SEDIMENTATION			22	Erosion from stockpiles (product and other hard stand areas including slimes drying pads) resulting in silt laden run-off	Excavation and associated site operations	Yes	Yes	Yes	Likely	Moderate	High	Possible	Minor	Medium
			23	Erosion from roads and disturbed areas resulting in silt laden run-off	Excavation and associated site operations	Yes	Yes	Yes	Likely	Moderate	High	Possible	Minor	Medium
			24	Erosion from bunds resulting in silt laden run-off	Excavation and associated site operations	Yes	Yes	Yes	Likely	Moderate	High	Possible	Minor	Medium
			25	Erosion from ruptured dredge product pipeline resulting in silt laden run-off	Excavation and associated site operations	Yes	Yes	No	Likely	Moderate	High	Possible	Minor	Medium
IMPORTED MATERIALS			26	Impacts on the natural environment from imported materials containing weeds or other contaminants	Imported material	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Moderate	Medium

Hazard	Risk No	Risk Event	Causes/Background	Receptors	Phase of Project			Risk Assessment prior to additional risk controls - project inherent risk			Risk Assessment after including risk controls - project residual risk		
					Construction	Operation	Closure	Likelihood	Consequence	Risk Rating	Likelihood	Consequence	Risk Rating
	27	Impacts on the natural environment, including surface and groundwater, from hazardous waste being imported to site	Imported material	Environment, surface and groundwater	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Moderate	Medium
	28	Impacts on the natural environment, including surface and groundwater, from introducing soil-borne diseases to site	Imported material	Environment, surface and groundwater	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Moderate	Medium
UNAUTHORISED SITE ACCESS	29	Unauthorised access to quarry faces resulting in personal injury or damage	Excavation and associated site operations	Public safety	Yes	Yes	Yes	Possible	Major	High	Rare	Major	Medium
	30	Unauthorised access to operating equipment or plant could result in personal injury or damage to quarrying plant	Excavation and associated site operations	Public safety/private property	Yes	Yes	Yes	Possible	Minor	Medium	Rare	Minor	Low
FUEL, LUBRICANTS, OTHER HAZARDOUS MATERIALS	31	Damage to fuel storage tanks (vandalism, accident) resulting in impacts on the environment	Spills from fuel storage tanks and other hydrocarbon storages	Environment, surface and groundwater	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Moderate	Medium
	32	Spills / discharges whilst refuelling resulting in impacts on the environment	Spills during refuelling and maintenance	Environment, surface and groundwater	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Moderate	Medium
	33	Spills / damage to other chemical (flocculant) stores resulting in impacts on the environment	Spills from chemical stores	Environment, surface and groundwater	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Moderate	Medium
	33	Damage to equipment fuel/oil systems (vandalism, machine collision, accident) resulting in impacts on the environment	Spills from operating equipment	Environment, surface and groundwater	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Moderate	Medium
PESTS, WEEDS & DISEASES	34	Allowing weeds to spread from the site to neighbouring properties	Uncontrolled proliferation of weeds and pest animals	Environment	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Moderate	Medium
	35	Harbouring pest animals	Uncontrolled proliferation of weeds and pest animals	Environment	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Moderate	Medium
	36	Unsanitized plant / equipment introducing weeds and/or diseases	Plant and equipment not clean prior to arriving on site	Environment	Yes	Yes	Yes	Possible	Moderate	Medium	Unlikely	Moderate	Medium
RUBBISH / NON MINERAL WASTE	37	Uncontrolled handling of domestic and industrial waste resulting in contaminating the environment	Domestic and industrial waste	Environment	Yes	Yes	Yes	Possible	Minor	Medium	Unlikely	Minor	Low
	38	Potential contamination of the amenity and environment through the poor handling of redundant plant and equipment	Redundant plant and equipment	Environment	Yes	Yes	Yes	Possible	Minor	Medium	Unlikely	Minor	Low
FIRE	39	Uncontrolled fire could either enter or leave the site causing injury or damage	Bushfire, fixed or mobile plant	Public safety, private property and environment	Yes	Yes	Yes	Possible	Critical	Very High	Unlikely	Critical	High
	40	Fixed or mobile plant / hot works igniting a fire causing injury or damage	Fixed or mobile plant	Public safety, private property and environment	Yes	Yes	Yes	Possible	Critical	Very High	Unlikely	Critical	High
SOIL BIOLOGICAL ACTIVITY	41	Unsuccessful rehabilitation due to poor soil biological activity	Poor soil storage practices	Environment	Yes	Yes	Yes	Possible	Minor	Medium	Unlikely	Minor	Low
VEHICLE SEDIMENT TRANSPORT	42	Dust, stone, gravel, mud impacting on public roads	Trucking	Public safety and amenity	Yes	Yes	No	Possible	Moderate	Medium	Unlikely	Minor	Low

Risk Management Plan

for

WA1488 – Dandy Premix Quarries Pty Ltd – Grantville

RRAM : PLN-001354



Feb 2020

*Mineral Resources (Sustainable Development) Act
1990*

Tenement Number: WA1488

Plan Number: PLN-001354

Work Plan Variation Statutorily Endorsed

Signed: *Quintell*

Delegate of the Department Head

Date: 29/05/2020

Table of Contents

1. Risk Management Plan.....	3
1.1. Summary	3
1.2. Description of Risk Assessment Process.....	3
1.3. Risk Register	4
1.4. Hazards not present on site or not considered	4
2. Risk Treatment Plans	4
Risk Treatment Plan Abbreviation.....	4
2.1. Altered Visual Amenity	5
2.2. Noise	8
2.3. Dust	11
2.4. Storm Water	14
2.5. Ground Disturbance	17
2.6. Ground Instability	22
2.7. Erosion and Sedimentation	26
2.8. Imported Materials.....	29
2.9. Unauthorised Site Access	32
2.10. Fuel, Lubricants, other Hazardous Materials	34
2.11. Pests, Weeds and Diseases	37
2.12. Rubbish / non-mineral waste.....	40
2.13. Fire	42
2.14. Soil Biological Activity.....	45
2.15. Vehicle Sediment Transport.....	47

Revision History.

Document	Description
Date	
8 Nov 2019	1 st draft of RMP
15 Dec 2019	V2
19 Dec 2019	V3
30 Dec 2019	V4
8 Jan 2020	V5
20 Feb 2020	V6

1. Risk Management Plan

1.1. Summary

This Risk Management Plan is submitted to support PLN-001354, a Work Plan Variation related to WA1488, known as Dandy Premix Quarries (DPQ) Grantville operations. WA1488 is a key site in securing DPQ's presence in the construction sand market, with this resource providing many decades of reliable sand resource.

The Work Plan Variation describes:

- An expanded fine and medium sand extraction area (FMSEP) from 21.50 ha to 63.45 ha,
- A separate, new, coarse sand extraction area (CSEP) of 13.88 ha
- The extraction of fine sand from below the ground water level by dredging, and
- The extension of operating hours associated with sales.

The operation is located on the eastern side of the Bass Highway at Grantville, approximately 15km south of Lang Lang, see Figure 1 Regional Plan.

The extent of the resource has been estimated from 69 sand resource investigation holes.

From the geological model developed, the pit strata are expected to consist of:

- 150-200 mm of soil in open paddocks to under 100mm poor sand soil where sand outcrops,
- 5-10m of overburden,
- Over 60 metres sand sequence generally consisting of fine-medium, medium-coarse, coarse and very fine sand
- Organic coated sands occur in places.

Ground water has been located through the resource drilling.

A full description of the works proposed at the site can be found in PLN-001354 WA1488 Risk Based Work Plan.

1.2. Description of Risk Assessment Process

The Risk Management Plan, including the Risk Register for this site has been developed by BCA Consulting in conjunction with DPQ key personal namely the Manager Sustainability, Garry Cranny, and processing consultant, Stewart Young.

As a starting point a table of standard quarrying risks was presented to DPQ, then reviewed and discussed. These discussions focused on:

- Identifying all potential site-based activities that might result in hazard events related to public safety, the environment or public infrastructure.
- Identifying sensitive receptors within the vicinity of the site (generally out to 1000m), including a review of any complaints or feedback received by DPQ from community or stakeholders for the existing operations.
- Identifying individual risks associated with these hazards.
- Reviewing the controls, including any site-specific controls that might need to be applied and their suitability.
- Reviewing the applicability of standard industry controls where these were not already considered.

- Discussion related to poor or below standard implementation of controls on the existing operation and a review of how recommendations for any remedial works have been implemented.
- The effectiveness of controls moving forward, and the resultant residual risk of individual events.

1.3. Risk Register

The risk matrix adopted by ERR is presented below. A full description of the likelihood and consequence ratings is contained in the ERR document *Preparation of Work Plans and Work Plan Variations, Guideline for extractive industry projects, December 2018*.

Likelihood	Almost Certain	Medium	High	Very High	Very High	Very High
	Likely	Medium	Medium	High	Very High	Very High
	Possible	Low	Medium	Medium	High	Very High
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Medium	Medium	High
		Insignificant	Minor	Moderate	Major	Critical
		Consequence				

The Risk Register is attached as Appendix 1

1.4. Hazards not present on site or not considered

When developing the Risk Register for the site, the following hazards generally associated with quarrying were considered and identified as not being present at the site or not to be included in this Risk Management Plan :

- Hazards associated with constructed slimes dams
- Hazards associated with blasting
- Hazards related to OH&S and operational risk

2. Risk Treatment Plans

Risk Treatment Plan Abbreviation

The following abbreviations are used throughout the Risk Treatment Plans:

RTP	Risk Treatment Plan
C	Construction phase of the operation
O	Operating phase of the operation
R	Rehabilitation / Closure phase of the operation
ALL	All phases of the operation

2.1. Altered Visual Amenity

Scope

This risk treatment plan is for the control of visual impacts arising from the operation of the quarry.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Residence within 1000m	Numerous residences located west of the Bass Highway and to the west of the site (adjacent-300m from WA boundary) Three (3) residences located to the north east (400-600m)
2.	Public Roads	Operation maybe partially visible from the Bass Highway and local roads immediately to the west of the site.

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Plant and operations visible from residence	ALL	Almost Certain	Minor	HIGH
2.	Plant and operations visible from roads	ALL	Almost Certain	Minor	HIGH

Project Design

Views to the site are restricted by existing landforms and on site/off site vegetation. These features are likely to be maintained over the long term. Zones of Visual Influence modelling and field assessment confirms that there are no views to the existing operational area from major public or private visual receptor areas and that this condition is likely to exist with or without vegetation for all areas.

Remnant vegetation on elevated parts of the site is an important part of the Westernport Bay backdrop and is sensitive to future excavations. However, this area has higher visual absorption capacity compared to the grazing land. Proper siting and design of the quarry pit with visual screening can ameliorate and minimize the impacts.

A preliminary Landscape and Visual Impact Assessment has been conducted by Tract Consultants and is attached. It is intended that further work will be undertaken as part of the planning process.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise the visibility of the site from nearby residence and roads

Compliance standards

The compliance standards for this risk treatment plan are:

- Positive engagement and feedback from nearby residences.

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- A reduction in the visibility of the site operations when viewed from nearby residences and public roads.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	Development (construction, landscaping, vegetating) screening bunds	Screening bunds and plantings established and healthy
2.	Maintenance (and if necessary, re-planting) of screening vegetation	Bunds and screening vegetation, both which formed part of the existing approved work plan and any new plantings, maintained to ensure effectiveness.
3.	Processing plant designed and constructed to minimise height and potential visibility	Compliance to Work Plan and Site Layout Plan
4.	Landscaping of any bunding and ongoing progressive rehabilitation	Landscaping maintained in neat and orderly condition
5.	Planning of extraction stages to minimise viewsheds	Compliance to Work Plan and Site Layout Plan
6.	Establishing vegetation on rehabilitated batters as early as possible, starting with grasses/shrubs whilst waiting for trees to grow	Vegetation established and healthy
7.	Adherence to planned extraction stages to minimise viewsheds	Compliance to Work Plan and Site Layout Plan

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Plant and operations visible from residence	ALL	Possible	Minor	MEDIUM
2.	Plant and operations visible from roads	ALL	Possible	Minor	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Screening effectiveness	Routine inspections from outside the quarry boundary will be used to check screening effectiveness
2.	Buffer and landscape establishment	The establishment of buffer plantings, progressive rehabilitation plantings and vegetation on temporary dumps, long term overburden stockpiles and terminal faces will be monitored by regular inspections. Additional and/or replanting will be done to remediate slow or failed vegetation growth.
3.	Amenity impact	Complaints and comments raised through community engagement will be handled through the normal engagement process.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Vegetation and landscape establishment	Results of vegetation and landscape establishment monitoring (including photos as required) will be recorded and reported through community engagement activities and to Regulatory agencies as required.	To inform management of future works and any remedial actions.

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
	Nil	

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Site Office
2.	Site Layout Plan	Work Plan / Site Office
3.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.2. Noise

Scope

This risk treatment plan is for the control of noise generated by the quarry.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Residence within 1000m	Numerous residences located west of the Bass Highway and to the west of the site (adjacent-300m from WA boundary) Three (3) residences located to the north east (400-600m)

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Excessive noise at any sensitive receptors resulting from vehicle movements	ALL	Possible	Moderate	MEDIUM
2.	Excessive noise at any sensitive receptors resulting from wash plant	O	Possible	Moderate	MEDIUM
3.	Excessive noise at any sensitive receptors resulting from excavating equipment	ALL	Possible	Moderate	MEDIUM

Project Design

Receptors to the west of the operations were considered in the initial noise assessment conducted in 2012, at which time noise constraints under EPA guidelines were determined. These have been reviewed and revised in response to an increase in the ambient background noise levels that has occurred since that assessment, whilst NIRV Recommended Maximum Noise Levels for residential premises further to the east have also been determined. The Noise Emission Assessment conducted by Watson Moss Growcott Acoustics is attached.

A three-dimensional noise model for the site has been developed, which has been used to assess compliance with the noise limits at residential receptors and determine operational strategies to allow the proposed quarry pit extension to proceed in compliance with the noise constraints. It has been found that by implementation of minimal operational strategies the proposed extension of the quarry extraction areas and installation of additional processing plant can be implemented while remaining in compliance with the NIRV Recommended Maximum Noise Levels.

A separate, stand-alone, assessment related to the extension of sales hours has also been conducted by Watson Moss Growcott (see attached). This assessment, which reviews, and analyses monitoring conducted during a trial period in late June/early July 2019, concludes that the extended hours would not introduce noise events that are not part of the existing ambient environment.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise offsite noise impacts on nearby sensitive receptors, including members of the public, residential land uses and other sensitive land uses and environment

- Reduce noise generation from onsite activities and materials handling to the extent practicable
- Eliminate or reduce noise related complaints from residences
- Noise experienced by nearby sensitive receptors is within specification of SEP N-1 or NIRV guidelines

Compliance standards

The compliance standards for this risk treatment plan are:

- Noise from Industry in Rural Victoria (NIRV – EPA publication 1411)
- State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N-1 ('SEPP N-1')

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No noise complaints

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	Compliance to approved operating hours	Site Establishment/Construction 6am-6pm M-F and 6am-1pm Sat Extraction 7am-6pm M-F and 7am-1pm Sat Sales (Loading & Dispatch) 6am-10pm M-F and 6am-4pm Sat Processing (a) Screening/Blending, Sand Washing and other Ancillary Plant Processing Operations 6am – 6pm M-F and 6am – 1pm Sat (b) Clarifier/Thickener, Mud Buffer Tank and Belt Press Dewatering Operations ONLY 6am – 2am (next morning) M-F and 6am – 10pm Sat Repairs & Maintenance 6am-10pm Mon – Sat
2.	Mobile plant fitted with effective mufflers and other appropriate noise abatement devices	Mufflers and noise abatement devices fitted and maintained as per manufacture specification
3.	Extraction equipment orientation and position to take advantage of vegetation shielding and topography	Compliance to Site Layout Plan and staging/sequencing
4.	Dredge and pontoon operation designed and maintained to minimise noise emissions	Compliance to Work Plan and Site Layout Plan
5.	Equipment maintenance regime in accordance with manufacturer specifications.	All plant and equipment maintained as per manufacture specification
6.	Maintain access roads and site tracks in good condition	Roads and access tracks graded as required to minimise corrugations and potholes
7.	Engineered noise abatement of conveyors, vibrating screens, stacking conveyors, pumps and other processing equipment	Noise abatement devices fitted and maintained as per manufacture specification
8.	Squawkers fitted to appropriate mobile plant	Squawkers fitted and operational to all mobile equipment

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Excessive noise at any sensitive receptors resulting from vehicle movements	ALL	Rare	Minor	LOW
2.	Excessive noise at any sensitive receptors resulting from wash plant	O	Rare	Minor	LOW
3.	Excessive noise at any sensitive receptors resulting from excavating equipment	ALL	Rare	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Noise at sensitive receptors	<p>No formal noise monitoring is proposed, with observations made during inspections and engagement activities.</p> <p>Complaints, as well as other community engagement activities, and any resulting actions will be documented. Formal monitoring may be undertaken as part of a complain investigation process.</p> <p>Where formal monitoring is directed by EPA or ERR, monitoring locations, methods and frequencies will be in accordance with the regulatory agencies' requirements.</p> <p>The adequacy of control measures will be assessed through general observation as part of routine site inspections and feedback through community engagement</p>

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Incidents of noise complaints	Quarry Manager / On Event	Use data to confirm presence of any noise issues and identify and manage key noise generating activities and remedial actions
2.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	CMPA Noise Management Guidelines	CMPA Code PUB0037

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plan	Work Plan
2.	Site Layout Plan	Work Plan
3.	Internal Memo/Instruction as applicable	Site Office
4.	WPV conditions and Planning permit	Work Plan / Site Office

2.3. Dust

Scope

This risk treatment plan is for the control of dust generated by the quarry and quarrying activities.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Residence within 1000m	Numerous residences located west of the Bass Highway and to the west of the site (adjacent-300m to WA boundary) Three (3) residences located to the north east (400-600m)
2.	Public Roads	Operation maybe partially visible from the Bass Highway and local roads immediately to the west of the site.

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Excessive dust from vehicle movements on all access roads, site roads and hardstands	ALL	Possible	Moderate	MEDIUM
2.	Excessive dust from processing plant and equipment within the WA	O,R	Possible	Moderate	MEDIUM
3.	Excessive dust from soil and overburden dumps (construction & maintenance)	ALL	Possible	Moderate	MEDIUM
4.	Excessive dust from product stockpiles	ALL	Possible	Moderate	MEDIUM
5.	Excessive dust when stripping top soil	ALL	Likely	Moderate	HIGH
6.	Excessive dust during rehabilitation	O, R	Likely	Moderate	HIGH

Project Design

The two nearest off-site dwellings are situated approximately 200 m to the southwest (at 1421 and 1421A Bass Highway); and (2) about 230 m to the northwest (at 1353 Bass Highway). A small Low-Density Residential Zone, supporting a few dwellings accessed from the highway via Shackleford Rise, is located about 330 m to the southwest. A Dust Assessment has been undertaken by Environmental Science Associates regarding the works proposed and is attached.

Samples of the DPQ Grantville sand resource have undergone particle sieve and clay fine silts analysis to determine processing, blending and finished product use. Most of the sand to be mined is a very clean, free running resource with a low to negligible clay silt content and high moisture levels. Existing dust mitigation measures include some sealed internal roads, and a wheel wash for sales vehicles.

DPQ's Dust Management Plan has been designed to provide a high degree of dust control through a range of measures, including proactive initiatives triggered by predicted adverse weather conditions. A copy of the Dust Management Plan is included in the above Dust Assessment as an Attachment 3.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise offsite dust impacts on all nearby sensitive receptors including members of the public, residential land uses, and other sensitive land uses or environments.
- Control dust at the source by reducing or preventing dust generation from onsite activities and materials transport, to the extent practicable
- Minimise the impact to the local environment and amenity

Compliance standards

The compliance standards for this risk treatment plan are:

- EPA Protocol for Environment Management – Mining and Extractive Industries (EPA Pub 1191)
- State Environment Protection Policy Air Quality Management (SEPP AQM)
- EPA Guideline Recommended Separation Distances for Industrial Residual Air Emissions (EPA Pub 1518)

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No nuisance dust issues experienced by pre-existing, nearby sensitive receptors
- No nuisance dust related complaints

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	Minimise exposed / disturbed areas	Compliance to maximum disturbed area (inherent material has moisture content enough to reduce dust)
2.	Water cart on exposed areas, roads and hardstand areas etc	Water cart and ample supply of water available on forecast hot dry or during extended dry periods when inherent moisture content is reduced
3.	Consideration of automated systems ie sprinkler systems, on access roads and other high traffic areas	Effective moisture content of road surface to minimise dust at critical locations
4.	Consideration of application of chemical bonding agents to exposed areas/unsealed roadways	Effective application to minimise dust at critical locations
5.	Minimise vehicle movements and limit vehicle speeds	Speed / Traffic management signs (traffic management plan) maintained at critical locations
6.	Limit /restrict site access to minimise vehicle movements over disturbed ground	Traffic management signs (traffic management plan) maintained at critical locations
7.	Watering of extraction areas when inherent moisture reduced.	Water cart and ample supply of water available on forecast hot dry or during extended dry periods when inherent moisture content is reduced
8.	Progressively establish vegetation on topsoil/overburden stockpiles and rehabilitated landforms and in buffers	Topsoil, overburden bunds and terminal slopes vegetated within 6 months of construction Vegetation maintained
9.	Cessation of works during hot, dry high wind conditions	Managers discretion in accordance with Dust Management Plan based on visual observation, stakeholder engagement, effectiveness of other controls

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Excessive dust from vehicle movements on all access roads, site roads and hardstands	ALL	Unlikely	Minor	LOW
2.	Excessive dust from processing plant and equipment within the WA	O,R	Unlikely	Minor	LOW
3.	Excessive dust from soil and overburden dumps (construction & maintenance)	ALL	Unlikely	Minor	LOW
4.	Excessive dust from product stockpiles	ALL	Unlikely	Minor	LOW
5.	Excessive dust when stripping top soil	ALL	Possible	Minor	MEDIUM
6.	Excessive dust during rehabilitation	O, R	Possible	Minor	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Visual inspection of dust generated on site	Ongoing visual monitoring Hourly assessment of dust on hot/dry/windy days
2.	Dust deposition gauges (3). A further two (2) gauges are proposed for the initial 24 months of operation of the expanded extraction area.	Monthly sampling
3.	Complaints and observations/comments from sensitive receptors	Complaints and comments recorded

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Incidents of dust related complaints & comments	Quarry Manager / On Event	Use data to confirm presence of any dust related issues and identify and manage key dust generating activities and remedial actions
2.	Dust deposition results	Grantville ERC	Assess compliance and community review
3.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Dust Management Guidelines	CMPA Dust Management Guidelines

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Site Office
2.	DPQ Grantville Dust Management Plan	Site Office
3.	Site Layout Plan	Site Office
4.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.4. Storm Water

Scope

This risk treatment plan is for the management and control of storm water diverted around/away from the disturbed areas on site and collected within the disturbed areas on the site.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Deep Creek and associated tributaries	Within WA1488 and immediately to the north and west of the WA boundary.

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Storm water not contained on site, resulting in turbid water discharge	ALL	Possible	Moderate	MEDIUM
2.	Inundation from flooding	ALL	Rare	Minor	LOW

Project Design

The majority of the WA1488 site drains to the Melbourne Water asset MW3840, a tributary to Deep Creek, with ephemeral tributary flows entering Deep Creek just upstream from the Bass Highway. No other drainage lines enter or cross the proposed extraction areas. Terminal extraction face bunding will direct surface flows from undisturbed areas around the extraction areas. Incident rainfall/surface flows within the extraction footprint will be intercepted by the excavation/disturbance and directed to the quarry floor or dredge pond.

The site water management strategy is to divert surface water flowing across undisturbed ground around the works, and direct and collect surface water flows over disturbed ground into sediment dams, the base of the excavation or the dredge pond. A site Surface Water Management Plan (SWMP), including a monitoring program, has been developed and implemented. The SWMP will be reviewed and revised as part of standard DPQ operating practices. A copy of the SWMP is attached and provided for information only.

In-situ sand and gravels, overburden and top soil materials do not have any potential for Acid Mine Drainage. Sulphate soils are not present. Imported materials are vetted for contaminants.

Site experience has shown that swale drains typically 1m wide and 0.4m deep have been adequate in handling all storm events.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent site activities from adversely affecting local surface water sources
- Protect the beneficial uses of the local water environment as defined in the SEPP (Waters).

Compliance standards

The compliance standards for this risk treatment plan are:

- Water Act (1989)
- Catchment and Land Protection Act (1994)
- Planning and Environment Act (1979)
- State Environment Protection Policy (Waters) (SEPP Waters)

- EPA guideline “Construction Techniques for Sediment Pollution Control”
- State Environment Protection Policy (Waters) (SEPP Waters) – Monitoring, Evaluation and Reporting Framework
- EPA Guideline 1287 Risk Assessment of Wastewater Discharge to Waterways.

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Stormwater is managed to meet the SEPP
- No nuisance stormwater flooding/inundation of roads and other infrastructure

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	Construct roads with sufficient diversion drains and culverts to ensure that clean stormwater is diverted to undisturbed ground	Survey set out of roads and designs. Where necessary employ surface treatment to reduce erosion.
2.	Install diversion drainage structures (bunds) up-gradient of working areas to prevent clean surface water from entering the site and becoming contaminated.	Surface water diversion structures installed and effectively intercepting surface water before it reaches operating areas.
3.	Ensure that the gradient and orientation of tracks do not cause runoff to be fast flowing	Maintenance of tracks to minimise erosion.
4.	Arrange drainage of roads to be a vegetated area through erosion protection structures	Side and angled drain off collection drains protected against erosion.
5.	Ensure that drainage from an area where fuels/ lubricants/ hazardous material are stored/used is directed to a sump or an interceptor trap	Compliance to Work Plan and Site Layout Plan
6.	Diversion drains typically 1m wide and 0.4m deep adequate to accommodate the surface water flows storm events (ie 5% AEP)	Diversion drains capable of handling major (5% AEP) storm event
7.	Strategic location of sedimentation dams and transfer pumps/pipelines	No silt laden water leaving the site

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Storm water not contained on site, resulting in turbid water discharge	ALL	Unlikely	Minor	LOW
2.	Inundation from flooding	ALL	Rare	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Bunds, storm water culverts and discharge points	Inspect outlet area to assess the potential for contaminated stormwater to exit the site
2.	Erosion control structures	Inspect and maintain erosion control structures
3.	Effectiveness of perimeter diversion drainage structures	Inspected and maintained as required

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Storm water culverts and discharge points	Internal reporting for site management after significant rainfall event or six monthly	Management Intervention
2.	Erosion control structures	Internal reporting for site management after significant rainfall event or six monthly	Management Intervention
3.	Effectiveness of perimeter diversion drainage structures	Internal reporting for site management after significant rainfall event or six monthly	Management Intervention
4.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Guidance on Water Management Strategies for the Quarrying Industry	CMPA web site

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plan	Work Plan
2.	Site Plan	Site Office
3.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.5. Ground Disturbance

Scope

This risk treatment plan is for the control of impacts resulting from ground disturbing activities, such as vegetation clearing, stripping, excavations, stockpiling and rehabilitation

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Aboriginal heritage	An ACHS area is located on the western boundary of WA1488
2.	Historical heritage	There are no registered/documentated heritage sites on the Work Authority
3.	Native vegetation	Native vegetation on and adjacent to site
4.	Groundwater	The existing groundwater level is 19m above the design base of excavation in the FMSEP.
5.	Surface water	Deep Creek and tributaries, on and adjacent to the WA.

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Ground disturbing works impact on Aboriginal heritage	ALL	Rare	Critical	HIGH
2.	Ground disturbing works impact on European heritage	ALL	Unlikely	Minor	LOW
3.	Ground disturbing works resulting in unauthorised impact on native vegetation.	ALL	Possible	Moderate	MEDIUM
4.	Ground disturbing works impacting on groundwater	ALL	Unlikely	Minor	LOW
5.	Ground disturbing works impacting on surface water	ALL	Almost Certain	Moderate	VERY HIGH

Project Design

The western boundary of WA1488 is partially covered by a mapped area of Cultural Heritage Sensitivity. The proposed changes described in this Work Plan Variation do not impact on this area of mapped Cultural Heritage nor is there any proposal to vary the boundary of WA1488. An Aboriginal Victoria self-assessment/process list confirming a Cultural Heritage Management Plan (CHMP) is not required, and a proponent's CHMP Declaration are attached.

There are no records of any heritage sites within 200m of the Work Authority area.

The proposed changes to the extraction area will result in impacts to existing native vegetation. A Native Vegetation Removal Report, Detailed Pathway, has been prepared by Paul Kelly & Associates (see attached) and quantifies the vegetation impacts. The resultant offset requirement is also detailed in the Report. The required offset will be secured through the management of existing native vegetation on private land owned or controlled by DPQ, being both within WA1488 and on the adjoining allotment to the north. The Grantville Offset Management Plan has been prepared in relation to these offset areas and a copy of which is attached as Appendix 7 of the Paul Kelly & Associates report.

The maximum extraction depth in the FMSE pit is -13mRL, designed to be approximately 19m below the existing groundwater table at the FMSE pit. Fine sand extraction will be by floating dredge and groundwater will not be removed to facilitate extraction. The coarse sand pit (CSEP) will be above the water table. However, groundwater will be extracted for processing and dust suppression and appropriate licensing is being sought from Southern Rural Water. An assessment of the groundwater implications of the proposed

extraction expansion has been undertaken by John Leonard Consulting Services (see attached) and concluded that risks to groundwater quality and quantity were low and would be further reduced with the implementation of mitigation measures.

The expanded fine sand extraction area will directly impact on the Deep Creek tributary MW3840. An assessment of the resultant impact on Deep Creek and the downstream environment has been undertaken by Water Technology (see attached) and concluded that the proposed expansion of extraction activities will have no significant or detrimental impact on the hydrological regime of the lower reaches of Deep Creek, below its confluence with the MW3840 tributary. Protection measures related to the western end of MW3840 are already in place through an 'Endorsed Plan' under Planning Permit No 120388 (see attached as Bass Coast Landcare – RG_Grantville_Landscape Plan_FINAL_Oct 2013.pdf). DPQ has engaged with Melbourne Water as part of the quarry's development and Melbourne Water have provided confirmation of their satisfaction with the proposed extraction area expansion (see attached correspondence).

Objectives

The key objectives of this risk treatment plan are to:

- Minimise potential for ground disturbing works to impact on sensitive receptors

Compliance standards

The compliance standards for this risk treatment plan are:

- Aboriginal Heritage Act
- Heritage Act
- Guidelines for the removal, destruction or lopping of native vegetation (DELWP 2017)
- EPA State Environmental Protection Policy (Waters)
- EPA guideline "Construction Techniques for Sediment Pollution Control"

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- The discovery of any Aboriginal artefacts is managed in accordance with the Aboriginal Heritage Act.
- The discovery of any European heritage is managed in accordance with the Heritage Act
- No unauthorised impacts on native vegetation
- No impacts on groundwater quantity or quality as a result of extraction
- Impacts of surface water as a result of ground disturbing works are minimised.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	Quarry Manager aware of requirements of Aboriginal Heritage Act and the contingency measures for the discovery of any artefacts.	Monitoring for heritage artefacts during all soil and subsoil removal activities Compliance to Work Authority and Work Plan conditions
2.	AAV Heritage self-assessment and CHMP declaration completed.	Completed and attached to Work Plan
3.	Quarry Manager aware of requirements of Heritage Act and the contingency measures for the discovery of any artefacts.	Monitoring for heritage artefacts during all soil and subsoil removal activities Compliance to Work Authority and Work Plan conditions

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
4.	Fencing and signage to indicate “No Go” areas	Suitable Fencing and signage in place and effective
5.	Maintain agreed buffer zones	Compliance to Work Plan and Site Layout Plan
6.	All ground disturbing works will be conducted in accordance with the EPA guideline “Construction Techniques for Sediment Pollution Control”, or as updated.	Inspection Records
7.	Divert surface water away from disturbed area with culverts, swale drains and bunds.	Compliance to Work Plan and Site Layout Plan
8.	Strategic location of any sedimentation dams.	No turbid water leaving site
9.	Control structures on all internal roads and tracks.	No turbid water leaving site / Effectiveness of Water Management Strategy
10.	Compliance to design of all quarry faces, embankments and mounds.	Compliance to Work Plan and Site Layout Plan
11.	Dewatering of batters and berms, with surface drainage controls in place.	Compliance to Work Plan and Site Layout Plan

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Ground disturbing works impact on Aboriginal heritage	ALL	Rare	Critical	HIGH
2.	Ground disturbing works impact on European heritage	ALL	Unlikely	Minor	LOW
3.	Ground disturbing works resulting in unauthorised impact on native vegetation.	ALL	Unlikely	Moderate	MEDIUM
4.	Ground disturbing works impacting on groundwater	ALL	Unlikely	Minor	LOW
5.	Ground disturbing works impacting on surface water	ALL	Possible	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Aboriginal and Historic heritage	Reporting as required under contingency measures and the Aboriginal Heritage Act and Heritage Act to all relevant authorities and other indigenous stakeholders
2.	Unauthorised impacts on native vegetation	Fencing and buffer zone security and maintenance will be monitored through regular inspections. All inspections and any subsequent actions will be documented in the site record book.
3.	Groundwater impacts	The existing network of groundwater monitoring bores will continue to be monitored. A Groundwater Management Plan is included in the JLCS report, Chapter 12 .
4.	Surface water impacts	Inspections minimum monthly and after rain events less than 5%AEP, in accordance with management plan will be conducted including overburden and topsoil stockpiles, all surface water management structures and potential receiving drainage lines. Inspections, and any required monitoring and remedial actions documented in site record book. Specific surface water quality monitoring is not

#	Aspect to be monitored	Details of monitoring
		proposed but may be undertaken if directed by the ERR.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Aboriginal and Historic heritage	Reporting as required under contingency measures and the Aboriginal Heritage Act and Heritage Act to all relevant authorities and other indigenous stakeholders	Management Intervention
2.	Groundwater	Management, the Grantville ERC and SRW as required	Management Intervention, and to inform any SRW licensing requirement or variation to existing licensing arrangements.
3.	Surface water	The results of any required monitoring will be reported to ERR, and to other stakeholders through the community engagement process.	Management Intervention
4.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Exploration and Mining Licences: Guidance Notes for the Aboriginal Heritage Act/Heritage Act	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/exploration-and-mining-licences-guidance-notes-for-the-aboriginal-heritage-act
2.	Water Act 1989: Guidelines for quarries and mines	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/water-act-guidelines-for-quarries-and-mines
3.	Native Vegetation Guide for Mines and Quarries	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/native-vegetation-guide-for-mines-and-quarries
4.	Environmental Guidelines: Management of Water in Mines and Quarries	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/management-of-water-in-mines-and-quarries
5.	Native Vegetation Guide for Mines and Quarries	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/native-vegetation-guide-for-mines-and-quarries
6.	Guidance Material for the Assessment of Geotechnical Risks in Open Pit Mines and Quarries	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/guidance-material-for-the-assessment-of-geotechnical-risks-in-open-pit-mines-and-quarries

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan
2.	Groundwater Management Plan	JLCS report
3.	Site Layout Plan	Work Plan
4.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.6. Ground Instability

Scope

This risk treatment plan is for the control of impacts resulting from ground instability (failures) impacting beyond the Work Authority Boundary.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Crown Land	Grantville Bushland Reserve adjoining
2.	Private Property	Adjoining land
3.	Deep Creek	North and west of WA boundary
4.	Native vegetation	On-site vegetation protected by an NVOSMP

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Slope / embankment failure impacting beyond WA boundary	ALL	Possible	Major	HIGH
2.	Localised (single bench/face) failure resulting in silt laden run-off	C, O	Possible	Moderate	MEDIUM
3.	Large stockpile/overburden dump slumping resulting in silt laden run-off	C, O	Possible	Moderate	MEDIUM

Project Design

Failure of operating, terminal or rehabilitated quarry faces could impact on Crown or private land outside the WA boundary. There is also the potential for a failure to impact the area between the two extraction areas, although this will not impact any sensitive receptors. The buffer to the Work Authority from the terminal batter crest is a minimum of 20 m.

A geotechnical assessment of the pit and proposed batter designs has been undertaken by GHD and is attached. This assessment confirms the safety and stability of two (2) terminal batter geometries, with higher Factors of Safety applied to areas in proximity to external receptors including Crown land and the WA boundary.

A separate geotechnical assessment related to the overburden stockpile (and associated haul road) located in the southern central area of the WA was conducted by GHD as part of an 'Administrative Update' processed by ERR in late ERR. This assessment, including recommendations which have been accepted by DPQ as part of the 'Administrative Update', is attached. The specific controls are included below, with expanded detail contained within a Ground Control Management Plan (GCMP).

The GCMP has been developed, based on the recommendations of the above reports. In accordance with the Plan's requirements this document will be reviewed and revised as part of standard DPQ operating practices. A copy of the GCMP is attached and provided for information only.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise potential for ground slips/failures to impacting beyond the extraction limit

Compliance standards

The compliance standards for this risk treatment plan are:

- Guidance Material for the Assessment of Geotechnical Risks in Open Pit Mines and Quarries
- CMPA Working Safely with Geotechnical Risk in Quarries

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No ground slips/failure impacting beyond Extraction Boundary.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	Marking out Extraction Boundary	Extraction Boundary marked with Yellow Posts
2.	Fencing and signage to indicate “No Go” areas, buffer areas	Suitable Fencing and signage in place and effective
3.	Maintain agreed buffer zones	Compliance to Work Plan and Site Layout Plan
4.	Compliance to design of all quarry faces, embankments and stockpiles.	Compliance to Work Plan and Site Layout Plan, including those design details included in the GHD Geotechnical Assessments
5.	Divert surface water away from cut batters / embankments with culverts, swale drains and bunds.	Compliance to Work Plan and Site Layout Plan, including the Surface Water Management Plan
6.	Dewatering of batters and berms, with surface drainage controls in place.	Compliance to Work Plan and Site Layout Plan, including the Surface Water Management Plan
7.	Actions under the GCMP	Compliance to GCMP.
8.	Investigation of any localised bench failures.	Compliance to Work Plan and Site Layout Plan. Compliance to Rehabilitation Plan (Monitoring & reporting schedule)
9.	Prepare the foundation of the stockpile area by removing unsuitable material including clearing and grubbing and removal of site infrastructure.	Compliance to Work Plan, GCMP and Site Layout Plan
10.	Excavate overburden material from the proposed sand pits using dozer or bucket excavator. Unsuitable material (i.e. containing any organic content) should not be placed in the proposed stockpile and haul road. It should be diverted to an alternative location and may be suitable for use as topsoil.	Compliance to Work Plan, GCMP and Site Layout Plan
11.	Construct the stockpile and haul road using truck and dozer methods, compacting the overburden material in horizontal layers. The layers should be placed in lifts no greater than 0.5 m in thickness. Earthworks should be undertaken so that the material strengths reported in this assessment are achieved. In addition, lines, grades and cross sections should be completed within a reasonable tolerance (same or flatter) of the approved design.	Compliance to Work Plan, GCMP and Site Layout Plan. Daily inspections of the overburden stockpile and haul road should be carried out by the site supervisor or suitably qualified personnel to identify tension cracks or any other signs of instability that may arise during construction and operation of the haul road (and stockpile).
12.	Ensure adequate surface and where applicable subsurface drainage measures are incorporated to facilitate the maintenance of stability during construction and operation of the haul road. Prolonged flooding of the stockpile should not be allowed. If the	Compliance to Work Plan, GCMP and Site Layout Plan.

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
	stockpile material becomes oversaturated then in-situ treatment of material should be undertaken, which includes ripping the surface to a depth of 250 mm and recompacting the area.	Regular inspections of the swale drains at the toe of the stockpile should be undertaken to ensure that the drains are free draining.

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Slope / embankment failure impacting beyond WA boundary	ALL	Rare	Minor	LOW
2.	Localised (single bench) failure	ALL	Possible	Minor	MEDIUM
3.	Large stockpile/overburden dump slumping resulting in silt laden run-off	ALL	Rare	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Slope stability	Monitoring and inspections in accordance with the site GCMP will be conducted of extraction area faces (both operating and rehabilitated), extraction pit perimeter and large stockpile structures. All GCMP actions will be recorded as per the GCMP requirements
2.	Surface water impacts	Inspections minimum monthly and after rain events less than 5%AEP, in accordance with management plan will be conducted including overburden and topsoil stockpiles, in-pit sediment dams, all surface water management structures and potential receiving drainage lines. Specific surface water quality monitoring in accordance with the Surface Water Management Plan. Inspections and monitoring, and any required remedial actions documented in site record book.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Slope stability	Any localised face failures, excessive surface cracking or other signs of geotechnical instability will be investigated. The results of any required investigations will be documented and reported to ERR and any potentially impacted stakeholders.	Management intervention and or redesign of terminal batters
2.	Surface water	The results of any required monitoring will be reported to ERR, and to other stakeholders through the community engagement process.	Management Intervention
3.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Guidance Material for the Assessment of Geotechnical Risks in Open Pit Mines and Quarries	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/guidance-material-for-the-assessment-of-geotechnical-risks-in-open-pit-mines-and-quarries
2.	CMPA Working Safely with Geotechnical Risk in Quarries	CMPA

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan
2.	Ground Control Management Plan	Work Plan/Office
3.	Surface Water Management Plan	Work Plan/Office
4.	Site Layout Plan	Work Plan
5.	Work Plan Conditions / Planning Permit Conditions	Site Office
6.	Notification/Administrative change conditions	Work Plan
7.	GHD Geotechnical assessment and recommendations	Work Plan/Office

2.7. Erosion and Sedimentation

Scope

This risk treatment plan is for the control of surface water flows on and across the site to manage erosion and sedimentation from sediment laden water moving around the site and to ensure no sediment laden water leaves the site.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Deep Creek and associated tributaries	Within WA1488 and immediately to the north and west of the WA boundary.
2.	Crown land environment	Grantville Bushland Reserve adjacent to south west boundary of WA

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Erosion from stockpiles (product and other hard stand areas including dewatered slimes storages) resulting in silt laden run-off	O	Likely	Moderate	HIGH
2.	Erosion from roads and disturbed areas resulting in silt laden run-off	ALL	Likely	Moderate	HIGH
3.	Erosion from bunds resulting in silt laden run-off	ALL	Likely	Moderate	HIGH
4.	Erosion from ruptured dredge product pipeline resulting in silt laden run-off	ALL	Likely	Moderate	HIGH

Project Design

Uncontrolled surface water flows may cause erosion to take place from extraction areas, stockpiles, constructed embankments, natural slopes and rehabilitated landforms. Sediment deposition may affect the Work Authority area or adjoining property, including Crown land and waterways.

The site water management strategy is to divert surface water flowing across undisturbed ground around the works, and direct and collect surface water flows over disturbed ground into sediment dams, the base of the excavation or the dredge pond. A site Surface Water Management Plan (SWMP), including a monitoring program, has been developed and implemented. The SWMP will be reviewed and revised as part of standard DPQ operating practices. A copy of the SWMP is attached and provided for information only.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent erosion and sediment runoff from onsite activities
- Minimise offsite impacts of erosion and sediment run-off on the surrounding environments
- Protect the beneficial uses of water environments as defined in the SEPP (Waters)
- Minimise the risk of failure of on-site infrastructures due to erosion

Compliance standards

The compliance standards for this risk treatment plan are:

- State Environment Protection Policy (Waters) (SEPP Waters)

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No delivery of sediment to land or waterways outside the WA area
- No unmanaged areas of active soil erosion within the WA area

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	EPA guideline “Construction Techniques for Sediment Pollution Control” (or as updated) used for ground disturbing activities	All works consistent with guideline
2.	Design of all quarry faces, embankments and mounds to incorporate culverts and swale or catch drains as required.	All works in accordance with design (see Figure 3 Site Layout Plan) with drains of adequate size to handle storm events and operating as designed
3.	Location and design of stockpiles, including dewatered slimes storages.	All works in accordance with design (see Figure 3 Site Layout Plan) with drains of adequate size to handle storm events and operating as designed
4.	Divert surface water away from disturbed area with culverts, swale drains and bunds.	Minimal surface flows over disturbed areas Drains of adequate size to handle storm events
5.	Location of dredge discharge pipelines in disturbed and/or bunded areas	Compliance with work plan and design.
6.	Control structures on all internal roads and tracks.	Control structures in place and operating as designed
7.	Strategic location of any sedimentation dams.	Sumps and any dams located as per approved plan and operating as designed
8.	Vegetate and stabilise topsoil and overburden stockpiles.	Stockpiles stabilised.

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Erosion from stockpiles (product and other hard stand areas including dewatered slimes storages) resulting in silt laden run-off	O	Possible	Minor	MEDIUM
2.	Erosion from roads and disturbed areas resulting in silt laden run-off	ALL	Possible	Minor	MEDIUM
3.	Erosion from bunds resulting in silt laden run-off	ALL	Possible	Minor	MEDIUM
4.	Erosion from ruptured dredge product pipeline resulting in silt laden run-off	ALL	Possible	Minor	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Water management structures (drains, bunds, sediment traps etc) evaluated for performance	Inspection of all water management structures after each storm event, remedial works as required.
2.	Evidence of erosion, and subsequent silt laden run-off	inspections will be conducted of the site minimum monthly and after significant (<5%AEP) storm events, Inspection to include waste dumps, topsoil stockpiles, surface water management structures (including sedimentation dams) and potential receiving drainage lines. Inspections, and any required monitoring and remedial actions documented in site record book.
3.	Surface water quality	Specific surface water quality monitoring in accordance with the Surface Water Management Plan. Inspections and monitoring, and any required remedial actions documented in site record book.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Surface water management structure performance	Internally after monthly inspections	Implement required remedial actions
2.	Surface water quality	The results of any required monitoring will be reported to ERR, and to other stakeholders through the community engagement process.	Implement required remedial actions
3.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	EPA guideline "Construction Techniques for Sediment Pollution Control"	https://www.epa.vic.gov.au/~media/Publications/275.pdf
2.	Environmental Guidelines: Management of Water in Mines and Quarries	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/management-of-water-in-mines-and-quarries
3.	CMPA Guidance on Water Management Strategies for the Quarrying Industry.	CMPA web site

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan
2.	Site Layout Plan	Work Plan
3.	Work Plan Conditions / Planning Permit Conditions	Site Office
4.	Surface Water Management Plan	Work Plan/Office

2.8. Imported Materials

Scope

This risk treatment plan is for the control of risks associated with the importation of soil and clean fill materials to the work authority area.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Surface Water	Deep Creek north and west of the WA boundary
2.	Ground Water	Groundwater will be exposed within the excavation
3.	Environment	Adjacent land uses and immediate neighbours

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Impacts on the natural environment from imported materials containing weeds or other contaminants	ALL	Possible	Moderate	MEDIUM
2.	Impacts on the natural environment, including surface and groundwater, from hazardous waste being imported to site	ALL	Possible	Moderate	MEDIUM
3.	Impacts on the natural environment, including surface and groundwater, from introducing soil-borne diseases to site	ALL	Possible	Moderate	MEDIUM

Project Design

There are enough quantities of overburden on site to undertake the designed rehabilitation and closure works, including backfilling. The importation of clean fill, or other materials (such as product conditioners etc) is not currently proposed. Before any importation of soil and fill material to assist in rehabilitation or for commercial reasons an Imported Materials Management Plan (IMMP) will be developed and implemented. Any IMMP will be consistent with the relevant guidelines.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent contamination of the site by importing hazardous materials or soils carrying seeds of declared weeds or infested with soil-borne plant diseases
- Prevent unlicensed importation and storage of domestic or industrial wastes and hazardous materials

Compliance standards

The compliance standards for this risk treatment plan are:

- Environment Protection (Industrial Waste Resources) Regulations 2009
- State Environment Protection Policy (Waters) (SEPP Waters)
- Earth Resources Regulations Imported Materials Management Guidelines for Mines and Quarry Operations
- EPA Publication No. IWRG621 Industrial Waste Resource Guidelines – Soil hazard categorisation and management
- EPA Publication No. IWRG631 Industrial Waste Resource Guidelines – Soil Industrial waste hazard categorisation and management

- EPA Publication No. IWRG600.2 Industrial Waste Resource Guidelines – Waste Categorisation

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- The management of imported materials does not impact surface water or groundwater within or near the work authority area
- The management of imported materials in compliance with all relevant standards and guidelines, as per the Imported Materials Management Plan
- The management of imported materials does not result in weeds spreading off the site.
- Importation and management of imported materials fully complies with applicable legislative and regulatory requirements.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	Development of “Imported Materials Management Plan” when introducing any material to the processing stream or as fill on the site.	Imported Materials Management Plan in place before the importation of any material. Delivery Driver Checklists and Delivery Checklist site personnel maintained and reviewed
2.	Source/supplier of imported material vetted for reputability.	Imported Materials Management Plan documents all records of all importation
3.	Confirmation any imported material meets EPA / ERR requirements	Imported Materials Management Plan documents all records of all importation
4.	Visual inspection of all inbound materials prior to entry and then on stockpile at point of dumping - rejected loads immediately removed	Imported Materials Management Plan documents all records of all importation

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Impacts on the natural environment from imported materials containing weeds or other contaminants	ALL	Unlikely	Moderate	MEDIUM
2.	Impacts on the natural environment, including surface and groundwater, from hazardous waste being imported to site	ALL	Unlikely	Moderate	MEDIUM
3.	Impacts on the natural environment, including surface and groundwater, from introducing soil-borne diseases to site	ALL	Unlikely	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Source and characteristics of any imported material	The Imported Materials Management Plan requires tonnages, source/suppliers, inspections and any subsequent remedial action or rejection to be documented and recorded

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Operation and adequacy of Imported Materials Management Plan	Internally after monthly inspections	Implement required remedial actions
2.	Importation of non-conforming materials	On detection/event	Removal/disposal of non-conforming materials.
3.	Reportable Event under MRSDA	ERR / On event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Earth Resources Regulations Imported Materials Management Guidelines for Mines and Quarry Operations	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/imported-materials-management-guideline
2.	EPA Publication 448_3_Waste classifications	

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan / Site Office
2.	Imported Material Management Plan	Site office
3.	WPV conditions and Planning Permit	Site office

2.9. Unauthorised Site Access

Scope

This risk treatment plan is for the control of unauthorised access to the work authority area by members of the public and to provide for safe authorised access.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	General Public	Crown land and private residences located adjacent to WA boundary

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Unauthorised access to quarry faces could result in personal injury or damage	ALL	Possible	Major	HIGH
2.	Unauthorised access to operating equipment or plant could result in personal injury	ALL	Possible	Minor	MEDIUM

Project Design

The operation adjoins public and private land, including residential areas to the west and a Crown land reserve to the south. The site has been operating for over five years and there have been no reports of unauthorised access. Primary site access is limited to the frontage to the Bass Highway which is signed and gated. Fencing is a combination of security fencing and farm fencing, based on the adjacent land use. Fencing will be well-maintained stock proof fencing.

Objectives

The key objectives of this risk treatment plan are to:

- Provide for the safety of members of the public when accessing a work authority area
- Prevent unauthorised access to the work authority area by members of the public

Compliance standards

The compliance standards for this risk treatment plan are:

- Earth Resources Regulation's Standard Conditions

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Access to the disturbance area within the work authority area is appropriately secured to minimise chances of unauthorised entry
- Safety signage is clearly visible around the Work Authority boundary and at all access points

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	Gates and fences of suitable design and standard. Access gates to be locked when site unattended	Fencing and gates in place and secured
2.	Signage warning of operations and high faces and water bodies	Appropriate signage installed at strategic locations on the WA boundary and within the Work Authority (including internal fencing where required)
3.	Plant and equipment locked and immobilised when not in use.	Equipment locked and immobilised when not in use
4.	Visitor supervision	Visitors record book

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Unauthorised access to quarry faces could result in personal injury or damage	ALL	Rare	Major	MEDIUM
2.	Unauthorised access to operating equipment or plant could result in personal injury	ALL	Rare	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Boundary and internal site fence integrity	Annual inspection of all signage, site fencing and gates.
2.	Visitors	Visitors record book
3.	Unauthorised entries	Records kept of evidence of unauthorised entries

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Property boundary fence / site fence integrity	Annual inspection outcomes reported internally	To initiate remedial actions which will be documented in site record book.
2.	Visitor entries	internal reporting	Ensure all visitors have exited site prior to end of operating hours.
3.	Unauthorised entries (Site security breaches)	Internally reported to site management on event and regulatory authority as required	To improve site security to limit unauthorised site access.
4.	Reportable Event under MRSDA	ERR / On event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Traffic Management Guidelines	

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan / Site Office
2.	Site Layout Plan	Work Plan / Site Office
3.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.10. Fuel, Lubricants, other Hazardous Materials

Scope

This risk treatment plan is for the control of risks associated with the storage, use and handling of fuel, lubricants and other hazardous materials.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Surface waters	Deep Creek north and west of WA boundary.
2.	Groundwater	Groundwater will be exposed within the excavation
3.	Environment	Adjacent land uses and immediate neighbours

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Damage to fuel storage tanks (vandalism, accident) resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM
2.	Spills / discharges whilst refuelling resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM
3.	Spills / damage to other chemical (flocculant) stores resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM
4.	Damage to equipment fuel/oil systems (vandalism, machine collision, accident) resulting in impacts on the environment	ALL	Possible	Moderate	MEDIUM

Project Design

This risk treatment plan is for hydrocarbon, flocculant and other chemical (ie dust suppressants) storage. No hazardous chemicals will be used at the site. Flocculants are industry standard chemicals and not considered hazardous material. MSDS sheets for flocculants will be maintained in the site office. All fuels will be stored or transported in commercially produced, fully compliant tanks. The existing above ground hydrocarbon storage is fully compliant.

Objectives

The key objectives of this risk treatment plan are to:

- Minimise the risk of fuels and lubricants being released into the environment through leaks and spills

Compliance standards

The compliance standards for this risk treatment plan are:

- AS1940 – Storage and Handling of Flammable and Combustible Liquids
- EPA Liquid Storage and Handling Guidelines

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- All fuels and lubricants are stored as per AS1940 – Storage and Handling of Flammable and Combustible Liquids
- No leaks or discharges from fuels / lubricants

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	Fixed and mobile hydrocarbon (fuel & oil/grease) storage and transport in accordance with AS 1940 (The Storage and Handling of Flammable and Combustible Liquids) and the Dangerous Goods (Storage and Handling) Act	AS1940 compliant, fuel tank and oil/grease store in use and well maintained
2.	A contaminants spill kit available at all times when refuelling or conducting minor servicing and/or simple maintenance tasks on site.	Spill kits available at all refilling locations
3.	Major servicing / repairs conducted at workshop in appropriately bunded area.	Workshop fitted with appropriate interceptor traps and water management structures
4.	Any areas where refuelling / minor servicing activities are being undertaken are drained to ensure no water leaves the site without first going through sediment retention basin	Surface drainage and other water management controls in place and effective.
5.	All chemicals stored in accordance with the EPA Liquid Storage and Handling Guidelines and relevant Australian Standard	Storage in accordance with the MSDS and relevant standards

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Damage to fuel storage tanks (vandalism, accident) resulting in impacts on the environment	ALL	Unlikely	Moderate	MEDIUM
2.	Spills / discharges whilst refuelling resulting in impacts on the environment	ALL	Unlikely	Moderate	MEDIUM
3.	Spills / damage to other chemical (flocculant) stores resulting in impacts on the environment	ALL	Unlikely	Moderate	MEDIUM
4.	Damage to equipment fuel/oil systems (vandalism, machine collision, accident) resulting in impacts on the environment	ALL	Unlikely	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Integrity of storages	Monthly site inspections
2.	Pollution controls and surface drainage effective and maintained.	Monthly site inspections

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1	Performance and integrity of Fuel storages and surface drainage	Internally reported following monthly inspections	To initiate remedial actions which will be documented in site record book.
2	Reportable Event under MRSDA	ERR / On event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	Performance of fuel storages and surface drainage	Internally reported following monthly inspections
2.	Reportable Event under MRSDA	ERR / On event

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan / Site office
2.	Site Layout Plan	Work Plan / Site office
3.	WPV conditions and Planning Permit	Site office

2.11. Pests, Weeds and Diseases

Scope

This risk treatment plan is to control and manage weeds, pest animals and/or soil-borne disease at the quarry and prevent impacts on biodiversity and/or agricultural production values associated with the site and surrounding areas.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Environment	WA and surrounding area
2.	Adjoining / neighbouring properties	Immediate adjoining land users

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Allowing weeds to spread from the site to neighbouring properties	ALL	Possible	Moderate	MEDIUM
2.	Harbouring pest animals	ALL	Possible	Moderate	MEDIUM
3.	Unsanitized plant / equipment introducing weeds and/or diseases	ALL	Possible	Moderate	MEDIUM

Project Design

This RTP does not address weeds/pathogens contained in soils imported onto the site: all risks associated with imported material are discussed in the risk Imported Materials. This RTP addresses pest species and noxious weeds that may be present on the site or introduced to the site by environmental factors or unsanitized plant/equipment.

The operation, which is located on a site of past farming activities, employs a 'farm manager' to oversee and undertake all aspects of the control of pest plants and animals.

Objectives

The key objectives of this risk treatment plan are to:

- Protect biodiversity values associated with the work authority area
- Prevent site activities contributing to the proliferation of noxious weeds, plant diseases or pest animals, on or off the work authority area

Compliance standards

The compliance standards for this risk treatment plan are:

- Catchment and Land Protection Act (1994)
- Planning and Environment Act (1987)
- Public Health and Wellbeing Act (2008)
- Agricultural and Veterinary Chemicals (Control of Use) Act (1992)
- Agricultural and Veterinary Chemicals (Control of Use) Regulations (2007)

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Site operator complies with legislative requirements relating to the control and management of declared noxious weeds and pest animals
- The extractives operation does not contribute to the spread of proliferation of soil-borne plant diseases

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	Eradicate or manage any declared noxious weeds or established pest animals present on the Work Authority area	Infestations of declared noxious weeds and established pest animals are eradicated or controlled
2.	Identify pest species habitats within the work authority boundary and remove refuge areas (burrows, hollow logs) where practicable and consistent with native vegetation protection requirements	Pest animal habitats are removed or destroyed
3.	Disinfect equipment moved from areas known or suspected to contain <i>Phytophthora cinnamomi</i> . Disinfection is to be carried so that water or other materials from disinfection cannot reach a waterway or contaminate native vegetation habitats	Hygiene procedures are in place and followed in areas with known or suspected <i>Phytophthora cinnamomi</i> presence
4.	Limit vegetation clearing and surface disturbance activities to the minimum required operationally.	Compliance to Work Plan and Site Layout Plan. Compliance to Rehabilitation Plan (Monitoring & reporting schedule)
5.	Engage appropriately licenced personnel to conduct any required pesticide application to control weeds and/or pest animals.	Only licensed personnel are permitted to apply pesticide
6.	Stockpile and manage soils from areas with noxious weed infestations separately to other soils to avoid cross contamination.	Separate and clearly identified soil stockpiles Compliance to Work Plan and Site Layout Plan
7.	Vermin management mitigated by the removal of waste, rubbish, etc. by licensed contractor.	Regular waste and rubbish collection services in place

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Allowing weeds to spread from the site to neighbouring properties	ALL	Unlikely	Moderate	MEDIUM
2.	Harbouring pest animals	ALL	Unlikely	Moderate	MEDIUM
3.	Unsanitized plant / equipment introducing weeds and/or diseases	ALL	Unlikely	Moderate	MEDIUM

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Site flora and fauna for noxious weeds and pests	6 monthly inspection all areas to assess the health of the vegetation and to check for erosion, pest animal browsing damage and weed infestation

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Site flora and fauna for noxious weeds and pests	6 Monthly internal reporting for management	Management intervention if rehabilitation areas have emerging weed or pest animal issues

Relevant industry publications

None identified.

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan / Site office
2.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.12. Rubbish / non-mineral waste

Scope

This risk treatment plan is for the control of risks to the environment from rubbish or industrial waste (not rock waste or overburden) within the work authority area.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Environment	On and around the site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Uncontrolled handling of domestic and industrial waste could result in contaminating the environment	ALL	Possible	Minor	MEDIUM
2.	Potential contamination of the amenity and environment through the poor handling of redundant plant and equipment	ALL	Possible	Minor	MEDIUM

Project Design

This RTP manages the risk of domestic and industrial rubbish generated at the site and includes such items as redundant plant and equipment, discarded conveyor belting, replaced screen decks, used tyres, discarded grease cartridges, empty oil drums, oily rags, domestic rubbish from amenities, toilet waste, and office waste etc.

Objectives

The key objectives of this risk treatment plan are to:

- Prevent rubbish and industrial wastes generated by site activities from adversely affecting soil, water or other aspects of the environment
- Protect the beneficial uses of water and soil environment as defined in relevant State Environment Protection Policies (SEPPs).

Compliance standards

The compliance standards for this risk treatment plan are:

- State Environment Protection Policy (Waters) (SEPP Waters)
- State Environment Protection Policy (Waters) (SEPP Waters) – Monitoring, Evaluation and Reporting Framework
- State Environment Protection Policy (Prevention and Management of Contaminated Land) (SEPP Contaminated Land)
- Environment Protection (Scheduled Premises & Exemptions) Regulation (2007)
- Environment Protection (Industrial Waste Resource) Regulations (2009).

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Beneficial uses of soil, water and air within and near the work authority area are not detrimentally affected by the storage and/or management of rubbish or industrial wastes.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	No on-site disposal (or burning) of rubbish and/or prescribed wastes generated from site activities	No domestic or prescribed industrial wastes disposed on-site
2.	Use of appropriately licenced off-site services / facilities to recycle or dispose of site generated wastes	Waste materials removed from site by accredited / licenced contractor.
3.	Limit the volume and permitted timeframe for wastes to be stored onsite.	Waste materials not held on-site for more than 6 months.
4.	Provide covered bins for temporary on-site storage of rubbish and domestic wastes	Sealed bins provided
5.	Amenities / ablution fit for purpose	Council approved septic system in operation if required
6.	Redundant plant and equipment located appropriately	Redundant plant & equipment not visible from public roads.

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Domestic, Industrial waste contaminating the environment	ALL	Unlikely	Minor	LOW
2.	Redundant plant and equipment	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Amount of wastes stored on site.	Quantities, types and location of any prescribed wastes stored on site
2.	Approved disposal of wastes.	Register of licensed contractors

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Wastes stored on site.	12 Monthly internal reporting and safety compliance assurance.	Information in case of fire or other emergency.
2.	Approved disposal of wastes.	Regulatory authorities as required.	Compliance with SEPP or regulations.

Relevant industry publications

None reported

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Risk Management Plans	Work Plan / Site office
2.	Work Plan Conditions / Planning Permit Conditions	Site Office

2.13. Fire

Scope

This risk treatment plan is for the control bushfires burning onto the work authority area and from fires igniting on-site and escaping to surrounding areas.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Biodiversity	Adjacent properties
2.	Public safety	Site visitors and neighbouring residences
3.	Private property	Adjacent properties

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Uncontrolled fire could either enter or leave the site causing injury or damage	ALL	Possible	Critical	VERY HIGH
2.	Fixed or mobile plant / hot works igniting a fire causing injury or damage	ALL	Possible	Critical	VERY HIGH

Project Design

WA1488 consists mainly of cleared grazing land, however it is bounded on the north and south by significant vegetated areas, whilst some vegetation exists on the eastern (higher elevation) areas of the site. Potential exists for fire to enter or leave the site through these vegetated areas.

DPQ have engaged with the local CFA regarding fire safety and site preparedness, including ensuring that appropriate access to the site and suitable water connections are available. A site Fire Response and Readiness Plan (FR&RP) has been developed and will be reviewed and revised as part of standard DPQ operating practices. A copy of the FR&RP is attached and provided for information only.

Objectives

The key objectives of this risk treatment plan are to:

- Control potential sources of fire ignition and activities that could lead to fire ignition and escape on days of elevated fire danger
- Minimise environmental and human safety risks associated with fires burning onto a work authority area

Compliance standards

The compliance standards for this risk treatment plan are:

- Country Fire Authority Act and Regulations
- Planning and Environment Act (1987)

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- Any fire initiating within the work authority area is contained within the site
- Grass bushfires burning onto the work authority area result in minimal environmental harm

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	No “hot work” to be undertaken in the open air on days of Total Fire Ban without a permit from the CFA.	Documented hot work procedures implemented
2.	All vehicles well maintained and fitted with spark arrestors and fire extinguishers	Vehicles suitably equipped
3.	Flammable and combustible wastes are removed from the site as soon as practicable.	No flammable waste is stockpiled onsite
4.	Refuelling and servicing to be conducted in designated areas or in cleared areas within the extraction area.	All refuelling and vehicle servicing in accordance with procedures
5.	Liaising with CFA regarding preparedness and at times of extreme fire danger.	Record of engagement with agencies
6.	Fire Response and Readiness Plan.	Plan in place, documented and actioned

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Uncontrolled fire could either enter or leave the site causing injury or damage	ALL	Unlikely	Critical	HIGH
2.	Fixed or mobile plant / hot works igniting a fire causing injury or damage	ALL	Unlikely	Critical	HIGH

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Site fire preparedness	Annual inspections will include an assessment of the site's preparedness for fire and be recorded in the Manager's Report Book
2.	Weather/fire warnings	Liaising with CFA in times of extreme fire danger.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Site fire preparedness	Internally following annual inspections	Implement any remedial actions
2.	Ignition/fire	CFA informed of any uncontrolled fire ERR will be notified of any reportable events in accordance with the relevant regulations.	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Guidance	Currently being developed

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	Fire Response and Readiness Plan	Site office
2.	WA1488 Work Plan & Risk Treatment Plan	Site office
3.	Work Plan Conditions / Planning Permit Conditions	Site office

2.14. Soil Biological Activity

Scope

A risk treatment plan to help maintain the biological activity of undisturbed and stockpiled soils within the work authority area.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1	On-site soils	On-site

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Unsuccessful rehabilitation due to poor soil biological activity	ALL	Possible	Minor	MEDIUM

Objectives

The key objectives of this risk treatment plan are to:

- Protect existing soil structure, nutrient levels and biological activity in onsite soils
- Facilitate the rehabilitation of the quarry site by maintaining biological activity in stockpiled soils.

Compliance standards

The compliance standards for this risk treatment plan are:

- Catchment and Land Protection Act (1994).

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- The health of biologically active soil is maintained while it is stockpiled and reused in rehabilitation.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (<i>specifying how the control is being implemented –if not implicit in the control</i>)
1.	If possible do not strip soil when it is very dry or saturated.	Condition of soil maintained.
2.	Soil stockpiles height.	Soil stockpiles ≤ 2 m height.
3.	Stabilise soil and overburden stockpiles (e.g. seeded / roughened / mulched) if they will not be disturbed for an extended period.	Soil and overburden stockpiles are stabilised within 3 months if not used in progressive rehabilitation.

Residual Risk Assessment

#	Details of the Risk Event	Phase	Likelihood	Consequence	Residual Risk Rating
1.	Unsuccessful rehabilitation due to poor soil biological activity	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Maintenance/condition of site soil stockpiles.	6 Monthly inspections of topsoil stockpiles. Inspections, and any required remedial actions documented in site record book.

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1	Maintenance/condition of site soil stockpiles.	Internally after 6 monthly inspections	Implement required remedial actions

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1	Rehabilitation Plans & Other Environmental Aspects of Work Plans	http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/rehabilitation-and-environmental-aspects-of-mining-and-extractive-work-plans

Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 WPV & Risk Management Plan	Site Office
2.	Site Layout Plan	Site Office
3.	WPV conditions and Planning permit	Site Office

2.15. Vehicle Sediment Transport

Scope

This risk treatment plan is to control risks associated with the carriage and deposition of dust, silt and clay (mud) by vehicles exiting the Work Authority.

Key sensitive receptors

The key sensitive receptors associated with this hazard include:

#	Details of the Sensitive Receptor	Location and proximity to site
1.	Bass Highway	Adjacent to the WA and the point of access and egress from the site.

Risk Events

#	Details of the Risk Event	Phase	Likelihood	Consequence	Inherent Risk Rating
1.	Dust, stone, gravel, mud impacting on public roads	ALL	Possible	Moderate	MEDIUM

Project Design

Some internal sealed roads and a wheel wash are in place to address the potential for the deposition of extraneous material onto public roadways.

Objectives

The key objectives of this risk treatment plan are to:

- Avoid carriage of dust, silt and clay (mud) by vehicles leaving the work authority area
- Prevent road safety issues from hazards associated with the deposition of dust, silt and clay (mud) onto external roads by traffic from the work authority area.

Compliance standards

The compliance standards for this risk treatment plan are:

- Planning and Environment Act 1979
- EPA Protocol for Environmental Management – Mining and Extractive Industries
- Planning Permit Conditions

Acceptance criteria

The acceptance criteria for this risk treatment plan are:

- No complaints from local road users regarding road conditions
- Minimal dust, silt and clay (mud) carried by vehicles beyond the boundary of the work authority area.

Controls to address hazard

The controls for this risk treatment plan are:

#	Details of controls being used	Performance measures (specifying how the control is being implemented –if not implicit in the control)
1.	Internal sealed roads	Sales vehicle use sealed road access and egress
2.	Internal traffic management (speed, non-go areas etc)	Driver instruction and training
3	Wheel wash	All departing sales trucks use wheel wash
4	Street sweeper	The use of a street sweeper as required

Residual Risk Assessment

#	Details of the Risk Event	Phase	Unlikely	Consequence	Residual Risk Rating
1.	Dust, stone, gravel, mud impacting on public roads	ALL	Unlikely	Minor	LOW

Monitoring

#	Aspect to be monitored	Details of monitoring
1.	Dust, silt and mud deposition on surrounding roads	Daily observation
2.	Community complaints / concerns re spillage or dust	Complaints management/Community Engagement Plan

Reporting

#	Aspect being reported	Who will the information be reported to and at what frequency?	How will it be used?
1.	Dust, silt and mud deposition on surrounding roads	Internal reports as required	To assess improvement or maintenance required
2.	Reportable Event under MRSDA	ERR / On Event	

Relevant industry publications

#	Document	Source (e.g. URL, appendix number)
1.	CMPA Guidance	Currently being developed

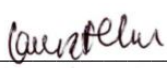
Operator's reference documents

#	Document	Location (e.g. work plan appendix number)
1.	WA1488 Work Plan & Risk Treatment Plan	Site office
2.	Work Plan Conditions / Planning Permit Conditions	Site office

Tenement Number: WA1488

Plan Number: PLN-001354

Work Plan Variation Statutorily Endorsed

Signed: 

Delegate of the Department Head

Date: 29/05/2020



Dandy Premix Quarries - Grantville Commercial Sands

COMMUNITY ENGAGEMENT PLAN

WA1488

PLN-001354

28 February 2020



Version Control and Approval

Version No.	Prepared	Reviewed	Approved	Date	Description	Next Revision
0	Garry Cranny (Manager Sustainability)	Mark Van Den Heuvel (GCS Quarry Manager)	Mark Cranny (Managing Director)	24/05/2012	Initial Plan	20/02/2020
1	Garry Cranny (Manager Sustainability)	Colin Thornton (BCA Consulting)	Mark Cranny (Managing Director)	28/02/2020	Updated based on stakeholder feedback, Grantville ERC experience and DJPR/ERR revised CEP requirements for WPV application	March 2021
2	To be determined	To be determined	Mark Cranny (Managing Director)	03/03/2021	Annual Review	March 2022

Table of Contents

1.	CEO or Company Representative Statement	4
2.	Introduction	5
3.	Site description	6
4.	Background.....	8
5.	Legislative framework	9
6.	Aims and Objectives	10
7.	Stakeholder and issues analysis	12
8.	Communication	17
9.	Stakeholder engagement plan.....	19
10.	Complaints management process	20
11.	Evaluation	21
12.	Contact us.....	22

Figures

- Regional Plan
- Locality Plan
- Site Layout Plan
- WA1488 – Community Engagement Plan: Complaints & Feedback Register and Engagement Activities Record

1. CEO or Company Representative Statement

Dandy Premix Quarries Pty Ltd ('Dandy Premix') is committed to undertaking and continuously improving its various forms of community engagement to:

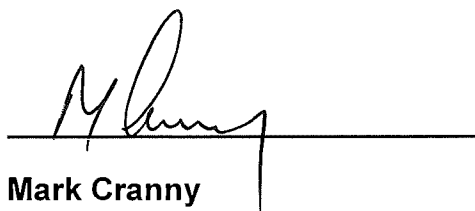
- Inform, consult and involve the community on matters of public interest;
- Encourage informed discussion and input into our decision making; and
- Facilitate transparent decision making to build trust and respect.

Dandy Premix will work with the local community and stakeholders to identify the most appropriate, timely and effective engagement methods to continually improve community outcomes. A continuation of active participation in the Grantville ERC remains a cornerstone of the Dandy Premix community engagement plan.

When engaging with the community and stakeholders, Dandy Premix commits to being open and meaningful in our process, aspiring to:

- Identify any community likely to be affected by the Dandy Premix quarry operations and ensure information is provided to the community;
- Ensure the purpose of our engagement is clear, relevant and well suited to the purpose and target audience of the engagement;
- Undertake engagement in a mutually respectful manner that values local knowledge, expertise and the varying views and needs of the community;
- Analyse community feedback to understand and consider community concerns and/or expectations;
- Register, document and respond to complaints and other community communications in relation to our activities; and
- Share the outcomes of specific engagement processes, thereby 'closing the loop' with the local community to demonstrate how the engagement was used to inform a decision or outcome.

Dandy Premix considers planned and respectful community engagement as a valuable means of building community trust and acceptance in Grantville and the broader Bass Coast communities which have the potential to be impacted by our WA1488 Grantville Commercial Sands operations.



Mark Cranny
Managing Director
Dandy Premix Quarries Pty Ltd

Date: 20 February 2020

2. Introduction

The proposal seeks further development of current extractive operations, without any expansion of the existing approved WA1488 site. It also proposes the introduction of sand washing, along with dewatering of the resultant clay slimes to produce recycled water and a filter cake material entirely suited to use in site rehabilitation works.

It is proposed to extend both the footprint and depth of the existing fine medium sand extraction pit (the 'FMSEP') to include sand extraction to an approximate depth of 15 metres below the upper limit (surface) of the Groundwater aquifer underlying the western portion of the WA1488 site.

The Work Plan variation also proposes to establish a coarse sand extraction pit (the 'CSEP') in the upper elevated eastern portion of the WA1488 site. Development of the CSEP will involve the removal and offsetting of Native Vegetation which is to be managed through the existing s173 agreement on the adjoining northern land owned by Dandy Premix.

Wet extraction in the FMSEP will be by Cutter Suction Dredge delivering a 'slurry' comprised of 25% w/w of below water sand and 75% w/w of water to the Sand Wash Plant. The below water sand will be blended with coarse sand from the CSEP and above water, fine-medium sands from the developed FMSEP in the Sand Wash Plant process, to make concrete sands and to maintain a resource balance across the WA1488 site.

Sales volumes from the WA1488 site are anticipated to increase from the current 450,000 tonne per annum to upwards of 800,000 tonne per annum in the next 5-10 years, with the possibility that future Melbourne Supply Area (MSA) demand, may result in further increases of these forecast sales volumes in 10-15 plus years.

The Community Engagement Plan forming part of this WA1488 Work Plan Variation application endeavours to:

- Provide information to the local community about the proposal;
- Identify the community's attitudes and expectations in relation to the proposed further development;
- Consider the community's feedback, including any local amenity concerns and ascertain how any identified concerns can best be addressed; and
- To build community knowledge about and trust in the Dandy Premix, WA1488 sand quarry operations, especially in respect of any potential for off-site amenity impacts.

3. Site description

The WA1488 site is on land identified as 1381-1395 Bass Highway, Grantville, being located on the eastern side of the Category 1 Bass Highway, approximately 1.2 kilometres north from the township of Grantville. The site's Bass Highway frontage provides direct access to the site via a purpose built entry with a sealed Access Road, 900 metres in length to a Weighbridge Office and Amenities building, Workshop and the dry screening and blending plant. The Bass Highway site frontage is 325 metres from Westernport Bay to its west.

The site is comprised of 156 hectares of land that rises from approximately 15m AHD at its Bass Highway frontage, to 120m AHD at its highest eastern elevation which also denotes the back of the regional Heath Hill Fault. The Heath Hill Fault runs at an approximate 30° degree north-east to south-west orientation through the upper level of the site and neighbouring properties. The upper eastern and south-eastern sections of the site, generally above the Heath Hill Fault zone and to its immediate west, including the proposed CSEP, are covered by native vegetation (a mix of Lowland Forest and Heathy Woodland).

The more predominate lower elevation western area of the site, containing the current FMSEP, continues to be covered in grass pasture, previously used for the grazing of stock. This larger portion of the site is above a groundwater aquifer with a surface water level (SWL) of 6.2m AHD across its majority, rising to 10.8m AHD at investigation bore BH-9, installed at a site elevation of 88m AHD in the eastern part of the site.

The site has three residences located approximately 160 metres east of the Bass Highway frontage. Two of the three residences continue to be home on an indefinite/permanent arrangement with the previous land owners. The third house is currently occupied by a Dandy Premix employee, but is planned for eventual demolition ahead of sand extraction in accordance with the currently approved Work Plan Extraction Area. Unless otherwise required, extraction in this western extremity is not proposed for some years. Each of the three homes provide a level of separation and visual protection of quarry operations from traffic on and residences to the west of Bass Highway.

Adjoining the site to the immediate north is a 70 hectare property owned by Dandy Premix. This land contains the majority of Deep Creek (MW3839) surrounded by significant tract of Native Vegetation (NV) that forms the NV Offsets for NV Removal on WA1488 for the proposed CSEP. Crown Land, managed by Parks Victoria and named The Gurdies Nature Conservation Reserve, borders this Dandy Premix land to its immediate north.

The southern boundary of the WA1488 site is adjoined by a mix of land type, use and ownership. The western portion for 590 metres is bordered by Crown Land, managed by Parks Victoria as the Grantville Bushland Reserve; for approximately 380 metres further eastward, the southern boundary is represented by common frontage to Colbert Creek with the Boral/Holcim Joint Venture, the 'GSG' sand quarry (WA470).

The remaining 1000 metres of the eastward section of the southern boundary is bordered by private freehold land, with a mix of NV and grass pasture land. This freehold land ownership, changed ownership from William and Roy Blackmore, also previous owners of the WA1488 land, to Russell and Rebecca Bradley in 2017. This parcel of freehold also

extends along the WA1488 site's 760 metre eastern boundary alignment, effectively 'wrapping' itself around the southeast and eastern boundaries of WA1488.

All the above described land is variously undulating with NV on higher elevations and to most boundaries, providing substantial visual screening and beneficial noise and dust mitigation from the WA1488 sand operations, dependent upon the direction of the prevailing wind.

The John and Sue Tomlins residences and surrounding property at 1421 and 1421B Bass Highway, are located to the immediate south-west of the approved WA1488 site and are therefore of particular significance. The Tomlins property shares a 210 metre northern boundary with the closest of the three WA1488 site dwellings at 1395 Bass Highway and of greater significance, a 50 metre rear property boundary to the east, adjoining that part of the WA1488 site containing sand extraction (FMSEP) and processing operations. A 200 metre buffer exists between the Tomlins eastern property boundary and the nearest south-west extent of the currently approved extraction boundary of the FMSEP.

As the nearest sensitive (residential) receptor, the Tomlins residence has had a dust deposition gauge installed and monitoring air quality at the rear boundary of their property since 2012. Laboratory results are regularly shared with the Tomlins as part of ongoing engagement, as part of the very healthy and respectful relationship Dandy Premix enjoys with our nearest neighbour.

The WA1488 site has Bass Highway frontage to its west with numerous Bass Highway residences opposite on the western side of the highway. A waterline residential community of about 150 dwellings is also located west of the Bass Highway, slightly north of the WA1488 site. This Grantville community group, is predominately accessed from Bass Highway via Deep Creek Street, then Smith and Stewart Streets. Approximately 20 of these dwellings abut Bass Highway to the rear of their properties and incur significant background traffic noise as a consequence. The background road traffic noise is exacerbated by the Bass Highway speed limit of 100kph past this residential community and the poor acoustic quality of the installed noise barriers.

There are no schools, hospitals, or childcare centres located within proximity of the WA1488 site, or for that matter in Grantville, 1.2 kilometres to the south.

The following maps and/or plans are attached to this CEP:

Figure 1 – Regional Map;

Figure 2 – Locality Plan; and

Figure 3 – Site Development Plan.

4. Background

Dandy Premix Quarries Pty Ltd (T/a Grantville Commercial Sands) has been an active Extractive Industries participant in the Grantville Environmental Review Committee (ERC) since 2012. The Grantville ERC meets on a quarterly to four monthly basis, so Dandy Premix has participated in a minimum of 22 ERC meetings.

Community Engagement as part of the Bass Coast Shire Council Planning Permit No.120388 Application process commenced in June 2011 and has been ongoing since.

Over 30 separate Community Engagements were undertaken in the lead-up to the 20 March 2013 Council decision on Planning Permit No.120388. These included:

- 13 Hours of one-to-one, or one-to-several face-to face engagements, across three sessions, including a Saturday, conducted in the Grantville Transaction Centre;
- 'Town Hall' style meeting at request of community, Grantville Community Hall, conducted early March 2013;
- Presentation to Councillors as preliminary to 20 March 2013 Bass Coast Council Meeting. This included receiving and responding to community questions from those in the Public Gallery

Prior to lodgement of the WA1488 Work Plan Variation (WPV) of 10 January 2020, the following initial engagement activities have been conducted:

- Project briefing to Bass Coast Shire Council (BCSC), Strategy and Growth Officers, May 2019;
- Initial Site Meeting, 23 August 2019 – detailed project briefing to DJPR/ERR officers (4 off), BCSC Officers (3 off), 2 off Community Representatives from Grantville ERC, Referral Agencies, including Southern Rural Water (SRW), DELWP Gippsland Region, CFA District 8, Melbourne Water, Department of Transport (DoT), Regional Roads Victoria (ex VicRoads), Eastern Branch, Traralgon. The EPA and Department of Premier and Cabinet, Aboriginal Affairs were also invited, but declined to attend;
- Site-based Detailed Project Briefing to BCSC Councillors, in company of Council Strategy and Growth Officers, 9 October 2019;
- Initial high-level Project Overview provided to 1 November, 2019 meeting of the Grantville ERC; and
- Face-to-face consultations (visitations) with Detailed Project Overview, were provided to the following local residents on 16 January 2020, as part of SRW "Neighbour Notification Acknowledgement" process for Dandy Premix application for the Temporary Transfer of a 80.5ML per annum, Groundwater Licence from within the Koo Wee Rup Water Supply Protection Area (KWRWSPA) –
 - John & Sue Tomlins, 1421B Bass Highway, Grantville 3984
 - Scott & Janette Longden, 1390 Bass Highway, Grantville, 3984
 - Garry & Patricia Roberts, 1388 Bass Highway, Grantville 3984
 - Robbie Viglietti, Sand Supplies Pty Ltd, 1113 Bass Highway, The Gurdies 3984;
 - Michael Cole, GSG (Holcim/Boral JV), Grantville-Glen Alvie Road, Grantville 3984.

5. Legislative framework

This community engagement plan has been prepared by Dandy Premix in order to meet the legislative requirements set out in the Mineral Resources (Sustainable Development) Act 1990 and associated regulations.

Legislative framework - extractives

Mineral Resources (Sustainable Development) Act 1990

Section 77H (2) – Community Engagement Plan for a work plan variation

Section 77K – Extractives industry duty to consult

Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2010

Regulation 7(d) – the information that relates to, and is applicable to, the proposed changes to the Community Engagement Plan that is set out in item 6.1 in Part 1 of Schedule 1

Schedule 1, Part 1, item 6.1 – A Community Engagement Plan that –

- a) identifies any community likely to be affected by the quarry operations; and
- b) in relation to quarry operations, includes proposals for -
 - (i) Identifying community attitudes and expectations; and
 - (ii) Providing information to the community; and
 - (iii) Receiving feedback from the community; and
 - (iv) Analysing community feedback and considering community concerns or expectations; and
- c) includes a proposal for registering, documenting and responding to complaints and other communications from members of the community in relation to the quarry operations

6. Aims and Objectives

Aims

The aim of this Community Engagement Plan (CEP) is to assist Dandy Premix to be known within the Grantville community and the wider Bass Coast, Cardinia and Casey municipalities as a reliable, trustworthy corporate citizen and member of Victoria's Extractive Industries.

This CEP aims to inform the community, to receive feedback on community values and expectations, provide public confidence and build mutual respect between the community and Dandy Premix as the licensed operator of a sand quarry with a prominent Bass Highway Grantville location and therefore, profile within the Shire of Bass Coast.

Objectives

Dandy Premix will seek to achieve its CEP objectives through, but not limited to, the following steps:

- Active participation in the Grantville Environmental Review Committee (ERC) which comprises in part, of seven (7) Community Representatives, ERR as the State level industry regulator and representatives of the Bass Coast Shire Council, including a Western Port Ward elected Councillor;
- Establish a Community Reference Group (CRG) of a minimum of three (3) representatives from the local community that are well-placed to provide input to Dandy Premix and feedback to the local community on operating amenity issues of significance, e.g. noise, dust, water, native vegetation and the conduct of Dandy Premix on-road quarry trucks;
- Being open to 24/7 on-line community contact for the lodgment of complaints and/or feedback to Dandy Premix via the Dandy Premix Website, Contact page pro-forma – www.dandypremix.com. The Contact page of the Website incorporates the following email address to facilitate email communication, which is received simultaneously by two (2) Dandy Premix personnel to avoid, or reduce the opportunity for the email to be overlooked for any period – info@dandypremix.com
- Responding quickly to all complainants and/or providers of feedback; all communications will receive an interim acknowledgement within two business days and a full response following evaluation and resultant action(s), no later than 10 business days from registration of the communication. All complaints and other community communications will be electronically registered for management and review action on the Dandy Premix IT System for expediency and security;
- Analyse community complaints and feedback to inform Dandy Premix decision making and to provide feedback on how community input influenced a decision(s); and
- Support local community interest and sporting groups, e.g. Grantville Cemetery Trust, Pioneer Bay Progress Association, Serenade at Sunset, Kernot-Grantville CFA, Kilcunda-Bass Football Netball Club, etc., local businesses, e.g. The

Grantville General, the Bass Coast Landcare Network and Bass Coast Shire Council.

7. Stakeholder and issues analysis

Bass Coast is acknowledged as the one of the fastest growing regional shires in Victoria with population forecast to increase by a further 33% to an estimated 46,429 by 2036. A recent socio-demographic profile of the shire highlights a significantly higher than State average mature adult population and a lower than State average rates of employment coupled with lower municipal household (gross) incomes.

This statistical snapshot supports the importance of local employment generation in the Bass Coast Shire and the Bass Coast Planning Scheme provides recognition of the employment opportunities and resources in The Gurdies – Grantville area presents to the local population. Dandy Premix employs 10 EFT staff at WA1488 Grantville and all reside in Bass Coast, or the neighbouring shires of Cardinia, South Gippsland and Baw Baw.

Without question, the Bass Coast Shire community values the natural environment in which it lives (*'Bass Coast Shire Natural Environment Strategy, 2016 to 2026'*).

The local Grantville, Pioneer Bay, Corinella, Coronet Bay and Bass communities have high expectations of their participation and involvement in local decisions that affect the natural environment, its relationship to their quality of life, as well as the rural residential amenity of Grantville and more broadly, the Bass Coast coastal environment.

Dandy Premix believes significant benefits can be achieved from increased types and levels of community engagement, especially through consultation, involvement and when appropriate, collaboration (*'IAP2 Spectrum of Public Participation'*). The diversity of input these participations provide is crucial to building trust and respect. These processes should also assist decision making that is sound, evidence based and addresses local expectations.

Table 1. Community Identification and Level of Impact

Identified Community and Type	Impact Level 1 = High 2 = Medium 3 = Low	Name	Personal Contact Details
Community of Place:			
Immediately adjacent land owners	2	John & Sue Tomlins	1421B Bass Highway, Grantville, 3984 Tel. 0418 359 532
	1	Russell & Rebecca Bradley	10 Smith Road, The Gurdies, 3984
	1	GSG Quarry	Mick Cole, Quarry Manager, Boral/Holcim JV Quarry, Grantville- Glen Alvie Road, Grantville, 3984 Tel. 5678 8477, Email: michael.cole@lafargeholcim.com
Near Neighbours	1	Russell & Glenda Bent	1353 Bass Highway, Grantville, 3984
	1	Maria Marchio	1423 Bass Highway, Grantville, 3984
	1	Keith & Margaret Balcombe	165 Dunbabbins Road, The Gurdies, 3984

Identified Community and Type	Impact Level 1 = High 2 = Medium 3 = Low	Name	Personal Contact Details
Waterline Community – West of Bass Highway	2	David & Carolyn Poynter	9 Deep Creek Street, Grantville, 3984 as Grantville ERC representative for this community, Tel. 0419 561 305 Email: dp@poynter.com.au
	2	Garry & Patricia Roberts	1388 Bass Highway, Grantville, 3984 Tel. 5995 4669, Mob. 0409 854 992
	2	Scott & Janette Longden	1390 Bass Highway, Grantville, 3984 Mob. 0419 367 705
	2	Robbie Viglietti (Sand Supplies, WA 210)	1113 Bass Highway, The Gurdies, 3984, Tel. 5997 6410, Email: robbie@sabbiadevelopments.com.au
	2	Mick Cole (GSG, WA 470)	Grantville-Glen Alvie Road, Grantville, 3984, Tel. 0429 790 395, Email: Michael.cole@lafargeholcim.com
Community of Practice:			
Local Businesses	2	The Grantville General	Tracey, Manager, Shop 2, 1509 Bass Highway, Grantville, 3984 Tel: 9070 8109
	1	Capeview Mitre 10	1536 Bass Highway, Grantville, 3984, Tel. 5678 8213
	1	Grantville Newsagency & Post Office	Shop 2, 1503 Bass Highway, Grantville, 3984, Tel. 5678 8808
	1	Van Steensel Timbers Pty Ltd	Corner Bass Highway & Glen Forbes Road, Grantville, 3984, Tel. 5678 8552, Email: grantville@vansteenseltimbers.com.au
Schools	1	Bass Valley Primary School	70 Corinella Road, Corinella, 3984, Tel. 5678 0208, Email: bass.valleyyps@edumail.vic.gov.au
	1	San Remo Primary School	Karen Bowker, Principal, 22 Bergin Grove, San Remo, 3925, Tel. 5678 5354, Email: san.remops@edumail.vic.gov.au
	1	Newhaven College	Gea Lovell, Principal, 1770 Phillip Island Road, Phillip Island, 3933, Tel. 5956 7505, Email: info@newhavencol.vic.gov.au
Community of Standing:			
Council	1	Donna Taylor	Manager Strategy & Growth, Bass Coast Shire Council, Tel. 5671 2128,

Identified Community and Type	Impact Level 1 = High 2 = Medium 3 = Low	Name	Personal Contact Details
Grantville ERC	2	Kevin Brown (interim)	Email: donna.taylor@basscost.vic.gov.au New Chairperson & Secretariat to be appointed – Interim contact, Kevin Brown, Community Representative, Tel. 0418 990 214, Email: kevbrown@wideband.net.au
Bunurong Land Council Aboriginal Corporation (RAP)	1	Rob Ogden	Cultural Heritage Manager, 16/395 Nepean Highway, Frankston, VIC 3199, Tel. 9770 1273, Email: heritagemanager@bunuronglc.org.au
Grantville Cemetery Trust	1	Allan George	Secretary, Grantville Cemetery Trust, Tel. 5678 8223, Email: grantvillecemetery@gmail.com
Grantville & District Business and Tourism	1	Mrs Neroli Heffer	c/- Grantville Post Office, Shop 2, 1503 Bass Highway, Grantville, 3984, Tel. 5678 8548
Westernport Seagrass Partnership	1	Doug Newton	Secretary, PO Box 2590, Mount Waverley, 3149, Tel: 0437 982 029
Grantville & District Foreshore Reserve Committee of Management	1	Ms Dianne Goeman	Primary Contact - Tel. 5678 8059, Mob. 0418 581 816, Email: diannegoeman@yahoo.com

Table 2

Stakeholder Issues Analysis

Stakeholder	Issues or concerns	Estimated level of impact on the stakeholder	Controls
Immediately adjacent land owners, Near Neighbours and the Waterline Community west of Bass Highway	Noise (Traffic Noise on Bass Highway, especially heavy trucks), Dust and Groundwater	Medium/High	Noise enclosure (acoustic attenuation) walls are installed around western end Plant Hardstand Area and to part of Bass Highway site frontage. Water suppression via water carts(s). Reduced speed limits on both sealed Access Road and designated Haul Roads. Grassed and vegetated earthen bund will be established in timing consultation to reduce both noise and dust to nearest sensitive

Stakeholder	Issues or concerns	Estimated level of impact on the stakeholder	Controls
			<p>receptor – John & Sue Tomlins residence. Refer Figure 3 Development Plan and Bass Coast Landcare Network, <i>"Landscape and Vegetation Plan, Spring 2013"</i>, endorsed as part of BCSC Planning Permit No.120388.</p> <p>Dust monitored in three site boundary locations, with six years of data confirming dust levels to be consistently well below EPA guideline limits.</p> <p>Noise logging for emission assessment was undertaken in 2019, confirming Dandy Premix trucks exiting the WA1488 site southbound, then passing 1421 Bass Highway northbound on return journey to Melbourne, were indistinguishable from the ambient noise environment.</p> <p>Eight (8) licensed Groundwater Investigation Bores are installed on the WA1488 site. These are monitored quarterly for Groundwater standing water levels (SWL) and samples are taken for independent NATA accredited laboratory analysis. These results then assessed by our hydrogeological and water quality consultants. The results are informed to the Grantville ERC, the WA1488 CRG and are available on request to community members for assurance about the continuing integrity of the Groundwater aquifer.</p>
Local Businesses	Road Safety (increased heavy truck traffic resulting from additional volumes of product exiting the WA1488 site to Melbourne)	Medium/High	<p>Planning Permit No.120388 requires all traffic leaving the WA1488 site at 1381 Bass Highway, Grantville to exit left (southbound) only. Dandy Premix heavy trucks must proceed three kilometres past Grantville and use the 'Rifle Range' turning-bowl' to commence their northbound journey back through Grantville, then an additional 1.2 kilometres north before reaching the entry/exit to WA1488. Only after trucks have completed this 9.5km (15-20 minute) turn-around, do they commence their 'positive northbound' journey to Melbourne.</p> <p>As part of the proposed amendment application to BCSC Planning Permit 120388, Council are required to refer the</p>

Stakeholder	Issues or concerns	Estimated level of impact on the stakeholder	Controls
			<p>application to the DoT to consider access from the WA1488 site to the Category 1, Bass Highway. Amongst other measure, the DoT will consider the control measure of traffic signals at 1381 Bass Highway to facilitate right turn exit from the WA1488 site to Melbourne. This would remove the necessity for Dandy Premix trucks to drive twice through Grantville on each return journey to Melbourne.</p> <p>Dandy Premix regularly reinforces the criticality of driver (traffic safety) awareness, courtesy and performance when travelling on the Bass and South Gippsland Highways. Driver conduct when travelling through and in close proximity of Grantville on the Bass Highway is a major community focus for the Dandy Premix heavy vehicle fleet.</p>
Council	Road Safety (increased heavy truck traffic resulting from additional volumes of product exiting the WA1488 site to Melbourne)	Medium/High	<p>Bass Highway is a Category 1 State Road controlled by DoT, Regional Roads Victoria. Council must refer the required Planning Permit No.120388 amendment application to DoT for traffic management advice and any amended permit conditions. DoT will mandate road safety controls, which could be, or include, e.g. the installation of traffic signals, better signage, reduced speed limits and better noise attenuation barriers on the impacted section of Bass Highway (Deep Creek Street north to Bonney Road). DoT will also consider local community representations regarding the installation of traffic signals at 1381 Bass Highway and the impact of Dandy Premix trucks travelling through Grantville twice in order to return to the Melbourne Metropolitan area with deliveries.</p> <p>Any complaints of poor Dandy Premix driver conduct are recorded and investigated. Driver counselling, training and if required, proportionate remedial action(s) taken. Feedback/consultation with the originator, or complainant is undertaken to close-out the issue.</p>

8. Communication

The Grantville Environmental Review Committee (ERC) comprised in part of seven (7) Community Representatives will continue to be the key form of scheduled quarterly community engagement. This well established, robust forum is a mainstay for receiving and disseminating information from a range of community types, i.e. local, practice and standing.

Dandy Premix will also engage with the nearest local community which has the potential for the most direct and frequent impact of WA1488 operations through a Community Reference Group made-up of near neighbours.

The Dandy Premix Website is an important electronic communication platform for not only receiving community feedback, but equally for disseminating information to a range of communities, interest groups and various stakeholders at local, state and national levels. The Dandy Premix Website was created and is maintained with these communications functions as its primary role; it is not a 'sales-generating', or 'sales-based' website.

Courtesy of seven (7) years of site activity and local exposure, local community members, interest and sporting groups, in addition to stakeholders such as the Bass Coast Shire Council, including elected Councillors, are aware that Dandy Premix is readily available and willing to meet face-to-face (f2f) to discuss any issues of community, or local government concern.

Dandy Premix remains open, subject to interest from the community, for an annual WA1488 'Open Half-Day' to demonstrate and inform the public about operations, development and rehabilitation plans and potential future (end-of-quarry life) site regeneration concepts. School visits will also continue to be explored for an educational (next generation) level of interest in local geology, sand quarrying operations and more broadly, Extractives Industries in Victoria.

Dandy Premix has and will continue to be available to respond to requests from Bass Coast Council and/or Earth Resources Regulation to publicly present on Extractive Industries issues, the road transport of bulk quarry materials and matters of environmental importance (e.g. Native Vegetation removal, site rehabilitation/regeneration and Groundwater protection), especially in terms of their application to future use and redevelopment of the WA1488 site.

Dandy Premix plans to inform and consult (receive community feedback in any and all forms – Personal contact, Website initiated, email, phone-calls – in relation to our site activities authorised under Work Authority No.1488 (WA1488) and Bass Coast Planning Permit No.120388.

The WA1488 Community Reference Group (CRG) is a key mechanism for the exchange of information with the local community, in particular, our adjacent and nearest neighbours. These are conducted on a quarterly basis at the site.

Articles pertaining to updates at the WA1488 site and the Bass Coast, South Gippsland and Cardinia Extractive Industries operations will be published on the Dandy Premix website as they become available.

Dandy Premix plans to establish a senior management, CEP Review Group, comprised of the Managing Director, the WA1488 Quarry Manager and the Community Engagement

Manager/Manager Sustainability, with external input from a member of the WA1488 CRG, to conduct six monthly reviews of all feedback received from the community.

Currently, complaints and feedback are received by the Community Engagement Manager (CEM) are recorded on a WA1488 CEP Spreadsheet for follow-through/resolution. They are also recorded in the Dandy Premix ISO 9001:2015 Quality Management System, '*Corrective Action Report*' (CAR System) for response action. The WA1488 Grantville site is one of six (6), extending to seven (7) sites in May 2020, under the scope of the Dandy Premix ISO 9001:2015 accreditation.

Reviews will analyse concerns and expectations, as well as positive feedback received from the community. The reviews will determine how alternative, or improved methods of work, environmental performance, or other offsite amenity impact improvements can be implemented to satisfactorily address the community's current and evolving aspirations and values, as conveyed through their various inputs.

The CEP Review Group will increase our community engagement focus and strengthen our existing arrangements for the analysis of feedback and consideration about the introduction of new and/or improved operating activities.

Dandy Premix will inform the community through the Grantville ERC, the WA1488 CRG and use of the free and widely read, local monthly community magazine, 'The Waterline News'. The Gippsland Sentinel Times will also be used for broader Bass Coast circulation of important public notices, events, and/or significant changes to operations at the WA1488 site.

Where appropriate, we will continue to use letterbox drops and individual f2f visitations to inform, consult and engage with local residents about matters of importance to their amenity, or their concerns, or expectations. This form of engagement was most recently undertaken in January 2020 in relation to notifying adjacent landowners of the Dandy Premix application to Southern Rural Water for the Temporary Transfer of an 80.5ML per annum Groundwater (Take and Use) Licence.

We will respond to all individual, or interest group complaints, feedback and other communications. Our responses could be in the form of face-to-face (f2f) meetings, by email, or by phone, as preferred by the originator of the feedback, or complainant.

9. Stakeholder engagement plan

Table 2. Stakeholder Engagement Plan

Stakeholder	Issue or concern	Level of engagement (IAP2)	Controls to be communicated to impacted stakeholders	Method of engagement	Timing (weekly, monthly, as required)
Immediately impacted residents	Noise – Fixed & Mobile Plant Operations	Consult & Involve	Noise attenuation panels have been installed to front of site and around western edge of Plant Hardstand and Sales Loader Area	Face to face meeting Phone calls	As required, Permit No.120388 Condition
		Consult, Involve & Collaborate	All Mobile plant are fitted with 'white noise' reversing beepers	Face to face & Grantville ERC	As required, Permit No.120388 Condition
	Noise - Road Trucks	Consult & Involve	Restricted loading and despatch working hours are between 6am-6pm M-F and 6am-1.00pm Sat	Face to face & Grantville ERC	Before and After 4 month trial period, May – Aug 2019
	Traffic Management (Road Safety)	Inform, Consult & Empower	All trucks must turn left onto Bass Highway when exiting site, no Traffic Signals installed	Face to face & VCAT Mediation, July 2013	As required
	Dust	Consult & Involve	Water carts are used to minimise dust measured by three dust deposition gauges on property boundary	Face to Face, Phone calls	Quarterly
	Native Vegetation	Inform, Consult & Involve	S173 Agreement with BCSC & DELWP, Conservation & Revegetation Sites	Face to face	As required & prior to any NV Removal
	Groundwater	Empower	Excavation depth restriction of 10m AHD	Face to face & VCAT Mediation, July 2013	As required

10. Complaints management process

Complaints and feedback are received by the Community Engagement Manager (CEM) and are recorded on a “WA1488 CEP Complaints & Feedback Register and Engagement Activities Record”, an Excel Spreadsheet for follow-through and resolution, which includes close-out by return communication with the complainant and/or community feedback individual/interest group.

An example of the WA1488 CEP Register, is included as Figure 4. The register is maintained by the CEM with additional input from the WA1488 Quarry Manager, who occasionally receives in-person, or direct phone call community feedback.

Complaints and feedback are also recorded in the Dandy Premix ISO 9001:2015 Quality Management System, ‘*Corrective Action Report*’ (CAR System) for response action. The WA1488 Grantville site is one of six (6), extending to seven (7) sites in May 2020, under the scope of the Dandy Premix ISO 9001:2015 accreditation.

The “CEP Review Group” (refer Page 18) comprised of senior management personnel, including the Dandy Premix Managing Director and the Quarry Manager, will conduct reviews to analyse themes, concerns and to understand community expectations, as well as positive feedback received from the community.

This will ensure that Dandy Premix senior management are constantly appraised and aware of community issues, changing values and expectations in relation to the operations of WA1488 and its impact on their amenity and safety.

The reviews will determine how alternative, or improved methods of work, environmental performance, or other offsite amenity impact improvements can be implemented to satisfactorily address the community’s aspirations and values, as conveyed through their various inputs.

The CEP Review Group will increase our community engagement focus and strengthen our existing arrangements for the analysis of feedback and consideration of new and/or improved operating activities.

Whenever possible, direct communication, by face-to-face meeting, either as a home visitation, or WA1488 on-site meeting, phone calls and emails will be used to respond to complaints and other feedback received from the public/community and interest groups.

If a complaint, or feedback is lodged with the Extractive Industries Regulator, Earth Resources Regulation (DJPR/ERR), Bass Coast Shire Council, or through the Grantville ERC courtesy of a Community Representative, or Western Port Ward Councillor, the Dandy Premix response will be coordinated with and/or through the relevant authority, committee and elected representative.

11. Evaluation

Dandy Premix will establish a senior management, the “CEP Review Group”, comprised of the Managing Director, the WA1488 Quarry Manager and the Community Engagement Manager/Manager Sustainability, with external input from a member of the WA1488 CRG, to conduct annual reviews of all feedback received from the community.

If required by a complaint and/or strong feedback on a WA1488 operating, or off-site amenity issue, the CEP Review Group will meet on an ad-hoc basis to respond in a timely manner to resolve the urgency of the issue.

This may include invoking a senior management decision, or developing an alternative method of operation, or solution to satisfy the requirements of the community complaint, or feedback.

The purpose of the CEP Review Group is to ensure the effectiveness of the WA1488 CEP, the types and extent of community engagements undertaken and feedback received is reviewed and evaluated by senior management within Dandy Premix.

Further, that any senior management decisions required in response, are acted upon and feedback is subsequently provided to the community to demonstrate how their input has been considered and influenced the decision(s).

If the CEP Review Group so determines, the Community Engagement Plan will be amended to enable it to better meet the stated aims and objectives of the plan, outlined in Part 6 of the plan.

12. Contact us

Dandy Premix Quarries Pty Ltd (T/a Grantville Commercial Sands)
1381 – 1395 Bass Highway Grantville, VIC 3984

Manager Sustainability (*and Community Engagement Manager*):

Garry Cranny

Tel: 9703 8260 (Business Hours)

Mob: 0419 587 440

Email: gcranny@dandypremix.com

Quarry Manager:

Mark Van Den Heuvel

Tel: 5678 8899 (Business Hours)

Mob: 0417 570 841

Head Office:

21 Bennet Street, Dandenong, VIC 3175

Tel: 9703 8222 (Business Hours)

Website:

www.dandypremix.com

info@dandypremix.com



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Dandy Premix Concrete Pty Ltd									
Grantville Sand Quarry									
1381 - 1395 Bass Highway, Grantville, VIC 3984									
WVA1488 - COMMUNITY ENGAGEMENT PLAN: COMPLAINTS & FEEDBACK REGISTER AND ENGAGEMENT ACTIVITIES RECORD									

REHABILITATION & SITE CLOSURE PLAN


Extractive Industry Work Authority **WA1488**

Mineral Resources (Sustainable Development) Act
1990

Tenement Number: WA1488

Plan Number: PLN-001354

Work Plan Variation Statutorily Endorsed

Signature: 
Delegate of the Department Head

Date: 29/05/2020

RRAM Designation:- PLN-001354

Grantville Sand Quarry



Site Address: 1381 Bass Highway, Grantville, VIC 3984
Correspondence Address: PO Box 4112, Dandenong South, VIC 3164
Ph 9703 8222 (Reception & Accounts)
info@dandypremix.com

Project No. D10-003
11th March 2020

Table of Contents

1. Rehabilitation and Site Closure Plan	3
1.1. Rehabilitation Objective and Site End Use.	3
1.2. Progressive Rehabilitation	4
2. General Closure Design	6
2.1. Assets to be retained.	6
2.2. Timing and Maximum disturbed area.....	6
2.3. Terminal Face Treatment.....	6
2.4. Dams and constructed works.....	7
2.5. Overburden Requirements.....	7
2.6. Surface water management.....	8
2.7. Imported Material	8
2.8. Site security.....	8
2.9. Pest Animals and Noxious Weeds.....	8
2.10. Revegetation requirements	9
3. Closure Criteria and Monitoring.....	10
3.1. Criteria.....	10
3.2. Monitoring	10
3.3. Remedial Works	10
4. Management.....	11
4.1. Roles & Responsibilities.....	11
4.2. Documentation	11
4.3. Review	11
5. Post Closure Monitoring.....	11

Revision History.

Document Date	Description
18 Dec 2019	1 st draft of rehabilitation plan
27 Dec 2019	V4
8 Jan 2020	V5
11 Mar 2020	V6

1. Rehabilitation and Site Closure Plan

This Rehabilitation and Closure Plan has been developed to address the requirements of Schedule 1 of the Mineral Resources (Sustainable Development) (Extractive Industries) Regulations 2010, and Section 5.5 of the Preparation of Work Plans and Work Plan Variation guidelines, December 2018.

1.1. Rehabilitation Objective and Site End Use.

Rehabilitation Objective

The primary objective of the Rehabilitation Plan for the site is to leave it in a safe, stable and sustainable condition. The rehabilitated landform will include some backfilled excavation areas and a water filled pit.

This rehabilitation concept is illustrated **Figure 4 Rehabilitation Plan**.

To achieve this objective, the following principles will be applied:

- undertake progressive rehabilitation at the earliest possible opportunity, including the backfilling and/or vegetating of any terminal batters and topdressing worked out areas,
- initially revegetate the final surfaces with pasture grass species to stabilise the surfaces and manage erosion,
- actively encourage natural regeneration,
- identify and plant out suitable areas with trees / shrubs or pasture grasses, and
- continually monitor and evaluate the effectiveness of rehabilitation and revegetation and modify as necessary to continue to achieve the stated objectives.

Site End Use/Regeneration

The proposed 156 hectare (ha) site end use and regeneration is significantly influenced by the following factors:

- Approximately 65 ha on the upper elevations, eastern outlook and including a small area on the southern site boundary to Colbert Creek are committed to revegetation and conservation in perpetuity under a registered s173 Agreement with DELWP, Council and DJPR/ERR;
- A further 53 ha of the 70 ha of Dandy Premix freehold land adjoining the WA1488 site to the north is also committed to revegetation and conservation in perpetuity under the same s173 Agreement;
- The revegetation and conservation areas of the s173 Agreement will form a sustainable Biolink between The Gurdies Nature Conservation Reserve and the Grantville Bushland Reserve, consistent with the 'Bass Coast Biodiversity Biolinks Plan, 2018';
- The proposed further development of the Fine Medium Sand Extraction Pit (FMSEP) will result in a finished lake estimated to have a surface area of approximately 24 ha by John Leonard Consulting Services in his Hydrogeological Assessment, December 2019;

However, as a first order of rehabilitation, it is proposed to return the site to a safe and stable condition with limited agricultural use. This end use is consistent with the past and current land use and the activities conducted immediately prior to extractive industry use. No additional planning consent is required, and the initial end use

concept is representative of current thinking but retains the potential to be influenced by future trends, technology and both the natural assets and tourism strategies of the Bass Coast Shire Council.

Given the significant reserves within the site this concept may change over time in line with the prevailing situation.

Other influencing factors include the potential for integration with adjoining public land or use as public space.

The detail of the final rehabilitation and regeneration design and any additional monitoring criteria will be agreed with Earth Resources Regulation (DJPR/ERR) approximately 5 years prior to site closure, which is not anticipated under the Work Plan Variation development proposal, for an estimated 30-40 years.

1.2. Progressive Rehabilitation

The key driver for the site to undertake progressive rehabilitation is the reduction of risk to the environment (amenity, visual, flora and fauna habitat).

Areas of the site not required for quarrying or as vegetation off-sets, being primarily the smaller, “house paddocks” on the western Work Authority boundary, will continue to be used for limited agricultural purposes.

The quantity of overburden and dewatering plant generated filter cake material, the cost of stockpiling and rehandling material on the site, community expectations and regulatory requirements are all factors influencing progressive rehabilitation. Commencing progressive rehabilitation of terminal faces and worked out areas as soon as physically possible is the most economical solution and has been designed into the progressive development of the site.

Strategy

Progressive rehabilitation will be integrated into daily operations and wherever possible will occur as soon as practicable after extraction, however this will not always be possible. Factors effecting the timing of progressive rehabilitation include (but are not limited to):

- the availability of suitable rehabilitation areas across the site, i.e. terminal faces and/or finished batters;
- the availability of suitable material to undertake rehabilitation,
- seasonal weather conditions

The progressive rehabilitation principles applying to this site are:

- to store topsoil on site in bunds for use in site rehabilitation;
- to store overburden in nominated stockpiles for future use;
- where possible, directly place overburden in compacted layers in worked out areas;
- to progressively batter and vegetate all terminal faces as soon as practical;

The success (or otherwise) of progressive rehabilitation will be regularly reviewed and any changes in the progressive rehabilitation strategy required will be implemented as appropriate. The criteria and monitoring frequency presented in the table below are adopted for all progressive rehabilitation undertaken on the site.

Timing

A commitment to having a nominated area rehabilitated at a specific point time is not practical. The maximum disturbed area (ie un rehabilitated area) will be 50 ha.

There are two key milestones in achieving satisfactory progressive rehabilitation: firstly, the completion of earthworks and establishment of ground cover (to minimise the risk to the environment) and secondly the establishment of more substantial/trees/shrubs in those areas where this is proposed.

The timing for the first milestone is:

- ***As soon as practical:*** complete all earth works for the final land forming including the spreading of topsoil
- ***Within 3 months of completing earthworks:*** Initially stabilise slopes through brush matting and / or seeding, including undertaking any remediation works and spreading of additional soil followed by seeding/fertilising to pasture grasses as appropriate. The revegetation of rehabilitated areas and batters will occur within 12 months of the completed earth works
- ***Each Spring and Autumn*** (ie 6 monthly intervals): review and report vegetation status, undertake any remediation earthworks necessary and supplement pasture as appropriate.

This first milestone will be achieved when the rehabilitated area has a consistent ground cover (as determined by no bare patches greater than 10m²).

The timing for the second milestone is dependent on areas being available and seasonal considerations. Rehabilitated areas with an established groundcover will be maintained until such time as suitable continuous areas can be planted out with larger vegetation.

2. General Closure Design

A conceptual, site wide Rehabilitation Plan is attached as Figure 4

2.1. Assets to be retained.

The land and the Work Authority are owned and operated by Dandy Premix Quarries. The office, weighbridge, workshop and any associated infrastructure and services, some hardstand areas, any fuel / hydrocarbon stores and the site access road will be retained post closure. Additionally, some site access tracks and water dams as presented on the Rehabilitation Plan attached will be retained.

It is estimated that approximately:

- 2.5 ha of hardstand area (including office, amenities, weighbridge etc.) and
 - a total of approximately 4.0 ha of internal sealed access road and other tracks
- will be retained post closure.

All excavating and processing plant, both fixed and mobile will be removed from the site.

All visual screening bunds and plantings constructed or established over the course of operation will be retained, other than those temporary screenings identified in the development plan.

Any remaining stockpiles and waste dumps will be shaped, graded and incorporated into the rehabilitation surface as presented in the rehabilitation plan.

2.2. Timing and Maximum disturbed area

Progressive rehabilitation will be integrated into normal (e.g. weekly, monthly) operations as much as possible to maintain focus on the achievement of successful progressive rehabilitation outcomes.

The backfilling/rehabilitation of terminal faces in the CSEP will not commence until extraction has reached final depth (floor level) in the north-eastern terminal face, which will be no longer than five (5) years after the commencement of CSEP extraction. Due to the importance afforded progressive rehabilitation over the life of operations, it is anticipated that all final earthworks involved in rehabilitation of the WA1488 will be achieved within 12 months of the completion of sand extraction.

The total disturbed area, including all roads, hardstands, visual screening mounds, other earthworks and extraction areas is estimated to be 84.21 ha, whilst the maximum disturbed area open and unrehabilitated (including rehabilitated areas that have not met the primary objective) at any given time is estimated to be approximately 50 ha.

2.3. Terminal Face Treatment

Terminal faces in the Fine Medium Sand Extraction Pit (FMSEP) will be excavated at the designed terminal batter angle and rehabilitated as soon as possible by contour ripping, and the placing and spreading of topsoil before establishing vegetation. The dredge pond will remain as an open water body, containing groundwater and retaining run-off from the previous extraction area. Water edge vegetation and the construction of a 20m wide beaching bench (at 1V:10H) will stabilise the terminal face/groundwater interface and provide safe access/egress at the water's edge.

Terminal faces in the Coarse Sand Extraction Pit (CSEP) will be rehabilitated as soon as possible by placing and compacting suitable material (primarily overburden with some co-disposal of dried filter cake) to achieve complete backfilling of the pit void to a free draining surface. The final surface be lightly ripped, covered with topsoil and revegetated with grasses within 3 months of completing the earthwork to aid in managing erosion and dust. Fill material will be delivered by haul truck, and spread, compacted and battered by a dozer and/or

wheel loader. This method of placing material has previously been shown to achieve a compaction of at least 95% standard compaction (AS1289.5.1.1).

Subsequent vegetation, or revegetation, will match existing vegetation type or EVC (Lowland Forest and Heathy Woodland), with further detail below.

As part of the operational phase, a safety bund will be established around the crest of operating faces. Where an existing fence coincides with a terminal boundary providing potential accessibility to the general public, the fence will be retained. The vegetated screening bund to the Bass Highway site aspect will assist in deterring out-of-hours public access to the site.

Timing of the rehabilitation of terminal faces and benches, including the placement of overburden, topsoiling and revegetation, occurs after extraction limits have been achieved, potentially requiring the temporary stockpiling of some overburden material.

2.4. Dams and constructed works

There are no slimes dams or constructed dams proposed for the site. Filter cake generated from dewatered slimes will be stored in temporary stockpiles and/or combined with overburden and oversized clay reject (OCR) material for use in backfilling works. The generation and handling of filter cake is detailed in the Work Plan Variation (Storage of processed (dewatered) slimes).

There are several existing, shallow farm dams on the site, as well as the existing Sedimentation Pond and Bio-retention Basin and proposed sedimentation traps as part of the Surface Water Management Plan. The two farm dams located within the extraction footprint of the FMSEP will be removed as part of extraction activities, while all other farm dams located outside of the two extraction areas will be retained.

All visual screening bunds and plantings constructed or established over the course of operation will be retained, other than any temporary screenings that might be identified as being required.

Roads, tracks and other hardstand areas that were constructed as part of the quarry establishment works, and which are deemed unnecessary for the post quarry operations land use, will be removed/ripped and rehabilitated in keeping with other site areas and vegetation.

2.5. Overburden Requirements

The geological model for the site suggests:

- 150-200 mm of soil in open paddocks to under 100mm poor sand soil where sand outcrops;
- 5-10m of overburden; and
- Over 60 metres of sand sequence generally consisting of fine-medium, medium-coarse, coarse, very coarse and very fine sand

Resource calculations based on the geological model and proposed terminal pit designs show approximately 3.73 million cubic metres of material is available for rehabilitation, comprising:

Topsoil	130,000 cubic metres
Clay/overburden:	3.6 million cubic meters

The volume of material required to create the proposed rehabilitated land form (i.e. back fill the CSEP) is estimated to be approximately 3.5 million cubic metres. The overburden volume available will be supplemented by the combined addition of dewatered slimes (filter cake) and oversized clay reject (OCR) from sand screening and washing.

The terminal faces of the FMSEP will be excavated at the terminal design and no overburden will be required for face battering or backfilling.

2.6. Surface water management

Through the operational extraction phase surface water is managed to ensure run-off from disturbed areas (including roads, stockpiles and the temporary overburden stockpile) is intercepted and directed to sediment traps or basins, or into the extraction areas of the FMSEP, thereby minimising the potential for turbid (dirty) water run-off and erosion. The site Surface Water Management Plan, which is updated as required by extractive operations, details the most current surface water management strategies employed on the site.

Post closure, much of the surface water management infrastructure will remain in place. The lower bench of the FMSEP will be below the standing groundwater level, while surface water run-off from the rehabilitated terminal batters of the FMSEP will drain to the exposed water body (lake).

The existing protection measures related to the western end of the Deep Creek tributary (Melbourne Water asset MW3840) will remain in place.

2.7. Imported Material

Sufficient overburden material is available on site to undertake the proposed rehabilitation land forming, and there are currently no plans to import material.

Prior to importing any material, an Imported Fill Management Plan in accordance with ERR guidelines (and any other guidelines issued by the Environment Protection Authority) will be prepared and approved by the relevant authority.

2.8. Site security

The rehabilitation plan does not leave any vertical / steep faces, or high and exposed faces. The former dredge pond will remain as an open water body (lake). Emergency egress from the water will be assisted by the wide beaching bench and water edge vegetation.

No additional security fencing to the site's perimeter is anticipated. The existing site access point infrastructure, stock proof fencing, surface water diversion structures, and any retained screening vegetation will be retained post closure to assist in barring unauthorised vehicle and pedestrian access to the site.

Throughout the operation, site security will be periodic reviewed with any additional security protocols (surveillance, fencing, bunding, vegetation, etc.) implemented to meet the requirements of prevailing conditions. Post closure a detailed review of the established (in-place and operative) security infrastructure will be undertaken; a decision(s) will be made as to whether it is required in the longer term, and if so, it will be retained, or amended to best suit the site's post closure needs.

2.9. Pest Animals and Noxious Weeds

All pest animals will be controlled to the satisfaction of the DELWP, the Bass Coast Shire and ERR using approved methods. Spraying using approved treatments will be used to control declared noxious weeds. The presence of pest plants and animals on site will be monitored and managed on an ongoing basis and in accordance with Paul Kelly & Associates, Native Vegetation Removal and Offset Management Plan, December 2019.

2.10. Revegetation requirements

The primary objective is to return the site to a safe and stable condition with limited agricultural use, although significant areas of the Work Authority site have been committed to and are currently undergoing active establishment as a native revegetation and conservation corridor (Biolink). Throughout the life of the site, it will also be necessary to monitor the need and where required, establish more screening vegetation / perimeter planting.

The rehabilitated quarry faces, quarry floor and other disturbed areas will be fertilised and seeded as appropriate to initially establish pasture grasses before planting out with native species of local EVC and provenance. Detailed planting and species requirements for off-set areas are detailed in the Native Vegetation Offset Management Plan (attached to the WPV). Similar detailed requirements for buffer, landscape and riparian areas are contained within the Landscape and Vegetation Plan, Spring 2013, prepared and being implemented by Bass Coast Landcare Network by engagement from the Work Authority holder, Dandy Premix (copy also attached to the WPV).

A variety of re-vegetation methods may be required to establish a viable vegetative cover. Experience at this site has shown that natural revegetation has not proved to be successful in one area of the s173 Conservation and Revegetation plan, necessitating direct seeding and the increased planting of tube-stock.

Where appropriate a short-term cover of grasses may be established to stabilise disturbed areas prone to wind or surface water erosion. Fencing (both temporary and permanent) will be used to protect specific or vulnerable areas of revegetation from access, both during and after establishment.

The conceptual rehabilitation plan is presented in Figure 4 Rehabilitation Plan.

3. Closure Criteria and Monitoring

The Table below outlines the key criteria and monitoring to evaluate the success of the rehabilitation program, including operational works, progressive rehabilitation and any final rehabilitation completed during the site's operational phases as well as after site closure.

3.1. Criteria

In line with rehabilitation objectives, closure criteria will initially concentrate on measuring the success of the prevention of erosion within the extraction areas and turbid (dirty) water run-off from the disturbance footprint. These risks will be mitigated through cut off drains, vegetation establishment, strategic location of batter swale drains and any other surface water management strategies as required and outlined in the Surface Water Management Plan. Subsequent criteria will focus on the re-establishment and maintenance of agricultural land.

In addition to the criteria outlined below it is understood that ERR, from time to time, may require specific rehabilitation and/or site closure requirements, including any monitoring and reporting requirements. If additional requirements are imposed, they shall be documented appropriately (i.e. TARP etc.) and available for review by the relevant authority on request.

3.2. Monitoring

Monitoring of rehabilitation, including any progressive rehabilitation is an integral part of the operational phase of the site and will continue post closure. Post closure monitoring records will adopt any operational monitoring worksheets/pro-forma reports. The post closure monitoring program is designed to demonstrate that the closure criteria has been met and that the site is not causing any hazardous, or environmental, off-site impacts, nor is it adversely impacting local amenity.

Post closure monitoring will continue for at least three years, or for a period conditioned by ERR, after the site has ceased operating, or until the relevant authority is satisfied closure criteria has been met.

3.3. Remedial Works

If any of the closure criteria is not being met or is not satisfactorily progressing based on the site monitoring, any corrective and/or immediate maintenance and remediation activities will be undertaken to ensure the earliest compliance with the criteria. Example situations would include, but not be limited to:

- Damage to fencing – repair fencing, investigate the cause, initiate additional measures as necessary;
- Poor vegetation development – investigate cause, engage agronomist for advice on pasture species, soil properties, fertiliser, remedial works as required;
- Excessive weed presence – initiate one off weed eradication program, review weed management schedule and pasture development; and
- Excessive erosion – repair the erosion area(s), review surface water management operations, consider more appropriate location of drains and/or culverts. Investigate alternative erosion control devices (e.g. rock armour, hay bales, other vegetation).

4. Management

4.1. Roles & Responsibilities

The Quarry Manager (or their nominated representative) is responsible for managing the implementation of the Rehabilitation and Site Closure Plan, including:

- Delegating tasks associated with this Rehabilitation and Site Closure Plan where necessary;
- Providing adequate resources to implement this Rehabilitation and Site Closure Plan; and
- Providing adequate training to employees and contractors regarding their requirements under this Rehabilitation and Site Closure Plan.

4.2. Documentation

All monitoring outcomes, including any visual inspection worksheets/reports, any testing or analysis, any specialist reports etc, will be recorded and retained at the Dandy Premix Quarries site office for periodic review. Where appropriate, or as required, this information will be available to ERR or other relevant authorities.

4.3. Review

This Rehabilitation and Site Closure Plan will be reviewed every five years for ongoing appropriateness, with a comprehensive review approximately five years prior to the anticipated quarry closure to ensure it adequately addresses local community, Council and ERR objectives.

These reviews will take into consideration any changes that may have occurred on site, the results of any monitoring, advice from any specialist, the effectiveness or otherwise of any progressive rehabilitation and any directives by ERR.

Depending on the nature of any changes to the plan, discussions will be undertaken with ERR to determine if there is any significant increase in the risk profile of the site to determine if a variation or a notification is required. Any such decision will be thoroughly assessed at the time of the review and the most appropriate pathway undertaken in consultation with ERR, including initiation of a work plan notification or variation.

5. Post Closure Monitoring

Given the projected site closure is several decades in the future it is unrealistic to describe a detailed post closure monitoring program at this current point-in-time. A detailed post closure monitoring schedule will be developed at the time of the final review (some 5 years before the anticipated site closure), addressing all relevant activities to the satisfaction of all the relevant authorities at that time.

It can be expected that post closure monitoring will reflect closure criteria by:

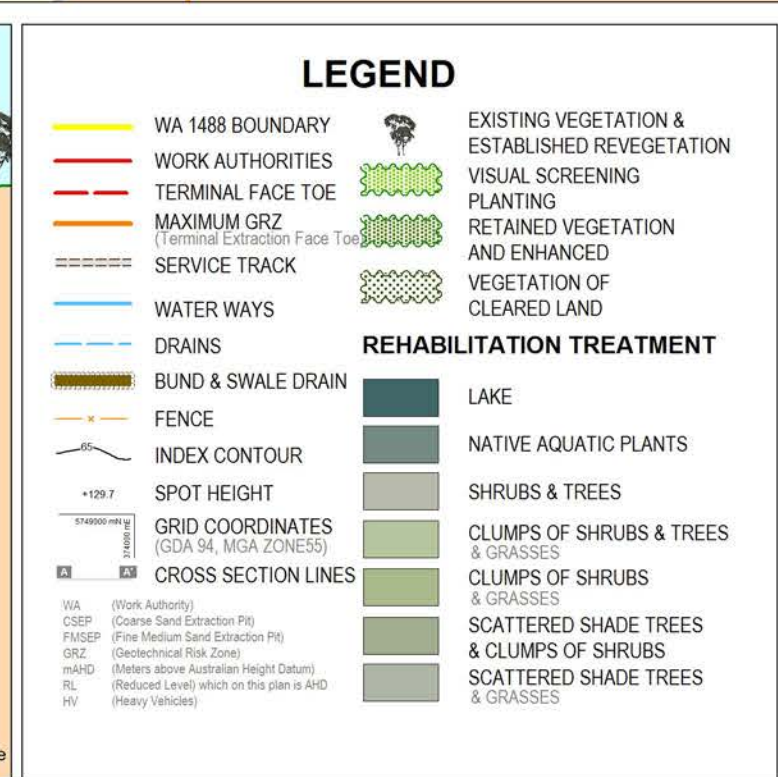
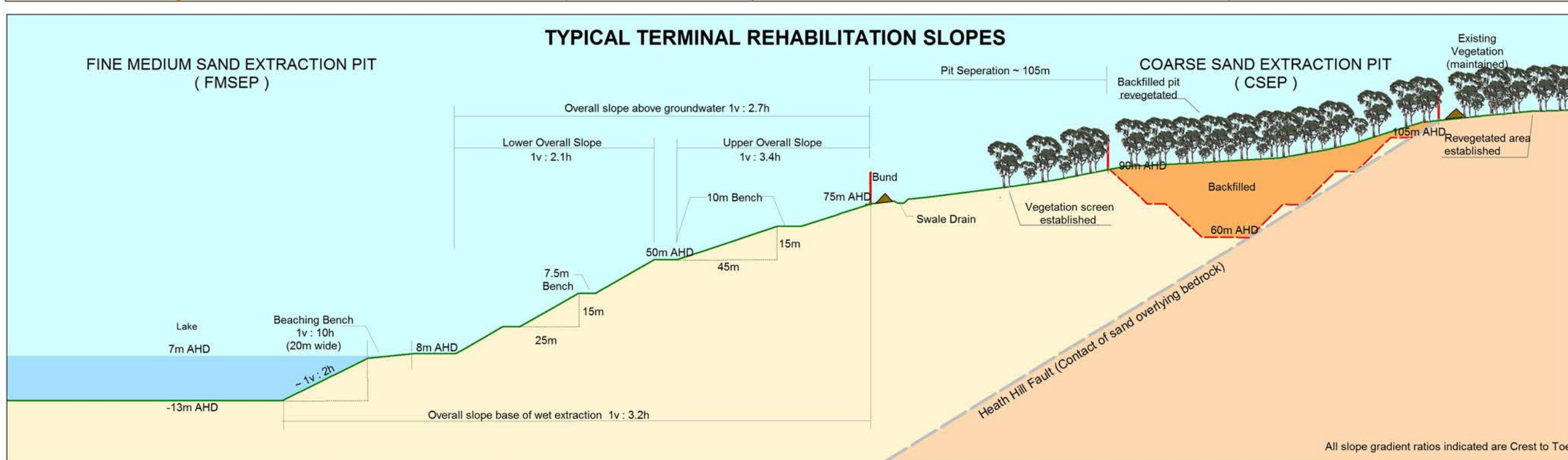
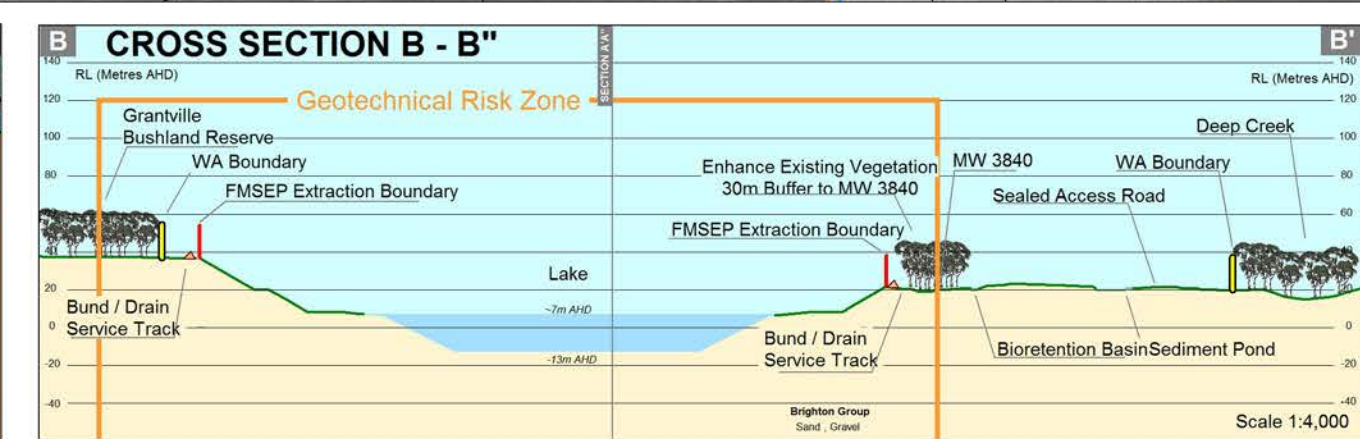
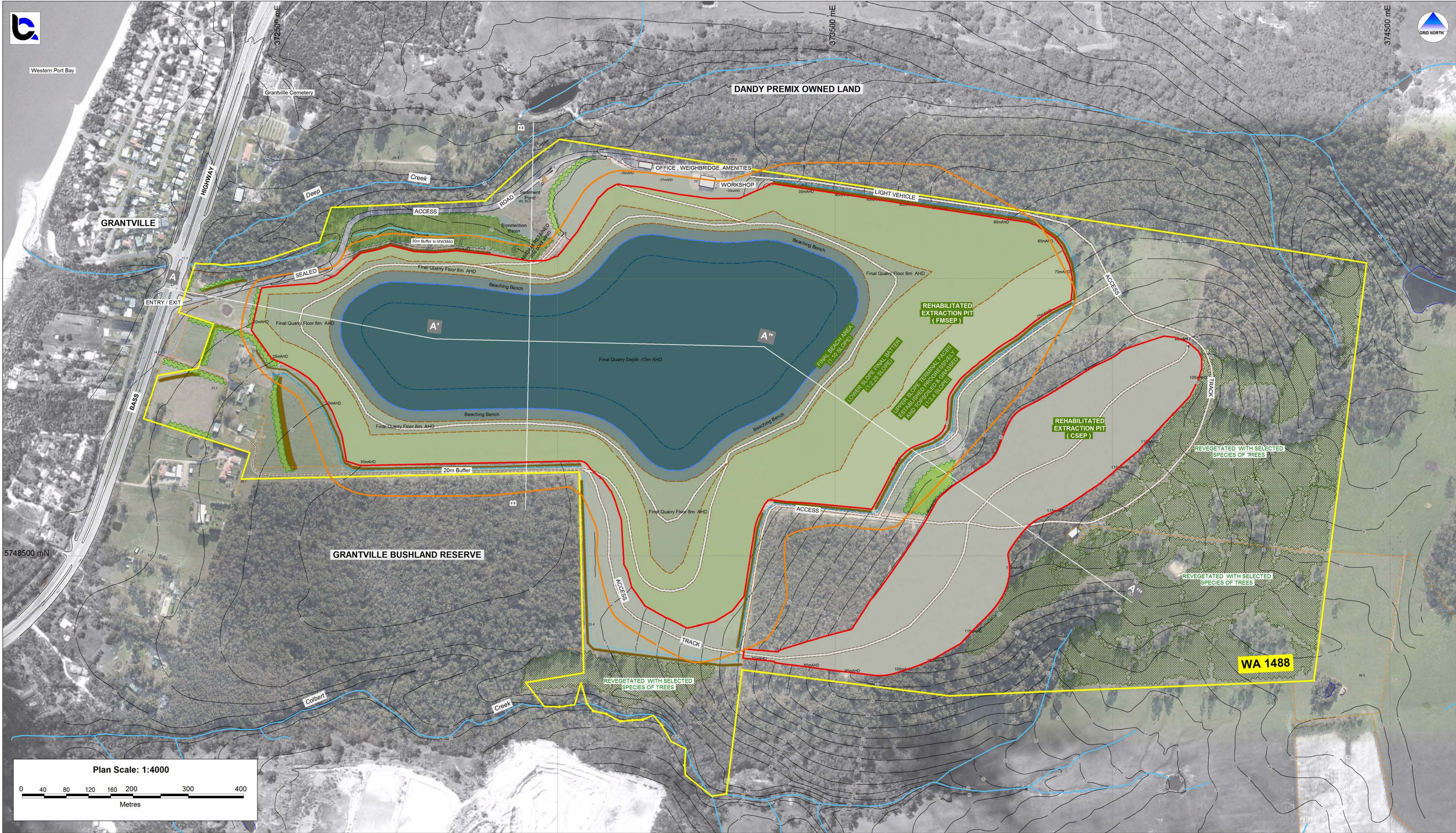
- Auditing the site for remaining plant, machinery, scrap, rubbish etc.;
- Measuring suspended solids content of surface water run-off from the MW3840 tributary; and
- Pasture establishment, native vegetation growth rates and the agricultural viability of the site.

Item	Rehabilitation / Closure Criteria	Elements to be Monitored	Frequency
Fine/Medium Sand Excavation Pit (FMSEP)	Terminal batters as per design Surface water treatments in place Sediment traps, sediment dams in place and functioning Viable vegetation established Groundwater level established Acceptable level of erosion	Final landform criteria constructed in accordance with the plan Visual assessment of batters, looking for presence/absence of landform slumping, cracks or movement Pasture / vegetation establishment (see below) Effectiveness of fencing to control stock and feral animals impacting terminal batter Erosion (see below)	Operationally 3 Monthly Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Coarse Sand Extraction Pit (CSEP)	Terminal batters as per design Backfilled to previous landform Minimum compaction of backfilled batter 95% Standard Compaction (AS1289.5.1.1) Viable vegetation established Batter Swale drains functioning Acceptable level of erosion	Final landform criteria constructed in accordance with the plan Visual assessment of batters, looking for presence/absence of landform slumping, cracks or movement Native vegetation establishment (see below) Erosion (see below)	Operationally 3 Monthly Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Geotechnical Integrity – General Operation	Safe and stable final landform	Site Inspection of all working faces, terminal faces and rehabilitated faces in accordance with Ground Control Management Plan (GCMP). Periodic review of faces by suitably experience geotechnical engineer	Operationally Site inspection Monthly Geotechnical Review as required by the GCMP Post Closure Site inspection Y1 - 3 Monthly Y2 - 6 Monthly Y3 --6 Monthly Y4 – 6 Monthly Geotechnical Review every 1 years for 3 years.

Item	Rehabilitation / Closure Criteria	Elements to be Monitored	Frequency
Screening Vegetation where established	Min 90% vegetation establishment No bare patches greater than 10m ²	Visual estimate of vegetation establishment (tree establishment) General description of vegetation vitality / die back (see BCLN Landscape and Vegetation Plan) Record / photograph any bare patches	Operationally 3 Monthly Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Erosion	No erosion channels greater than 1m deep and/or wide No more than 5 erosion channels greater than 0.5m deep and/or wide within a 20m wide area.	Erosion channels greater than 0.25m deep or wide recorded & photographed Note /photograph any erosion channels less than 0.25m deep or wide for potential follow-up	Operationally 6 Monthly Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Pasture / Vegetation (batters and extraction areas)	Min 90% vegetation establishment No bare patches greater than 10m ²	Visual estimate of vegetation establishment (canopy cover) General description of vegetation vitality / species survival (see Off-set Management Plan etc) Record / photograph any bare patches	Operationally 6 Monthly Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Fixed / Mobile Plant	All fixed and mobile processing plant removed from site	Record / photograph presence of any fixed / mobile processing plant	Operationally Annually for derelict / redundant plant Post Closure One off
Infrastructure (retained post closure)	Infrastructure maintained to neat/tidy appearance	Photograph all retained infrastructure Weighbridge/Office/Amenities building Workshop/Storage Shed	Operationally Annually for derelict / redundant plant Post Closure Annually

Item	Rehabilitation / Closure Criteria	Elements to be Monitored	Frequency
Surface Water Drains	Surface water drains in place and free flowing Erosion satisfactorily controlled	Specific monitoring as per Water Management Plan, otherwise visual inspection drains, silt traps and sediment control devices for suitability and ensure that no adverse level of sediment is leaving the site, note / photograph	Operationally 3 Monthly Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Surface Water Quality (for water leaving the site)	No turbid water leaving site Clean water (Salinity, turbidity & TDS levels of any water leaving the site in accordance with sites EPA guidelines)	Visual inspection for water quality, specific monitoring as per the Surface Water Management Plan Periodic sampling and analysis when flow allows, e.g. after significant rainfall event(s)	Operationally Inspections and monitoring in accordance with the Surface Water Management Plan Additional inspections after significant rainfall events. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Roads / Tracks (removed post closure)	Tracks/Roads for removal clearly identified and agreed with ERR and with CFA input All identified roads and tracks, not required as 'Fire Access Track' returned to pasture / vegetation	Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches	Operationally Annually for redundant tracks. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly
Hardstand Areas (removed post closure)	Hardstand areas for rehabilitation clearly identified and agreed with ERR Area returned to pasture / vegetation	Visual estimate of pasture establishment (ground cover) General description of pasture vitality Record / photograph any bare patches	Operationally Annually for redundant areas. Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly
Hardstand Areas (retained post closure)	Hardstand area remaining post closure clearly identified and agreed with ERR Hardstand area maintained to acceptable standard	General description of road surface & drainage system, inclusive of Sediment Pond and Bio-retention Basin Record / photograph typical section erosion	Operationally Annually for redundant areas. Post Closure At site closure then annually

Item	Rehabilitation / Closure Criteria	Elements to be Monitored	Frequency
Roads / Tracks (retained post closure)	Tracks/Roads remaining post closure clearly identified and agreed with ERR Roads/ tracks surfaces maintained to acceptable standard Edge drains maintained and effective	General description of road surface & drains Record / photograph typical section	Operationally Annually for redundant areas. Post Closure At site closure then annually
Sediment Pond and Bio-retention Basin (retained post closure)	Structure wall integrity maintained No erosion on downstream embankment Upstream wall integrity not compromised by excessive flow action	Record / photograph typical section Erosion (see above) Aquatic Vegetation establishment and health (see BCLN Landscape and Vegetation Plan)	Operationally Monthly visual inspection Post Closure Y1 - 3 Monthly Y2 - 6 Monthly Y3 -12 Monthly Additional inspections after significant rainfall events.
Site Security	Integrity / suitability for purpose of WA boundary and property fencing maintained	Boundary Fencing Vegetation quality/viability Bund and / drain integrity	Operationally Annually Post Closure Annually
Noxious Weeds	Noxious weeds less than 2.5% total ground cover	Weed cover – Woody and Herbaceous Weeds – Scheduled weed spaying program maintained and recorded	Operationally 6 monthly. Post Closure 6 monthly
Pest Animals	Local guidelines re pest animals No visible impact on rehabilitation	Evidence of pest animals (photo) Assessment of numbers (if possible)	Operationally 6 monthly. Post Closure 6 monthly



Mineral Resources (Sustainable Development) Act 1990

Tenement Number: WA1488

Plan Number: PLN-001354

Work Plan Variation Statutorily Endorsed

Signed: *[Signature]*

Delegate of the Department Head

Date: 29/05/2020

DANDY PREMIX QUARRIES PTY LTD
PO Box 4112, Dandenong South, VIC 3164
Ph 9703 8222
info@dandypremix.com

Extractive Industry Work Authority No: 1488
Grantville Sand Quarry, GRANTVILLE

SITE REHABILITATION PLAN

Author: AJM Date: 10/01/2020 Drawing: NS - 1904 - Rev 0

Survey Source: Landair Surveys

Orthophoto Date: 30/06/19, Google, undated Project No: D10_003

Projection: MGA Zone 55 (GDA 94)

WA1488_Fig4_RehabPlanR0_WOR **Figure: 4**

BCA CONSULTING
BCA CONSULTING - Earth Resources | 2941 Norral Road Nunawading 3131
Ph: 03 9873 5123 | email: admin@bcaconsulting.com.au | www.bcaconsulting.com.au

WESTERN PORT



WESTERN PORT
INTERTIDAL
COASTAL RESERVE

East Arm

2km

1km

0.5km

WA 1488

WA210

WA283

WA470

WA784

WA532

WA512

LEGEND

- Work Authority
- WA Boundaries Feb 2018
- Extraction Area
- GRZ
- Houses within 2km
- Residential Area
- Crown Land (LIMS)
- Extent of tree Cover over free hold land (1995)

St Helier

Extractive Industry Work Authority No: 1488
Grantville Sand Pit, GRANTVILLE

LOCALITY PLAN



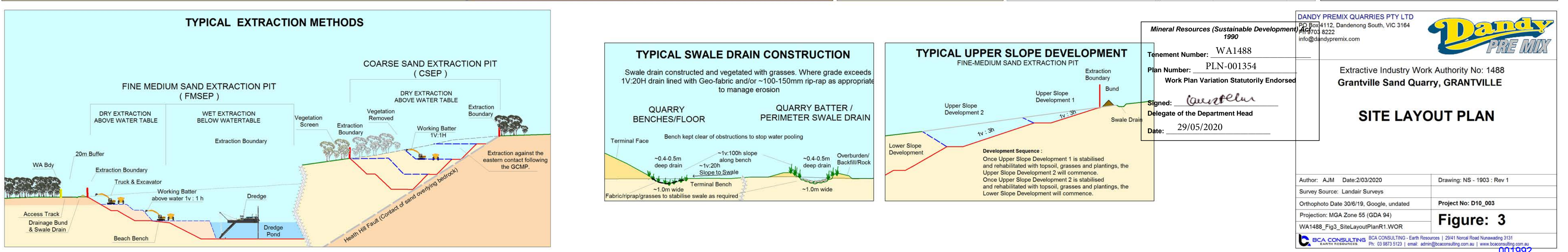
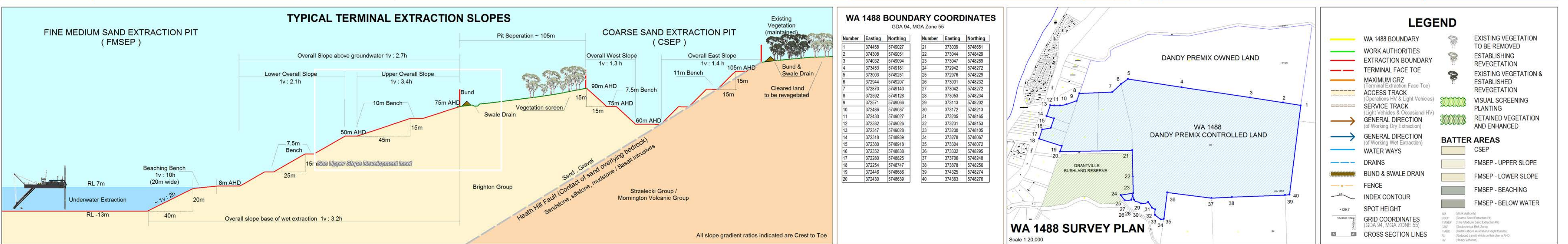
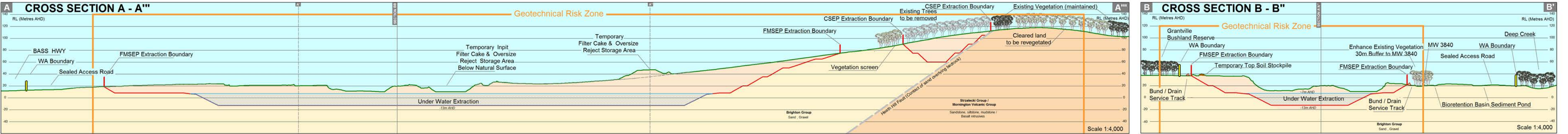
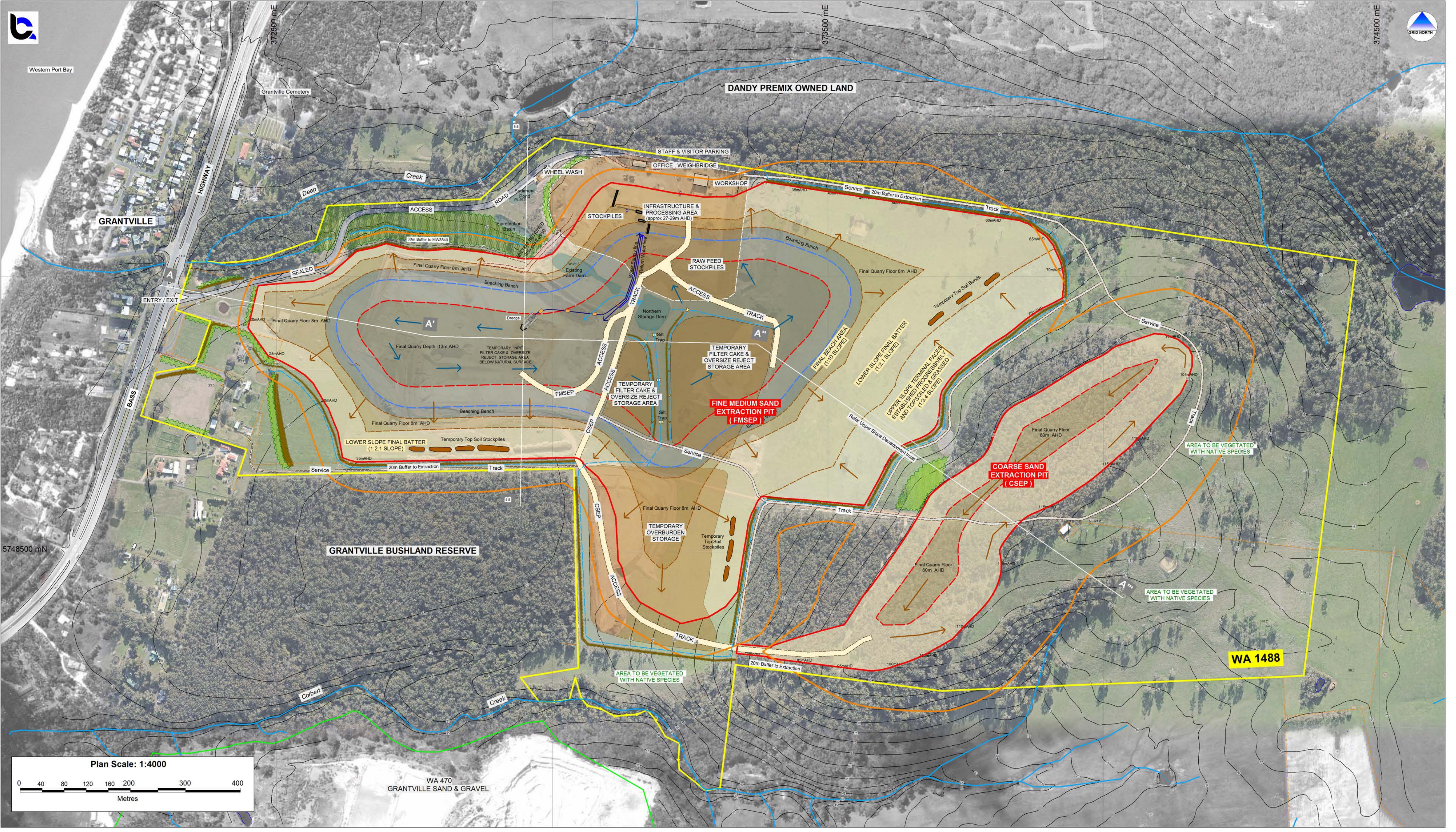
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For
DANDY PREMIX QUARRIES PTY LTD

Drawing: A3-Draft Revision: 0 Author: IW, AM
Fig2_LocalityPlan_1019.WOR
Date: 18/12/2019

Project No: D10-003
Figure: 2

Plan Scale: 1:25000
0 0.5 1
km
Projection MGA Zone 54 (WGS84) Vertical Datum AHD
Plan scanned from portions of 25000 Series
8001_3_N Grantville, 8001_3_S Grantville

001991



DANDY PREMIX QUARRIES PTY LTD
PO Box 4112, Dandenong South, VIC 3164
Ph: 03 9873 5123 | email: admin@dandyquarries.com.au | www.dandyquarries.com.au

Mineral Resources (Sustainable Development) Act 1990
Tenement Number: **WA1488**
Plan Number: **PLN-001354**
Work Plan Variation Statutorily Endorsed
Signed: *[Signature]*
Delegate of the Department Head
Date: **29/05/2020**

Extractive Industry Work Authority No: 1488
Grantville Sand Quarry, GRANTVILLE

SITE LAYOUT PLAN

Author: AJM Date: 2/03/2020 Drawing: NS - 1903 : Rev 1
Survey Source: Landair Surveys
Orthophoto Date: 30/6/19, Google, undated
Projection: MGA Zone 55 (GDA 94)
WA1488_Fig3_SiteLayoutPlanR1.WOR
Figure: 3

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Earth Resources
Ph: 03 9873 5123 | email: admin@bcaconsulting.com.au | www.bcaconsulting.com.au
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Landscape & Vegetation Plan

Dandy Premix Quarries - Grantville

Spring 2013



Introduction.....	3
Site.....	3
Area 1 – TPZ 1.....	5
Terrestrial Planting zones 1A, B, C, D, and E.....	5
TPZ 1 Site preparation.....	7
TPZ 1 Species list and numbers	8
TPZ 1 Management	9
Area 2 – TPZ 2.....	10
Terrestrial planting zone 2A.....	10
TPZ 2 Site preparation.....	12
TPZ 2 Species list.....	13
TPZ 2 Management	13
Area 3 – TPZ 3.....	15
Terrestrial planting Zones 3A, B, and C.....	15
TPZ 3 Site preparation.....	19
TPZ 3 Species list and numbers	20
TPZ 3 Management	21
General TPZ considerations	23
TPZ densities	23
Seed and tube stock providence and supply	23
Monitoring.....	23
Reporting	23
Aquatic planting zones 3i, ii, iii, iv, and v	24
APZ 3 Description	24
APZ 3 Purpose.....	24
APZ 3 Cross Section.....	25
APZ 3 Site preparation and planting	26
APZ 3 Species list and densities.....	27
APZ 3 Management.....	29
APZ 3 Plant stock providence and supply.....	29
Summary	30
References	31
Appendix A.....	32
Appendix B	38



Introduction

Bass Coast Planning Permit No 120388 was issued to Dandy Premix Quarries on the 7th of August 2013, for the development and use of a sand extraction quarry at 1295-1381 Bass Highway, Grantville. As a condition of permit, Dandy Premix Quarries is required to submit a Landscape and Vegetation Plan (this document), detailing the location of plantings with height at maturity, botanical and common names of plants to be used, as well as ongoing management. The Landscape and Vegetation Plan will form part of the Site Environment Management Plan (SEMP).

A Work Authority No. 1488 for the sand quarry was endorsed by the Department of State Development, Business and Innovation (DSDBI), Energy and Resources, Earth Resources Division on the 3rd of August 2012.

Site

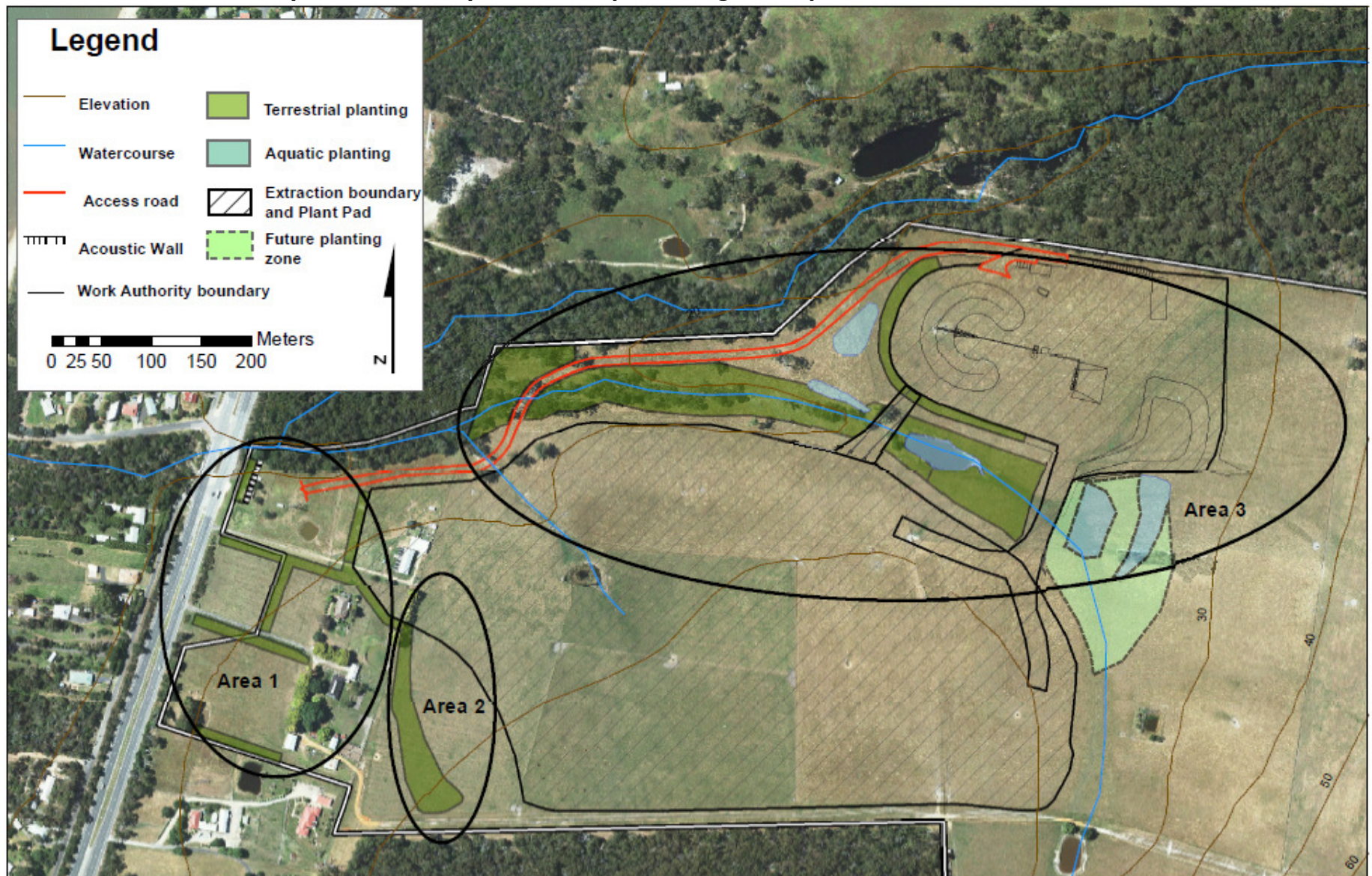
This Landscape and Vegetation plan relates to the area of Work Authority 1488 (WAI488) shown in the following map. There is little of ecological value in this area, having been cleared and converted to exotic pasture for grazing over 50 years ago.

Historically, the type of indigenous vegetation that dominated this area prior to clearing is classified as Lowland Forest (DEPI, 2013). Examples of this type of vegetation can be seen in the nearby Gurdies reserve to the east of the Bass Highway. Scattered large old trees along a small tributary (Melbourne Waterway 3840) of Deep creek now make up the only indigenous vegetation in this WAI488 area.

The development of the site for sand extraction (subject to PPI 20388) will have minimal impact on existing indigenous vegetation. The location of the quarry, access road and hardstand area (including plant pad) will also minimise the impact on the aesthetic values of the area. As a further precaution a number of plantings have been designed across the area to mitigate any negative impacts on ecology, visual landscape, water quality, noise levels, and air quality. These plantings will also greatly improve the biodiversity values of the WAI488 area - from grazing land with deteriorating scattered large trees, to a densely vegetated and protected waterway with a series of naturally functioning wetlands connecting with Deep Creek and the surrounding vegetation. "These works will contribute significantly to protecting the values of the receiving waters of Deep Creek and Western Port" (Pat Condina, Appendix A).

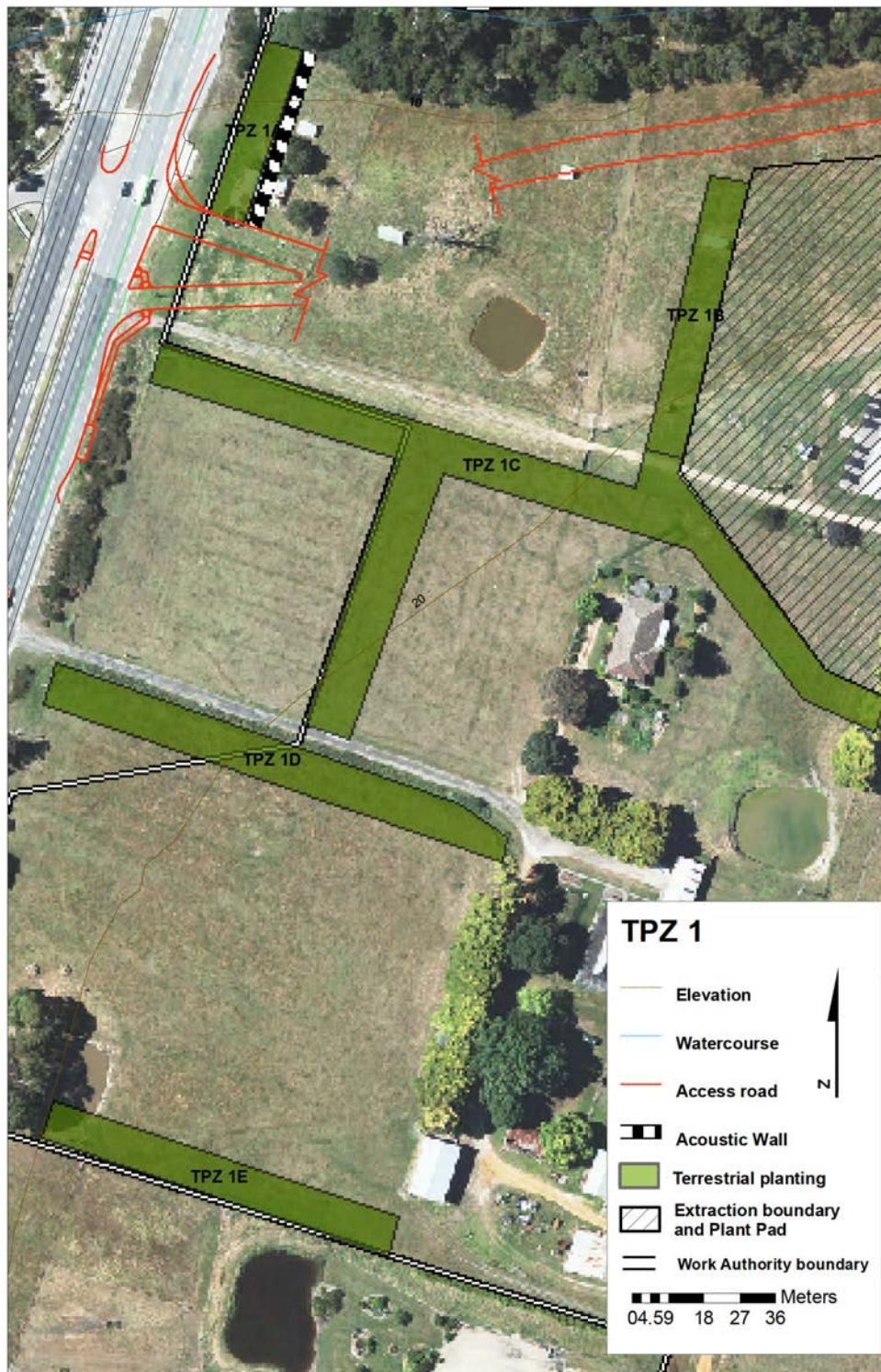
Existing stock fences to the north, east and south-east of the site will be left intact, excluding stock from the landscape and revegetation works.

The area of Work Authority 1488 covered by the Landscape and Vegetation plan



Area I – TPZ I

Terrestrial Planting zones I A, B, C, D, and E



Overview of TPZ I plantings adjacent to the Bass highway

TPZ I Description

TPZ I is located at the western end of the WAI 488 site and has frontage of the Bass Highway. TPZ I has a westerly aspect and slopes gently towards the Bass Highway and Western Port. Prior to clearing this site would have been covered by Lowland Forest (DEPI, 2013a).

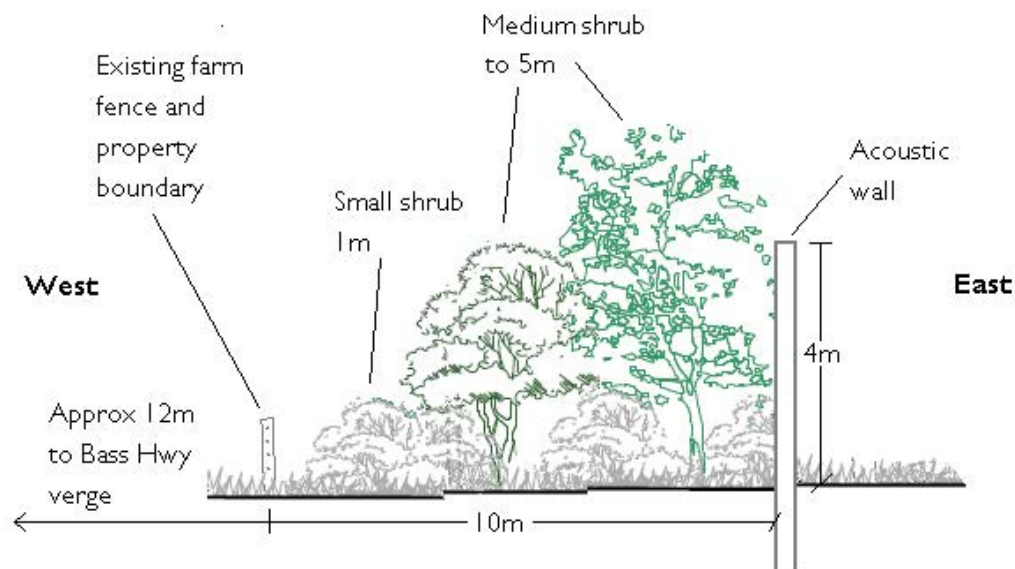
TPZ I Purpose

A four metre high acoustic wall is being installed to the north-west frontage of the site to the Bass Highway. Plantings in TPZ IA will be used to screen the wall from the highway. The other TPZI plantings will screen off the access road (mitigating noise and dust) from the surrounding houses. The location of the plantings has been designed to maintain the 'farm feel' of the landscape.



Looking south along TPZ IA; this house will be demolished to make way for the acoustic wall, and the planting will be between the acoustic wall and farm fence.

TPZ IA cross section



Cross section of TPZ IA planting showing structure of mature vegetation (5-7 years after planting)

As shown in the previous planting cross section, TPZ 1A planting will be restricted to shrubby species that will reach a height at maturity of 5m. This will effectively screen the 4 m high acoustic wall as well as preventing large tree debris from falling towards the Bass Highway.

TPZ 1B, C, D and E cross section



Cross section of TPZ 1B, C, D & E planting showing structure of mature vegetation (10-15 years after planting)

TPZ 1B, C, D, & E do not run alongside the Bass Highway, so trees have been included consistent with standard Lowland Forest planting recommendations.

TPZ 1 Site preparation

The 2013 planting season is coming to an end and local indigenous nurseries are running low on stock. In order to supply the required species and numbers these nurseries require plant orders nine months in advance. Therefore the earliest that TPZ 1 plantings can take place is after the autumn break (May – June) 2014.

High threat invasive weeds will be controlled prior to planting. High threat weeds observed during a site visit on 28/8/2013 included agapanthus, kikuyu, angled onion, snow drops, and arum lily.

Once high moisture levels are achieved in late Autumn 2014, spots of approximately 400mm in diameter will be sprayed at the required density within TPZ 1 planting zones. When the sprayed grass has yellowed off seedlings will be planted using Hamilton tree planter punches. Species will be laid out to achieve the vegetation structure outlined in the TPZ 1 cross sections. If browsing animals are present (rabbits and wallabies) appropriate tree guards will be installed over the plants.

For more detail refer to the TPZ 1 site management table.

TPZ I Species list and numbers

Species	Common Name	1A (m2)	1B (m2)	1C (m2)	1D (m2)	1E (m2)	Sub Total	Description
<i>Eucalyptus obliqua</i>	Messmate Stringybark	425	725	3116	1224	910	40	Tree - overstorey 20m
<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum		5	20	10	5		Tree - overstorey 20m
<i>Eucalyptus radiata</i> s.l.	Narrow-leaf Peppermint		5	20	10	5	40	Tree - overstorey 20m
<i>Eucalyptus viminalis</i>	Manna gum			15			15	Tree - overstorey 20m
<i>Acacia dealbata</i>	Silver wattle							Understorey tree 15m
<i>Acacia mearnsii</i>	Black wattle						0	Understorey tree 15m
<i>Acacia melanoxylon</i>	Blackwood		10	45	15	10	80	Understorey tree 15m
<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	Sweet Bursaria	10	5	20	10	5	50	Tall Shrub 5-7m tall
<i>Melaleuca ericifolia</i>	Swamp paperbark							Tall Shrub 5-7m tall
<i>Melaleuca squarrosa</i>	Scented paperbark							Tall Shrub 5-7m tall
<i>Mersin howittiana</i>	Mutton-wood							Tall Shrub 5-7m tall
<i>Pomaderris aspera</i>	Hazel Pomaderris							Tall Shrub 5-7m tall
<i>Acacia mucronata</i> subsp. <i>longifolia</i>	Narrow-leaf Wattle		10	45	15	10	80	Medium Shrub 1-5m tall
<i>Acacia paradoxa</i>	Hedge wattle	10	5	20	10	5	50	Medium Shrub 1-5m tall
<i>Acacia stricta</i>	Hop Wattle	10	10	45	15	10	90	Medium Shrub 1-5m tall
<i>Acacia suaveolens</i>	Sweet Wattle		10	45	15	10	80	Medium Shrub 1-5m tall
<i>Acacia verticillata</i>	Prickly Moses	10	5	20	10	5	50	Medium Shrub 1-5m tall
<i>Cassinia aculeata</i>	Common Cassinia			10	10	5	25	Medium Shrub 1-5m tall
<i>Coprosma quadrifida</i>	Prickly currant bush		10	45	15	10	80	Medium Shrub 1-5m tall
<i>Indigofera australis</i>	Austral Indigo	10	5	20	10	5	50	Medium Shrub 1-5m tall
<i>Leptospermum continentale</i>	Prickly Tea-tree	10	10	45	15	10	90	Medium Shrub 1-5m tall
<i>Olearia lirata</i>	Snowy Daisy-bush							Medium Shrub 1-5m tall
<i>Ozothamnus ferrugineus</i>	Tree Everlasting		5	20	10	5	40	Medium Shrub 1-5m tall
<i>Polyscias sambucifolia</i>	Elderberry Panax							Medium Shrub 1-5m tall
<i>Solanum aviculare</i>	Kangaroo Apple		10	45	15	10	80	Medium Shrub 1-5m tall
<i>Viminaria juncea</i>	Golden Spray	5	5	30	10	5	55	Medium Shrub 1-5m tall
<i>Goodenia ovata</i>	Hop Goodenia	20	20	90	15	25	170	Small Shrub 1m tall
<i>Pultenaea daphnoides</i>	Large leaf bush pea		10	45	15	10	80	Small Shrub 1m tall
<i>Tetrarrhena juncea</i>	Forest Wire-grass							Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Carex appressa</i>	Tall sedge							Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Dianella tasmanica</i>	Tasman Flax-lily	20	40	70	60	50	240	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Gahnia sieberiana</i>	Red fruit saw sedge							Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Juncus australis</i>	Austral rush							Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Dianella revoluta</i>	Black anther flax lily			70	20	20	110	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	25	40	70	60	50	245	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Poa labillardieri</i>	Common Tussock-grass			80			80	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Clematis aristata</i>	Mountain clematis							Scrambler / climber
<i>Pandorea pandorana</i> subsp. <i>Pandorana</i>	Wonga vine							Scrambler / climber
Total		130	220	935	365	270		

Note: final species list will be determined by the availability of species from nurseries. If, for example, certain medium shrub species are not available, numbers of available medium shrubs will be increased accordingly.

TPZ I Management

Ongoing management of TPZI plantings is essential if the plantings are to achieve the desired structure and purpose. High threat weeds and browsing animals are the biggest threats. A certain amount of replacement planting will be required to ensure vegetation structure is achieved and maintained.

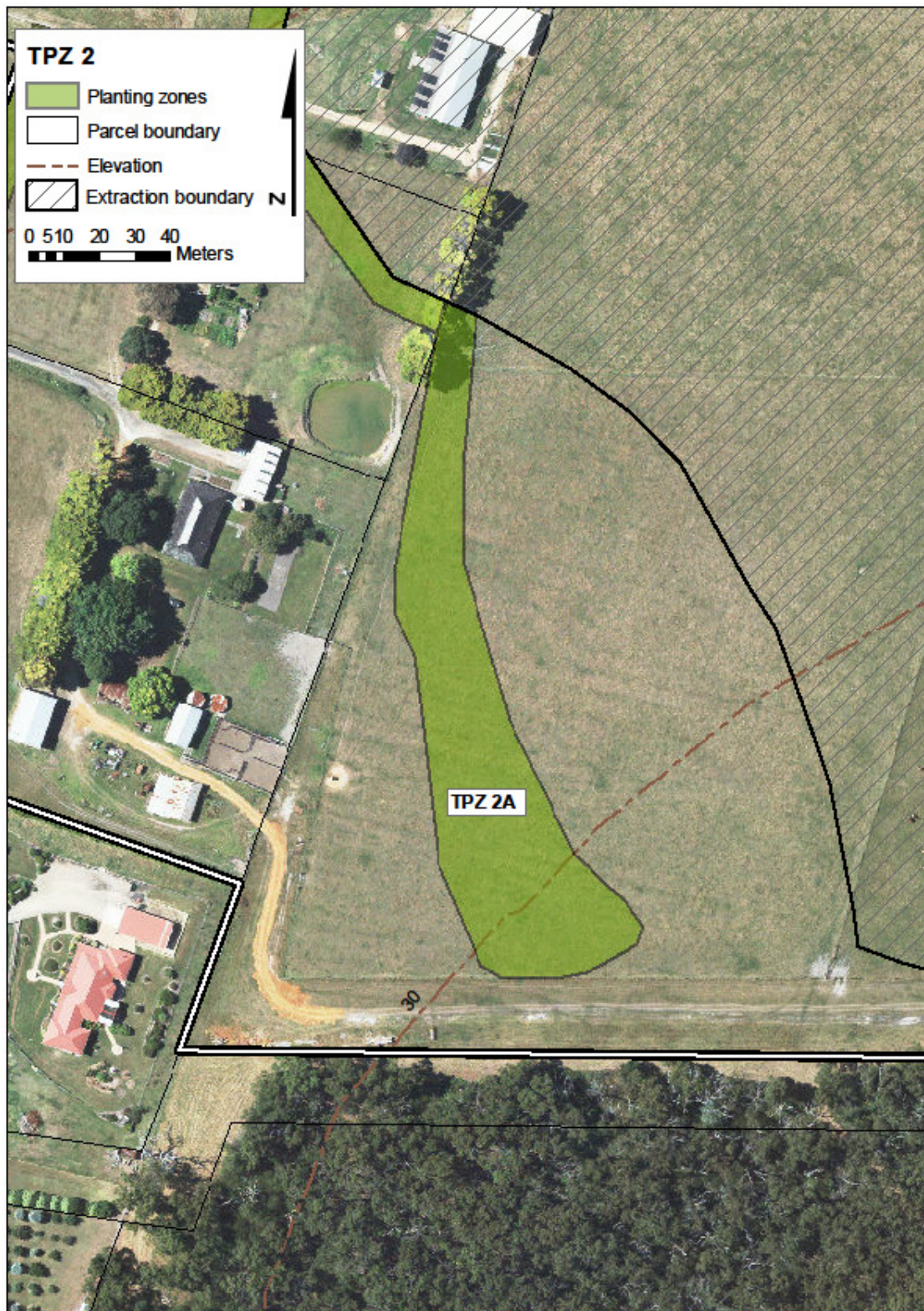
Year one – 2013				
Season	Activity	Species	Sites	Method
Spring	Spray weeds before seed set at known locations	Kikuyu, angled onion, snow drops, and arum lily Agapanthus,	TPZ 1A TPZ 1D	Spot spray with Esteem™. Use at the rate appropriate to weed and use relevant PPE (see label)
	Order plants	See species list	All zones	

Year two – 2014				
Season	Activity	Species	Sites	Method
Summer/ Autumn Autumn/ Winter	Pest animal monitoring	Rabbits and wallabies	All zones	Spotlight count over 3 successive nights
	Site preparation		All zones	Spray 400mm diameter spots at the required density with Roundup Biactive™. Use at the rate appropriate and use relevant PPE (see label)
	Plant tubes and guard if required		All zones	Distribute seedlings at locations to achieve the desired vegetation structure, punch holes and plant.
Spring	Spray weed regrowth before seed set at known locations and any new infestations discovered	Kikuyu, angled onion, snow drops, and arum lily Agapanthus,	All zones	Spot spray very carefully to avoid seedling damage with Esteem™. Use at the rate appropriate to weed and use relevant PPE (see label)
Spring / Summer	Monitoring – refer to pg 25		All zones	3-4 months following planting monitor sites for plant loss and high threat weed cover
	Order plants	See species list	All zones	Order plants for replacement planting if required

Ongoing – 2015 onwards				
Season	Activity	Species	Sites	Method
Summer/ Autumn	Pest animal monitoring	Rabbits and wallabies	All zones	Spotlight count over 3 successive nights
Autumn/ Winter	Site preparation for replacement planting if required		All zones	Spray 400mm diameter spots at the required density with Roundup Biactive™. Use at the rate appropriate and use relevant PPE (see label)
	Plant tubes and guard if required		All zones	Distribute seedlings at locations to achieve the desired vegetation structure, punch holes and plant.
Ongoing	Spray new and emerging weeds before seed set	All high threat weeds	All zones	Spot spray very carefully to avoid seedling damage with appropriate herbicide. Use at the rate appropriate to weed and use relevant PPE (see label).
Spring / Summer	Monitoring – refer to pg 25		All zones	3-4 months following planting monitor sites for plant loss and high threat weed cover
	Order plants	See species list	All zones	Order plants for replacement planting if required

Area 2 – TPZ 2

Terrestrial planting zone 2A



Overview of area 2 planting and bund providing screening for the neighbouring house to the SW.

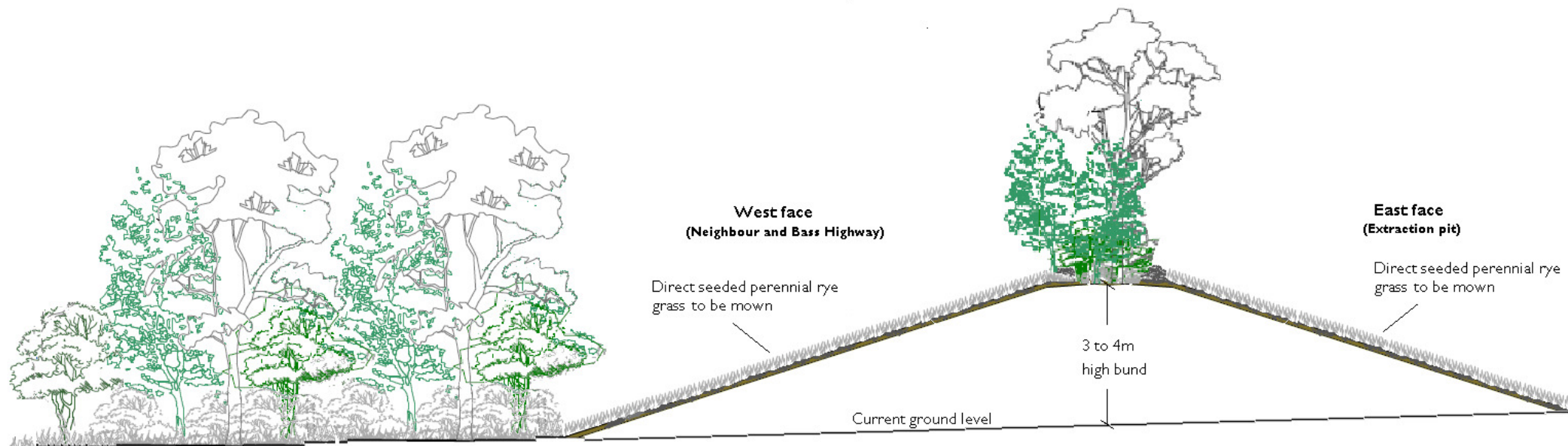
TPZ 2 Description

TPZ 2 is a small area of agricultural grazing land in the south west corner of WAI488. Being adjacent to TPZ 1 it has the same aspect and would have originally been covered by Lowland Forest (DEPI, 2013a)

TPZ 2 Purpose

The primary purpose of this planting is to provide visual, noise and dust screening for the neighbouring house and property to the south west. It will also provide bund stability.

TPZ 2A cross section



Cross section of TPZ 2A planting and bund showing structure of mature vegetation (10-15 years after planting)

The majority of the TPZ 2A planting will be on the west side of the bund. A smaller strip will be planted along the top of the bund to increase the screening height. Large trees will be included in this planting which is very similar in structure to TPZ 1B, C, D & E, and will reach a height of approximately 15m when mature. The slopes of the bund will be sown with perennial rye seed, and will be maintained by slashing.

TPZ 2 Site preparation

It will be several years before the quarry extraction operations reaches the south - west corner of the extraction pit. The landholder, for whom the screening is being constructed, has indicated their preference for the construction of the bund and planting of TPZ 2A to be delayed until they begin to see quarrying activity from their residence / property (approximately 3 years).

There were no high threat invasive weeds observed to be present during the site visit on 28/8/2013. However, the area should still be maintained (through current land management of grazing and weed control) prior to planting to ensure none establish.

Once the bund has been constructed perennial rye grass seed will be sown over the earthworks. The bund should be established so that at least one winter occurs before the tube stock planting. This will ensure soil moisture levels will be suitable for planting. Once high moisture levels are achieved in Autumn of the year the planting is to take place, spots of approximately 400mm in diameter will be sprayed at the required density west and at the top of the bund. When the spot sprayed grass has 'yellowed off' seedlings will be planted using Hamilton tree planter punches. Species will be laid out to achieve the vegetation structure outlined in the TPZ 2 cross section. If browsing animals are present (rabbits and wallabies) appropriate tree guards will be installed over the plants.

For more detail refer to the TPZ 2 site management table.

TPZ 2 Species list

Species	Common Name	2A (m2) 4660	Description
<i>Eucalyptus obliqua</i>	Messmate Stringybark	15	Tree - overstorey 20m
<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum		Tree - overstorey 20m
<i>Eucalyptus radiata</i> s.l.	Narrow-leaf Peppermint	20	Tree - overstorey 20m
<i>Eucalyptus viminalis</i>	Manna gum	10	Tree - overstorey 20m
<i>Acacia dealbata</i>	Silver wattle		Understorey tree 15m
<i>Acacia mearnsii</i>	Black wattle	15	Understorey tree 15m
<i>Acacia melanoxylon</i>	Blackwood	15	Understorey tree 15m
<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	Sweet Bursaria	15	Tall Shrub 5-7m tall
<i>Melaleuca ericifolia</i>	Swamp paperbark		Tall Shrub 5-7m tall
<i>Melaleuca squarrosa</i>	Scented paperbark		Tall Shrub 5-7m tall
<i>Mersin howittiana</i>	Mutton-wood		Tall Shrub 5-7m tall
<i>Pomaderris aspera</i>	Hazel Pomaderris		Tall Shrub 5-7m tall
<i>Acacia mucronata</i> subsp. <i>longifolia</i>	Narrow-leaf Wattle	30	Medium Shrub 1-5m tall
<i>Acacia paradoxa</i>	Hedge wattle	20	Medium Shrub 1-5m tall
<i>Acacia stricta</i>	Hop Wattle	30	Medium Shrub 1-5m tall
<i>Acacia suaveolens</i>	Sweet Wattle	30	Medium Shrub 1-5m tall
<i>Acacia verticillata</i>	Prickly Moses	15	Medium Shrub 1-5m tall
<i>Cassinia aculeata</i>	Common Cassinia	5	Medium Shrub 1-5m tall
<i>Coprosma quadrifida</i>	Prickly currant bush	30	Medium Shrub 1-5m tall
<i>Indigofera australis</i>	Austral Indigo	20	Medium Shrub 1-5m tall
<i>Leptospermum continentale</i>	Prickly Tea-tree	30	Medium Shrub 1-5m tall
<i>Olearia lirata</i>	Snowy Daisy-bush		Medium Shrub 1-5m tall
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	20	Medium Shrub 1-5m tall
<i>Polyscias sambucifolia</i>	Elderberry Panax		Medium Shrub 1-5m tall
<i>Solanum aviculare</i>	Kangaroo Apple	30	Medium Shrub 1-5m tall
<i>Viminaria juncea</i>	Golden Spray	20	Medium Shrub 1-5m tall
<i>Goodenia ovata</i>	Hop Goodenia	60	Small Shrub 1m tall
<i>Pultenaea daphnoides</i>	Large leaf bush pea	30	Small Shrub 1m tall
<i>Tetrarrhena juncea</i>	Forest Wire-grass		Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Carex appressa</i>	Tall sedge		Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Dianella tasmanica</i>	Tasman Flax-lily	60	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Gahnia sieberiana</i>	Red fruit saw sedge		Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Juncus australis</i>	Austral rush		Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Dianella revoluta</i>	Black anther flax lily	60	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	60	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Poa labillardieri</i>	Common Tussock-grass	60	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Clematis aristata</i>	Mountain clematis		Scrambler / climber
<i>Pandorea pandorana</i> subsp. <i>Pandora</i>	Wonga vine		Scrambler / climber
		700	

Note: final species list will be determined by the availability of species from nurseries. If, for example, certain medium shrub species are not available, numbers of available medium shrubs will be increased accordingly.

TPZ 2 Management

Ongoing management of TPZ 2 plantings is essential if the plantings are to achieve the desired structure and purpose. High threat weeds and browsing animals are the biggest threats.

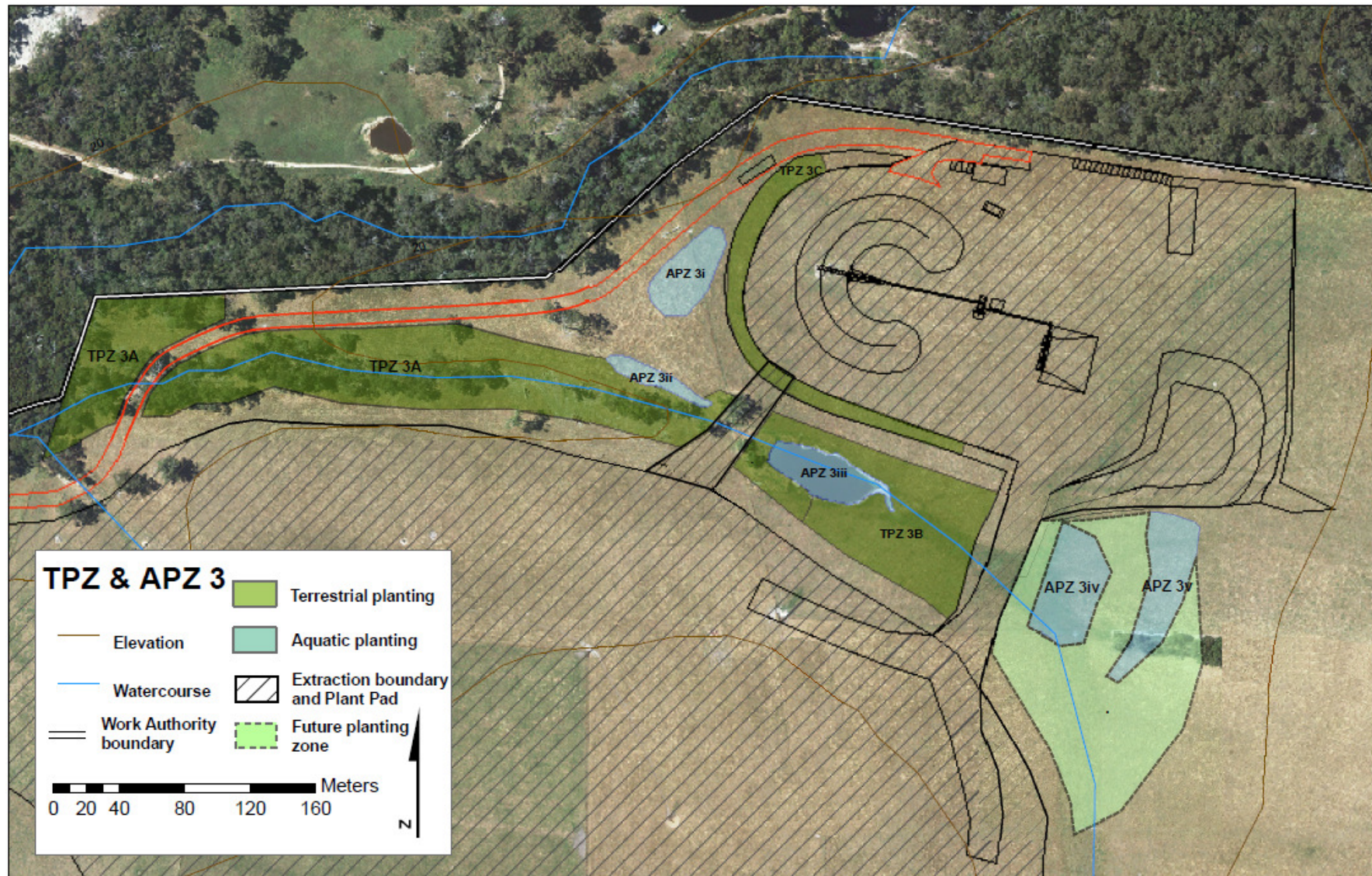
Years prior to planting				
Season	Activity	Species	Sites	Method
Ongoing	Spray new and emerging high threat weeds before seed set	New and emerging	TPZ 2A	Spot spray with appropriate herbicide (eg. Esteem™ if thistle or broad leaf, Roundup™ if grass). Use at the rate appropriate to weed and use relevant PPE (see label).
	Order plants and seed if planting in the following year	See species list	TPZ 2A	

Planting year				
Season	Activity	Species	Sites	Method
Summer/ Autumn	Pest animal monitoring	Rabbits and wallabies	TPZ 2A	Spotlight count over 3 successive nights
Autumn/ Winter	Site preparation		TPZ 2A	Spray 400mm diameter spots in the planting areas at the required density with Roundup Biactive™. Use at the rate appropriate and use relevant PPE (see label)
Autumn/ Winter cont.	Plant tubes and guard if required		TPZ 2A	Distribute seedlings at locations to achieve the desired vegetation structure, punch holes and plant.
Post bund construc- tion	Sow grass seed	Perennial rye <i>Lolium perenne</i>	TPZ 2A	Broadcast grass seed to ensure even coverage and rake soil over seed.
Ongoing	Spray new and emerging weeds before seed set	All high threat weeds	TPZ 2A	Spot spray very carefully to avoid seedling damage with appropriate herbicide (eg. Esteem™ if thistle or broad leaf, Roundup™ if grass). Use at the rate appropriate to weed and use relevant PPE (see label).
Spring / Summer	Monitoring – refer to pg 25		TPZ 2A	3-4 months following planting monitor sites for plant loss and high threat weed cover
	Order plants	See species list	TPZ 2A	Order plants for replacement planting if required

Ongoing				
Season	Activity	Species	Sites	Method
Summer/ Autumn	Pest animal monitoring	Rabbits and wallabies	TPZ 2A	Spotlight count over 3 successive nights
Autumn/ Winter	Slash slopes		TPZ 2A	Slash grass on slopes
	Site preparation for replacement planting if required		TPZ 2A	Spray 400mm diameter spots at the required density with Roundup Biactive™. Use at the rate appropriate and use relevant PPE (see label)
	Plant tubes and guard if required		TPZ 2A	Distribute seedlings at locations to achieve the desired vegetation structure, punch holes and plant.
Ongoing	Spray new and emerging weeds before seed set	All high threat weeds	TPZ 2A	Spot spray very carefully to avoid seedling and native grass damage with appropriate herbicide (eg. Esteem™ if thistle or broad leaf, Roundup™ if grass). Use at the rate appropriate to weed and use relevant PPE (see label).
Spring / Summer	Slash slopes		TPZ 2A	Slash grass on slopes
	Monitoring – refer to pg 25		TPZ 2A	3-4 months following planting monitor sites for plant loss and high threat weed cover
	Order plants	See species list	TPZ 2A	Order plants for replacement planting if required

Area 3 – TPZ 3

Terrestrial planting Zones 3A, B, and C



Overview of area 3 including plantings in and around drainage line, dams, and screening around hardstand area (including plant pad).

TPZ 3 Description

This planting zone encompasses a first order (Melbourne Water, 2013) eroding drainage line (Melbourne Water Waterway 3840), an existing farm dam, and proposed sediment ponds and bio-retention basin to manage water run off from the hardstand area (including plant pad), the acoustic wall and bund around the hard stand, and a large majority of the scattered mature trees within the drainage line.

Waterway 3840 is deeply incised where it leaves the WAI 488 boundary. Above the existing farm dam the waterway is defined only by a slight waterlogged depression in the grazing paddock. During a site visit on the 10th of October 2013, Pat Condina noted the greatest environmental impact is unrestricted cattle access to waterway 3840, which has resulted in extensive bare bank areas. This has caused minor slumping and erosion which is continuing, but can be halted and reversed through the proposed restoration works (additional comments can be found in Appedix A).

Although the area is mapped as once supporting lowland forest (DEPI, 2013a), as it follows a waterway it would have elements of a Riparian Forest / Damp Forest species mix in the steeper sections (TPZ3A), and Swamp Scrub / Riparian Scrub elements in the flatter boggy sections (TPZ3B). This is supported by the plant species found in the adjacent Deep and Colbert creeks (Kelly, 2013).

TPZ 3 Purpose

TPZ 3A and B are designed to encourage natural regeneration, protect and enhance the waterway and scattered large old trees, and to stabilise the access road crossings. These plantings will also have the added benefit of improving water quality and reducing noise from the access road. The revegetation will be no less than 10m from the top of bank, with an average total width of 20-30 metres being achieved along the length of the site. The revegetation will be protected by a farm fence erected on the southern and northern boundaries of TPZ 3A & B, which can be upgraded to exclude wallabies if they are deemed a threat to plant establishment. TPZ 3C is designed to screen the 4m high acoustic wall around the hard stand, as well as stabilise the bund slope.



Deeply incised lower section of drainage line in TPZ 3A 100m upstream the banks begin to flatten out

TPZ 3A Planting cross section including in stream

The section of drainage line in TPZ 3A has been eroding for some time. The planting density on the banks and drainage line crossings will be 50% greater than a standard TPZ planting, consisting of grasses, sedges and rushes with fibrous root systems. This will assist with stabilising the banks and earth works, and improving water quality. Melbourne Water's 'Waterway Corridors, Guidelines for greenfield development areas within the Port Phillip and Westernport Region' has been used in the design of planting zones in TPZ 3; the average planting setback from the bank (in excess of 20m) is greater than the minimum setback guidelines required by Melbourne Water (20m), and the planting zones encompass the vast majority of site specific values (scattered large old trees) (Melbourne Water, 2013).

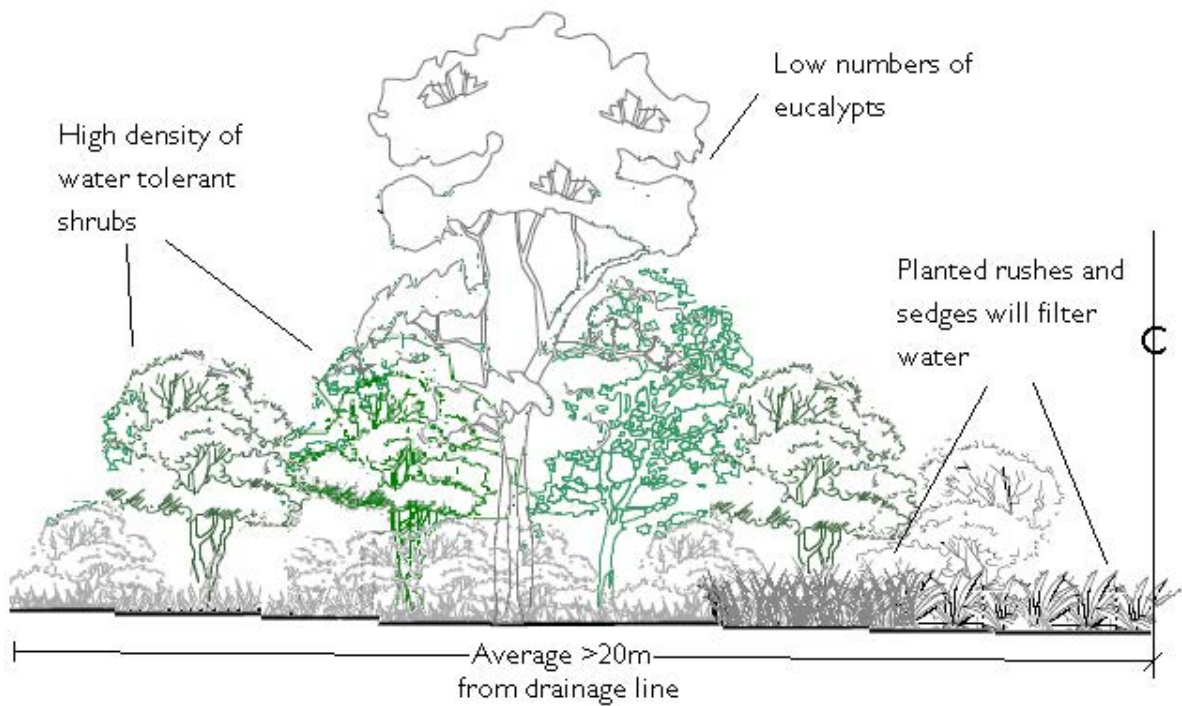
The understorey planting will be more diverse than TPZ 1 and 2, but the structure and overall height will be similar.



Cross section from drainage line centre of TPZ 3A planting showing structure of mature vegetation (10-15 years after planting).

TPZ 3B cross section

The species to be planted in TPZ 3B will be consistent with a Swamp Scrub / Riparian Scrub vegetation community as this area is much flatter and wetter area than TPZ3A,. The planting will be dominated by water tolerant shrubs with a small number of *Eucalyptus ovata* (Swamp Gum). *Melaleuca ericifolia* (Swamp Paperbark) numbers have been kept low as they sucker and can dominate and exclude grasses that will filter the water. A dense strip of grasses, sedges and rushes will be planted either side of the drainage line to assist in removing sediment from the water.

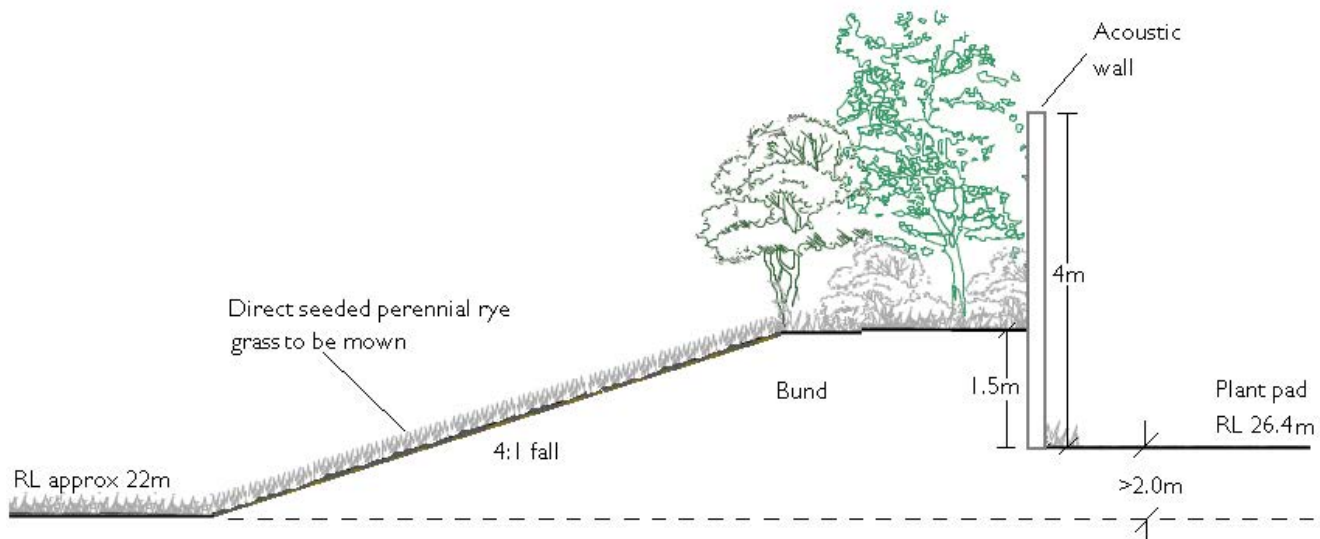


Cross section of TPZ 3B planting showing structure of mature vegetation (10-15 years after planting) dominated by water tolerant shrubs (5-7m at maturity).



TPZ 3B is much flatter and waterlogged, and leads in to Aquatic Planting Zone 3iii (see TPZ 3 map). TPZ 3B will be approximately 60m wide at the upstream end of the site.

TPZ 3C Cross section



Cross section of TPZ 3C planting showing structure of mature woody vegetation (5-10 years after planting) and grass (one year after planting)

Planting TPZ 3C will be restricted to shrubby species that will reach a height at maturity of 5m. This will effectively screen the 4 m high acoustic wall and not compromise the structure of the bund. Perennial rye grass seed will be sown over the bund as soon as it is constructed.

TPZ 3 Site preparation

Planting will commence (approximately winter / spring 2014) once the earthworks for the hardstand (including plant pad), access roads and water treatment works have been completed. This will allow enough time for nurseries to propagate the required variety and number of plants.

Several high threat weeds were noted during the site visit on 28/8/2013, but they were individual plants and not infestations. These will be controlled prior to planting, and include blackberry, briar rose, sweet pittosporum, willow, and spear thistle.

When the bund in TPZ 3C has been constructed perennial rye grass seed will be sown over the earthworks. The bund should be established so that at least one winter occurs before the tube stock planting. This will ensure soil moisture levels will be suitable for planting.

Once high moisture levels are achieved in late Autumn 2014, spots of approximately 400mm in diameter will be sprayed at the required density within the TPZ 3 zones. When the spot sprayed grass has 'yellowed off' seedlings will be planted using Hamilton tree planter punches. Species will be laid out to achieve the vegetation structure outlined in the TPZ 3 cross sections. If browsing animals are present (rabbits and wallabies) appropriate tree guards will be installed over the plants.

For more detail refer to the TPZ 3 site management table

TPZ 3 Species list and numbers

Species	Common Name	3A TOB (m2) 12131.25	3A bank (m2) 4043.75	3B TOB (m2) 6345	3B bank (m2) 2115	3C screen area 3250	Sub Total	Description
<i>Eucalyptus obliqua</i>	Messmate Stringybark	100					100	Tree - overstorey 20m
<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum	40		50			90	Tree - overstorey 20m
<i>Eucalyptus radiata</i> s.l.	Narrow-leaf Peppermint	100					100	Tree - overstorey 20m
<i>Eucalyptus viminalis</i>	Manna gum	100					100	Tree - overstorey 20m
<i>Acacia dealbata</i>	Silver wattle						0	Understorey tree 15m
<i>Acacia mearnsii</i>	Black wattle						0	Understorey tree 15m
<i>Acacia melanoxylon</i>	Blackwood	250					250	Understorey tree 15m
<i>Bursaria spinosa</i> subsp. <i>spinosa</i>	Sweet Bursaria	50				25	75	Tall Shrub 5-7m tall
<i>Melaleuca ericifolia</i>	Swamp paperbark	100	200	300			600	Tall Shrub 5-7m tall
<i>Melaleuca squarrosa</i>	Scented paperbark		50	200	200		450	Tall Shrub 5-7m tall
<i>Mersin howittiana</i>	Mutton-wood	80					80	Tall Shrub 5-7m tall
<i>Pomaderris aspera</i>	Hazel Pomaderris	80					80	Tall Shrub 5-7m tall
<i>Acacia mucronata</i> subsp. <i>longifolia</i>	Narrow-leaf Wattle	100					100	Medium Shrub 1-5m tall
<i>Acacia paradoxa</i>	Hedge wattle					25	25	Medium Shrub 1-5m tall
<i>Acacia stricta</i>	Hop Wattle	100				25	125	Medium Shrub 1-5m tall
<i>Acacia suaveolens</i>	Sweet Wattle	100					100	Medium Shrub 1-5m tall
<i>Acacia verticillata</i>	Prickly Moses	100				25	125	Medium Shrub 1-5m tall
<i>Cassinia aculeata</i>	Common Cassinia	100		100			200	Medium Shrub 1-5m tall
<i>Coprosma quadrifida</i>	Prickly currant bush	80					80	Medium Shrub 1-5m tall
<i>Indigofera australis</i>	Austral Indigo	80		100		25	205	Medium Shrub 1-5m tall
<i>Leptospermum continentale</i>	Prickly Tea-tree	150		100		25	275	Medium Shrub 1-5m tall
<i>Olearia lirata</i>	Snowy Daisy-bush	150		200			350	Medium Shrub 1-5m tall
<i>Ozothamnus ferrugineus</i>	Tree Everlasting	150		100			250	Medium Shrub 1-5m tall
<i>Polyscias sambucifolia</i>	Elderberry Panax	50					50	Medium Shrub 1-5m tall
<i>Solanum aviculare</i>	Kangaroo Apple	100					100	Medium Shrub 1-5m tall
<i>Viminaria juncea</i>	Golden Spray	50		50		15	115	Medium Shrub 1-5m tall
<i>Goodenia ovata</i>	Hop Goodenia	200		100		55	355	Small Shrub 1m tall
<i>Pultenaea daphnoides</i>	Large leaf bush pea	80					80	Small Shrub 1m tall
<i>Tetrarrhena juncea</i>	Forest Wire-grass	50					50	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Carex appressa</i>	Tall sedge	150	220	200	50		620	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Dianella tasmanica</i>	Tasman Flax-lily	150	200	50	50	55	505	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Gahnia sieberiana</i>	Red fruit saw sedge	150	200	50	50		450	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Juncus australis</i>	Austral rush		200	100	50		350	Large non Tufted Graminoid (grasses & grass-like > 1m tall)
<i>Dianella revoluta</i>	Black anther flax lily	150	200	50	50		450	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	150	250	50	80	65	595	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Poa labillardieri</i>	Common Tussock-grass	150	300	100	100		650	Medium Tufted Graminoid (grasses & grass-like < 1m tall)
<i>Clematis aristata</i>	Mountain clematis	100					100	Scrambler / climber
<i>Pandorea pandorana</i> subsp. <i>Pandora</i>	Wonga vine	100					100	Scrambler / climber
		3640	1820	1900	630	340		

Note: final species list will be determined by the availability of species from nurseries. If, for example, certain medium shrub species are not available, numbers of available medium shrubs will be increased accordingly.

TPZ 3 Management

Ongoing management of TPZ 3 plantings is essential if the plantings are to achieve the desired structure and purpose. High threat weeds and browsing animals are the biggest threats.

Year one - 2013				
Season	Activity	Species	Sites	Method
Spring/ summer	Spray weeds before seed set at known locations	Blackberry, briar rose, spear thistle	3A	Spot spray with Esteem™. Use at the rate appropriate to weed and use relevant PPE (see label)
		Sweet pittosporum		Cut off just above ground level and immediately paint stump with 50% Roundup Biactive™ 50% water mix.
		Willow	3 B	Drill and fill around base of tree with 50% Roundup Biactive™ 50% water mix
	Order plants	See species list	All zones	

Year two - 2014				
Season	Activity	Species	Sites	Method
Summer/ Autumn	Pest animal monitoring	Rabbits and wallabies	3A	Spotlight count over 3 successive nights
	Weed control	Willow	3B	Once head of tree has died, cut off at bass and paint stump with 50% Roundup Biactive™ 50% water mix. Pile up and burn head.
	Fencing		3A and B	Erect farm fencing on the N and S frontages of waterway 3840 when the ground is soft enough
Autumn/ Winter	Site preparation		All zones	Spray 400mm diameter spots in the planting areas at the required density with Roundup Biactive™. Use at the rate appropriate and use relevant PPE (see label)
	Plant tubes and guard if required		All zones	Distribute seedlings at locations to achieve the desired vegetation structure, punch holes and plant.
Post bund constru- ction	Sow grass seed	Perennial rye <i>Lolium perenne</i>	3C	Broadcast grass seed to ensure even coverage and rake soil over seed.
Ongoing	Spray new and emerging weeds before seed set	All high threat weeds	All zones	Spot spray very carefully to avoid seedling damage with appropriate herbicide. Use at the rate appropriate to weed and use relevant PPE (see label).
Spring / Summer	Monitoring – refer to pg 25		All zones	3-4 months following planting monitor sites for plant loss and high threat weed cover
	Order plants	See species list	All zones	Order plants for replacement planting if required

Year three – 2015 onwards				
Season	Activity	Species	Sites	Method
Summer/ Autumn	Pest animal monitoring	Rabbits and wallabies	All zones	Spotlight count over 3 successive nights
Autumn/ Winter	Slash slopes		3C	Slash grass on slopes
	Site preparation for replacement planting if required Plant tubes and guard if required		All zones All zones	Spray 400mm diameter spots at the required density with Roundup Biactive™. Use at the rate appropriate and use relevant PPE (see label) Distribute seedlings at locations to achieve the desired vegetation structure, punch holes and plant.
Ongoing	Spray new and emerging weeds before seed set	All high threat weeds	All zones	Spot spray very carefully to avoid seedling and native grass damage with appropriate herbicide. Use at the rate appropriate to weed and use relevant PPE (see label).
Spring / Summer	Slash slopes		3C	Slash grass on slopes
	Monitoring – refer to pg 25		All zones	3-4 months following planting monitor sites for plant loss and high threat weed cover
	Order plants	See species list	All zones	Order plants for replacement planting if required

General TPZ considerations

TPZ densities

High density revegetation reduces need for supplementary planting as well as weed cover, and therefore the amount of weed control required. As such the density of plantings is 50% greater than the minimum recommended by DEPI revegetation standards (DSE, 2006)

Seed and tube stock providence and supply

There are a variety of nurseries in the region that specialise in growing indigenous plants from locally sourced seed. Tube stock for all plantings will be sourced from these nurseries, and grown from seed collected locally.

Monitoring

The first round of planting zone monitoring will be undertaken 3-4 months after the initial planting. Once the vegetation is established monitoring will then take place on an annual basis.

Monitoring of plant density and high threat weed cover will be through randomly sampling 5% of each TPZ using 5x5m quadrats (with a minimum of at least three per TPZ). Within each quadrat the number of healthy indigenous plants will be counted, and the cover of high threat weeds will be estimated. The sampling results will be extrapolated over the zone area.

If plant densities drop below 85% then replacement planting will take place. If high threat weed cover increases above 5%, annual weed control measures will be revised by the land manager and action taken to ensure high threat weeds remain below 5% cover.

A qualitative survey will also be undertaken on an annual basis. This is to ensure that the structure of the planting is consistent throughout the planting zone. If overall plant density is acceptable, but localised areas of high plant losses are present, replacement planting will occur. Infestations of high threat weeds will be recorded and locations captured using a GPS to aid targeted control works.

Reporting

Results and recommendations from the monitoring will be summarised in a standard reporting template to allow site condition comparisons over time. Dandy Pre Mix Quarries will keep records of all the monitoring results.

Aquatic planting zones 3i, ii, iii, iv, and v

APZ 3 Description

APZ 3i and 3v are to be developed as sediment ponds for the treatment of water from the vehicle wash down area and the sand stockpile area. APZ 3i will be constructed first so as to trap any sediment from water run off during the development of the hardstand area. APZ 3iv will be a storage dam above the existing farm dam APZ 3iii. The overflow all of from these water bodies will flow through the bio-retention pond APZ 3ii, and finally into the drainage line.

Wetland Treatment Site	Approximate Wetland Area m2*
3i North Sediment pond	1000
3ii Bio-retention Basin	200
3iii Existing online farm dam	1540
3iv North Storage dam	3000
3v North East sediment pond	4000

* final size will be determined once wetlands are constructed

APZ 3 Purpose

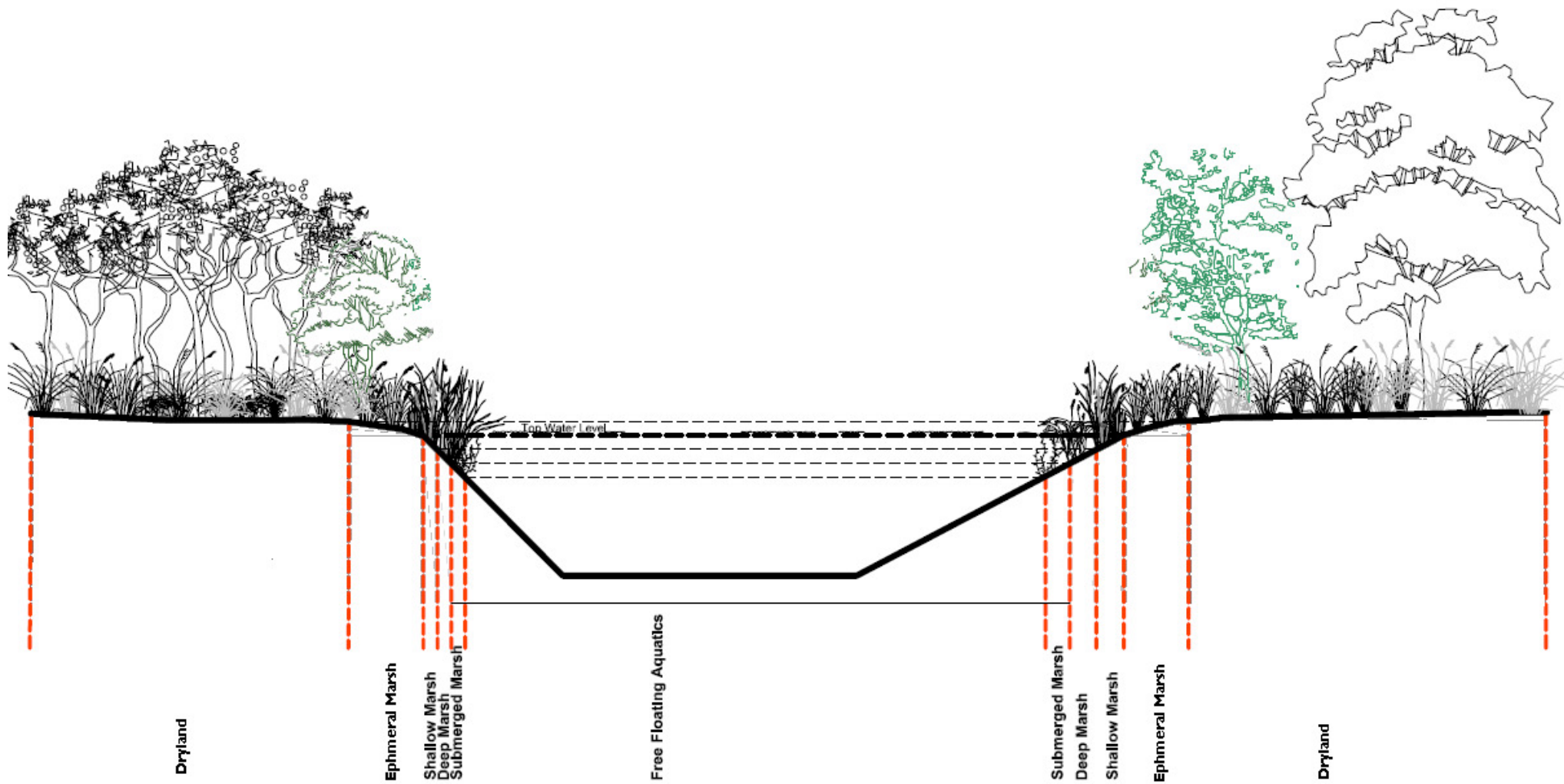
The primary purpose of the aquatic plantings is to filter sediment and nutrients from stormwater before it flows into the drainage line. The plantings will also protect the edges of the water body from eroding, and provide habitat for wading birds, frogs, invertebrates and possibly fish. Please refer to Appendix B for more detail on the benefit of aquatic plantings.



Looking west over the existing dam and APZ 3iii.

APZ 3 Cross Section

Example of a steep sided wetland, with the location of aquatic planting zones illustrated.



APZ 3 Site preparation and planting

In 2006 Bass Coast Landcare Network commissioned a report titled 'Guidelines for Dam Restoration in the Bass Coast' (Osler, 2006). Site preparation, planting, and maintenance will be undertaken following the guidelines outlined in the report and summarised below;

In order to sustainably establish and manage indigenous aquatic vegetation it is crucial to eradicate and suppress certain key weeds through the timely application of appropriate herbicides, monitoring and follow up maintenance. Weed control will be performed by contractors with a sound knowledge of aquatic plant identification, which allows them to target weeds before they get out of control and to retain any natural regeneration of indigenous species. Weed control will be achieved through a combination of hand weeding in sensitive areas or in water, and the careful use of specific herbicides on the wetland fringe to treat particular groups of weeds such as grasses or broad-leaved herbs.

The correct timing of planting of aquatic and semi-aquatic species is crucial to maximise successful establishment. The optimal time for planting is just before a species enters its optimal growing season. The growing season of wetland plants varies considerably. In southern Australia plants which grow on the fringe of wetlands often grow in cool, moist seasons when there is plenty of moisture available in this zone, while many truly aquatic species that occur in deeper water grow most actively in warmer seasons. For a range of reasons deep water is a hostile environment for establishing young plants. Large rhizomatous sedge species such as Jointed twig rush (*Baumea articulata*) and Tall spike sedge (*Eleocharis sphacelata*) should be planted at the shallow edge of their preferred habitat, i.e. in 200-300 mm of water. Once well established in the shallows these plants will grow out into deeper water.

A common cause of failure of establishment of some wetland species is that they are destroyed while still small by grazing waterbirds. If plants can be protected through the first growing season even the most palatable species can become established enough to survive the destructive feeding habits of birds such as Purple Swamp Hens or Black Swans. Protection of young plants is particularly crucial in constructed wetlands close to areas where there are established populations of waterbirds. For these highly palatable species protection is achieved by suspending enclosures around young plants made of netting. This netting is arranged so that plants have space to grow for a full growing season. Netted areas are regularly inspected for entangled or trapped wildlife.

APZ 3 Species list and densities

The following table has been supplied by Pat Condina along with information given in Appendix B.

Table 2 Grantville Quarry Treatment Wetland Ponds Schedule of recommended wetland plants subject to availability, advice of suppliers, and inclusion of locally occurring native aquatics			
Zone Code	Zone Description	Recommended Plants	Plants/ Square Metre
A. Dryland	+0.3m above NTWL to 1 year ARI flood level. Riparian zone native vegetation subject to infrequent ephemeral inundation SHADE ESTABLISHMENT IS A CRITICAL CONSIDERATION FOR SELECTION AND DENSITY OF PLANTINGS ESPECIALLY AROUND WATER EDGES.	The following could form basis of Dryland plantings of Lowland Forest and Herb Rich Foothill Forest species with preferential selection of locally indigenous species if available: Eucalyptus obliqua Eucalyptus ovata Acacia melanoxylon Leptospermum lanigerum Melaleuca ericifolia Melaleuca squarrosa Dianella revoluta (b) Goodenia ovate (b) Lomandra longifolia Lomandra filiformis Microlaena stipoides Poa labillardieri Poa poiformis	0.2 for upper and middle storey species, 0.5 for shrubs and 6 for grasses, or as recommended by landscape architects.
1	Normal Top Water Level to +0.3 m above NTWL Ephemeral Marsh Grasses of moist soils and aquatic native vegetation subject to occasional inundation during high flows or capillary rise from edges of water body. Swamp Scrub species predominate. Some of these species (b) are also suitable for planting in the Bio retention Swale	Melaleuca ericifolia Poa labillardierei Poa poiformis Carex gaudichudiana Carex appressa (b) Carex fascicularis Gahnia radula Gahnia sieberiana Juncus procerus Juncus kraussi Juncus subsecundus Isolepis inundata Lomandra longifolia (b) Lepidosperma laterale Marsilea drummondii Triglochin striatum	0.5 for M. ericifolia and 6 for remainder. Species in bold forming 80% of zone total

Table 2 Grantville Quarry Treatment Wetland Ponds Schedule of recommended wetland plants subject to availability, advice of suppliers, and inclusion of locally occurring native aquatics			
Zone Code	Zone Description	Recommended Plants	Plants/ Square Metre
2	Depth from 0 to -0.2m. Shallow Marsh. Experiences frequent drying 1V:1:10 to 1V:8H Width ~ 2 m Some of these species (b) are also suitable for planting in the Bio retention Swale	Alisma plantago aquatic Bulboschoenus caldwellii Bulboschoenus medianus Baumea articulata Baumea arthropphylla Carex fascicularis Carex appressa Cyperus lucidus Crassula helmsii Eleocharis acuta Eleocharis pusilla Isolepis fluitans Juncus amabilis (b) Juncus holoschoenus Juncus flavidus (b) Myriophyllum crispatum Neopaxia australasica Restio tetraphyllus Schoenus lepidosperma Villarsia reniformis	6 Species in bold forming 80% of zone total. Subject to inclusion of any locally occurring species
3	Depth from -0.2 to -0.4m Marsh/Deep Marsh (emergent). Shrinks in extended dry period but does not dry up completely 1V:3H	Eleocharis sphacelata Schoenoplectus tabernaemontani Schoenoplectus pungens Triglochin procerum Vallisneria americana	4 Species in bold forming 80% of zone total
4	Depth from 0.4 m to 0.6 m. Deep Marsh (submerged)	Chara sp Nitella sp. Potamogeton ochreatus Triglochin procerum	2 Equal numbers of each
5	Depth from 0.6 to 1.1m Submerged macrophyte zone	Potamogeton ochreatus	1
6	Depth > 1.0m Open Water	No plantings recommended. The submerged marsh species will colonise these zones	0

Actual species numbers per APZ will be calculated using the densities outlined above once final APZ areas are known.

APZ 3 Management

Year one - 2013				
Season	Activity	Species	Sites	Method
Spring / summer	Order aquatic plants and collect and grow plants not supplied by nurseries	See species list above	All APZ's	Once all wetlands have been constructed, measure the area of APZ's and calculate species numbers.

Year two - 2014				
Season	Activity	Species	Sites	Method
Summer	Spray weeds before seed set within the planting zones, as well as a 1 m buffer above the Dryland zone	All exotic species	All APZ's	Spot spray with Roundup Biactive™. Take care to avoid any indigenous species. Use at the rate appropriate to weed and use relevant PPE (see label)
Early Spring	Spray weed regrowth before seed set within the planting zones, as well as a 1 m buffer above the Dryland zone	All exotic species	All APZ's	Spot spray with Roundup Biactive™. Take care to avoid any indigenous species. Use at the rate appropriate to weed and use relevant PPE (see label)
	Plant aquatic species	As per species list	All APZ's	Distribute seedlings at locations to achieve the desired vegetation structure, punch holes where required and plant.
	Net seedlings	Net species vulnerable to bird grazing	All APZ's	Arrange suspending netting over plants, allowing room for growth and ensuring there are no bird access points.
Ongoing	Check netting for wildlife entanglement		All APZ's	Designate staff working on site to check all netting during regular working duties and remove entangled wildlife on a daily basis.

Ongoing – 2015 onwards				
Season	Activity	Species	Sites	Method
Ongoing on a regular basis	Spray weeds before seed set within the planting zones, as well as a 1 m buffer above the Dryland zone	All high threat weeds	All APZ's	Spot spray with Roundup Biactive™ on a monthly basis. Use at the rate appropriate to weed and use relevant PPE (see label). Take care to avoid any indigenous species – hand weed where weeds are entangled with indigenous plants.
	Check netting for wildlife entanglement		All APZ's	Designate staff working on site to check all netting during regular working duties and remove entangled wildlife on a daily basis.
Spring / Summer	Remove netting		All APZ's	If netted plants are well established remove the netting.
	Harvest biomass	Any vigorous indigenous species that is reducing diversity	All APZ's	Slash and remove plant material where appropriate, or manually remove.

APZ 3 Plant stock providence and supply

There are a variety of nurseries in the region that specialise in growing indigenous plants from locally sourced seed. Some grow a limited range of aquatic plants, how ever many species can be sourced locally and propagated. There are two farm dams, one within the WAI488 and another north of the WAI488 on land owned by Dandy Pre Mix, that have a range of well established indigenous aquatic plants. These local dams would be ideal sources of a variety of species.



Summary

Dandy Pre Mix has taken care to develop a landscape and revegetation plan that enhances the biodiversity and aesthetic values of the site, and which can be considered best practice for developing a quarry. Once the revegetation takes place the plantings will greatly reduce sediment and nutrient load flowing into Deep Creek Western Port, enhance and stabilise the banks of the tributary of Deep Creek which runs through the WAI488 area, enhance wildlife habitat, as well as mitigate any dust and noise from the site. The ongoing monitoring and maintenance of the planting zones will ensure the revegetation establishes and continues to perform the functions for which it was designed.



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Appendix A

PAT CONDINA & ASSOCIATES

*Consultants in waterway, wetland and lake management
Water quality monitoring and assessment
Community consultation and education*

Mr Garry Cranny
Dandy Premix Quarries PL

11 October 2013

By Email
Cc Neil Craigie

Garry

Re: Current Stability of Tributary 3840 and Future Rehabilitation


Further to yesterday's inspection at the quarry development site at Grantville I take this opportunity to record the current stability of the 3840 Tributary to Deep Creek and comment of proposed rehabilitation measures.

Having inspected the tributary in periods with flow and no flow it is apparent that the greatest environmental impact is the unrestricted cattle access to date. The cattle cause both direct and indirect damage through access all along the tributary. They lead to many bare bank areas and prevent any regeneration of native vegetation. As a result the banks are subject to minor slumping and erosion by water – by direct rainfall, surface flow and channel flow.

While the bed has deepened considerably in the past, bed erosion is still active, and this is shown by a number of small drops of about 0.5 along the length of the tributary up to the farm dam. This deepening further de-stabilizes the banks and is the main cause of continuing minor bank slumping and the continuing loss of the isolated remnant eucalypts on the banks.

The degree of erosion of the sandy clay banks is reflected in the sand deposited in some parts of the bed and overall the tributary exports large amounts of sediment to Deep Creek.

Fortunately this degradation can be reversed through the works anticipated in conjunction with quarry development, and the waterway returned to a very good environmental condition with the creation of considerable native habitat. Specifically the following steps are required:

- 
1. Exclusion of cattle from the stream zone by erection of standard rural farm fence (6strand plain wire, pine posts 5 m apart). The fence will be erected on both sides, from 10 to 25metres from the edge of the waterway depending on physical constraints.
 2. The fenced area is to be extensively planted in accordance with the comprehensive revegetation plan prepared by Bass Coast Landcare Network.
 3. The need to create a new lower tributary crossing for the main access road site and to upgrade an existing crossing some 60 metres downstream of the existing farm dam presents an opportunity to design crossings which will create ponding upstream of these crossings and so stabilize the bed. Neil Craigie will advise as to crossing design optimization for such an outcome.

The following photos clearly illustrate the above assessment. This is an exciting opportunity for tributary rehabilitation. Along with the proposed water quality protection measures separately considered, these works will contribute significantly to protecting the values of the receiving waters of Deep Creek and Westernport Bay

Yours Sincerely

Pat Condina

Photo 1. 3/10/13 Upstream from the proposed lower crossing site. Note drop in bed at the log jam. Bed control/ stabilization is required



Photo 2. 3/10/13 Bare banks and minor slumping due to unrestricted cattle access



Photo 3 10/10/13. Sand deposits in bed of tributary illustrate magnitude of sediment transport



Photo 4. 10/10/12 Wombat hole in bank of tributary



Photo 5. 10/10/12 Current cattle access to waterway



Photo 6. 10/10/12 Continuing loss of isolated remnant eucalypts



Photo 7. 10/10/12 Existing upper crossing about 60 m downstream of farm dam. To be upgraded and used for internal sand transport.



Photo 8. 10/10/12 Tributary upstream of existing crossing and leading into farm dam, minor bed erosion



Appendix B

PAT CONDINA & ASSOCIATES

*Consultants in waterway, wetland and lake management
Water quality monitoring and assessment*

Mr Robbie Gray
By Email

24 September 2013

Dear Robbie

Re: Interim Treatment Wetlands Planting Schedule, Grantville Quarry

Further to our recent discussions I have prepared a schedule incorporating a range of aquatic plants which I consider are suitable for use in the treatment wetland pondages proposed for this site.

Healthy populations of water plants are essential for effective stormwater treatment. Apart from their value as aquatic habitat they:

- Take up nutrients from stormwater that would otherwise be available for algal productivity;
- Can be a visually attractive and interesting part of the aquatic system;
- Give the system a more natural, less artificial appearance;
- Protect the edges from erosion, and make level fluctuations less obvious;
- Provide food, shade and shelter to invertebrates and fish.

There is always the possibility that one or more species could grow in nuisance proportions (in particular some species of *Myriophyllum*, *Typha*, *Cyperus*, *Persicaria* and *Paspalum* so I have omitted these) but attention to monitoring and maintenance, and early control will prevent such conditions from arising. Depending on the rates of growth of aquatic species some harvesting may be required in future.

Wetland plantings are selected primarily for water treatment purposes, but other species should also be included for the purpose of increasing ecosystem diversity and landscape interest. Table 2 shows the preferred depth zones of a range of water plant we should include and gives an indication of planting density. In preparing the list reference has been made to Melbourne Water's Constructed Wetland Guidelines (2010), however other aquatic species suitable for wetland treatment, and adding to the overall habitat diversity of the site, have also been included.

You will note that I have not yet calculated the actual numbers required as the wetland areas are still not finalized. Table 1 shows current area estimates made both by yourself and Neil Craigie and even these are still subject to change. Over 20,000 plants could be required overall, allowing for future natural spread.

Table 1 Estimated Wetland Treatment Areas

Wetland Treatment Site	Total Wetland Area m2
3i North Sediment pond	1460 RG 1000 NC
3ii Bio-retention Basin	1615 RG 200 NC
3iii Existing online farm dam	1540 RG
3iv North Storage dam	2350 RG 3000 NC
3v North East sediment pond	2800 RG 4000 NC

The main purpose of the plants is their ability to provide treatment to incoming stormwater runoff from the site therefore perhaps 4 - 6 structural species are planted in large numbers while a further 10 or so species are planted to increase species, habitat and visual diversity. Preference is given to plants naturally occurring locally. The densities suggested form an initial minimum. It is expected that over the first two years, there will be natural spread to achieve an optimum density. Some further in-fill planting may then be required along with attention to the control of any weed invasion. Protection against damage by waterfowl may be necessary during the plant establishment phase.

It is suggest that the species marked in bold form about 80% of the total number of species for that zone, with approximately equal numbers of each; with a selection of about 10 or so other species comprising about 20% of the zone total, and again each species being about equally represented. An experienced aquatic plant contractor will mix the overall plants in each zone to obtain a pleasing landscape effect and furthermore will, even within a zone, be aware of plant depth preference and plant accordingly.

I will provide an updated list giving suggested species numbers once treatment zone areas are fixed for each wetland.

Yours Sincerely

Pat Condina

WA1488 – Dandy Premix Quarries Pty Ltd
1381-1395 Bass Highway, Grantville, VIC 3984

Work Plan Variation Application, January 2020

Surface Water Management Plan

Ambient Surface Water and Groundwater quality monitoring has been in place at the WA1488 site since late 2012 in accordance with the recommendations of Craigie (Drainage and Water Quality Management, May 2012) and JLCS (Hydrogeological Assessment, May 2012) and is proposed to continue to run for the lifetime of the sand extraction operations.

Surface water parameters have been monitored to those listed in Table 9 of the Craigie report and complimentary Groundwater monitoring has been conducted in accordance with the JLCS report.

It should be noted the Craigie report (May 2012) has been included as Appendix A of the Water Technology, 'Report WA1488 Grantville – Work Plan Variation Expansion of Sand Extraction Operations, Sand Washing & Dewatering Plant' of 12 December 2019, which builds on the earlier Craigie assessment and recommendations.

The frequency of Surface Water Quality Monitoring is directly reflective of seasonal changes and the occurrence of wet weather conditions (consistent and soaking rainfall events leading to surface water and tributary flows), that produce the dominant concern from a water quality viewpoint.

The prolonged drought prevailing throughout large tracts of Australia, which has extended to almost drought like dry conditions at Grantville in South West Gippsland, has made it difficult to be 'hard and fast' about our Surface Water monitoring program. We have been forced to more 'opportunistic' to take advantage of the necessary wet weather conditions. However, we have consistently managed to obtain four (4) sets of monitoring results per year and this will continue to be our minimum approach to the sampling and analysis of Surface Water Quality.

Whenever these ambient conditions exist, Dandy Premix takes the opportunity to monitor, in addition to the scheduled three monthly intervals of February, March, August and November. In the earlier five years of the quarry site, i.e. 2012 to 2017, monitoring runs were undertaken as frequently as possible to better define wet weather runoff responses and water quality behavior.

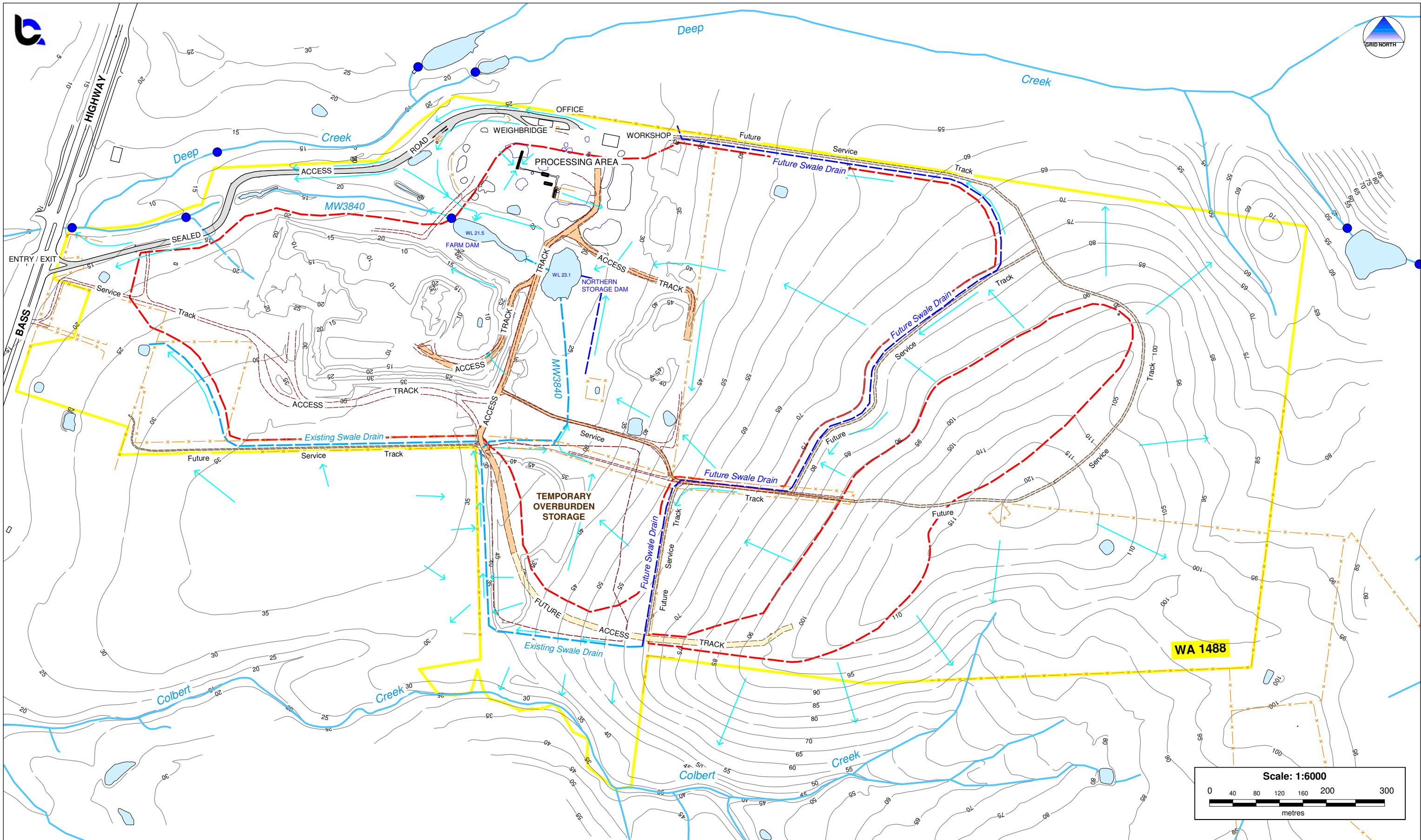
Recent advice received from Pat Condina and Associates, Water Quality Monitoring and Assessment, in association and support of Neil M Craigie, recommends we cease laboratory testing of WA1488 Surface Water for Heavy Metals and Total Petroleum Hydrocarbons as there has not been any detected presence of these in the substantial body of sampling results data achieved to date.

We propose to continue to analyse for all the remaining parameters from the Surface Water samples taken and equally, to maintain the same sampling location regime, i.e. eight (8) Sampling Sites/Locations.

Groundwater does not present the same monitoring constraints. We will continue to monitor each of the current eight (8) Groundwater Investigation Bores on the site, on a three (3) monthly scheduled basis.

Dandy Premix Quarries P/L, Grantville...Drainage and Water Quality Management

TABLE 9 Surface Water Water Quality Test Results-WA 1488, Grantville														
Site	Date	Temp	Conduct- ivity (uS/cm)	pH	DO (mg/L)	Turbidity (NTU)	Suspended Solids (mg/L)	TKN (mg/L)	Nitrate N (mg/L)	Nitrite N (mg/L)	TN (mg/L)	TP (mg/L)	TPH total petroleum hydrocarbon (ug/L)s	Heavy Metal Scan (ugL)
The outlet pit of the North Storage Dam														
The outlet pit of the bioretention basin														
The tributary at the western property boundary														
Deep Creek just upstream of the tributary confluence														
Deep Creek at the Bass Highway														
	Mth 2													
	Mth 3													
	Mth 4													
	Mth 5													
	Mth 6													
	Mth 7													
	Mth 8													
	Mth 9													
	Mth 10													
	Mth 11													
	Mth 12													



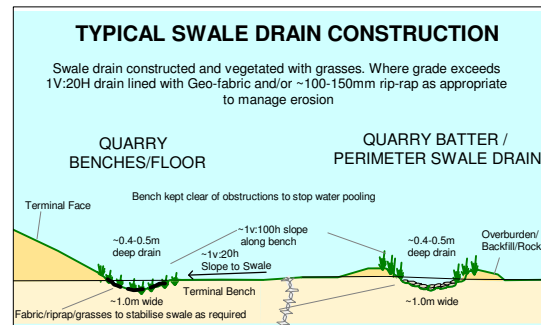
LEGEND

- WORK AUTHORITY BOUNDARY
- EXTRACTION BOUNDARY
- SURFACE WATER MONITORING LOCATION
- CURRENT/FUTURE ROADS / TRACKS
- EXISTING WATERWAYS / SWALE DRAINS
- FUTURE SWALE DRAINS
- SURFACE FLOW

Topographical Mapping Landair Surveys July 2019
Contour Interval 5m RL

MAP ILLUSTRATED AS AT JANUARY 2020

SWALE DRAINS WILL BE ESTABLISHED
AROUND EXTRACTION PERIMETER
AS DEVELOPMENT OCCURS



Dandy PRE MIX

BCA CONSULTING EARTH RESOURCES

For DANDY PREMIX QUARRIES P / L

Drawing: A3 - 1910 : Rev 0 Author: IW, CT

Project No: D10-003

Fig1_WaterMmentPlan_0120.WOR

Date: 8/01/2020

Appendix 1

Extractive Industry Work Authority No: 1488

Grantville Sand Pit, GRANTVILLE


SURFACE WATER MANAGEMENT PLAN

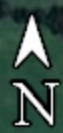
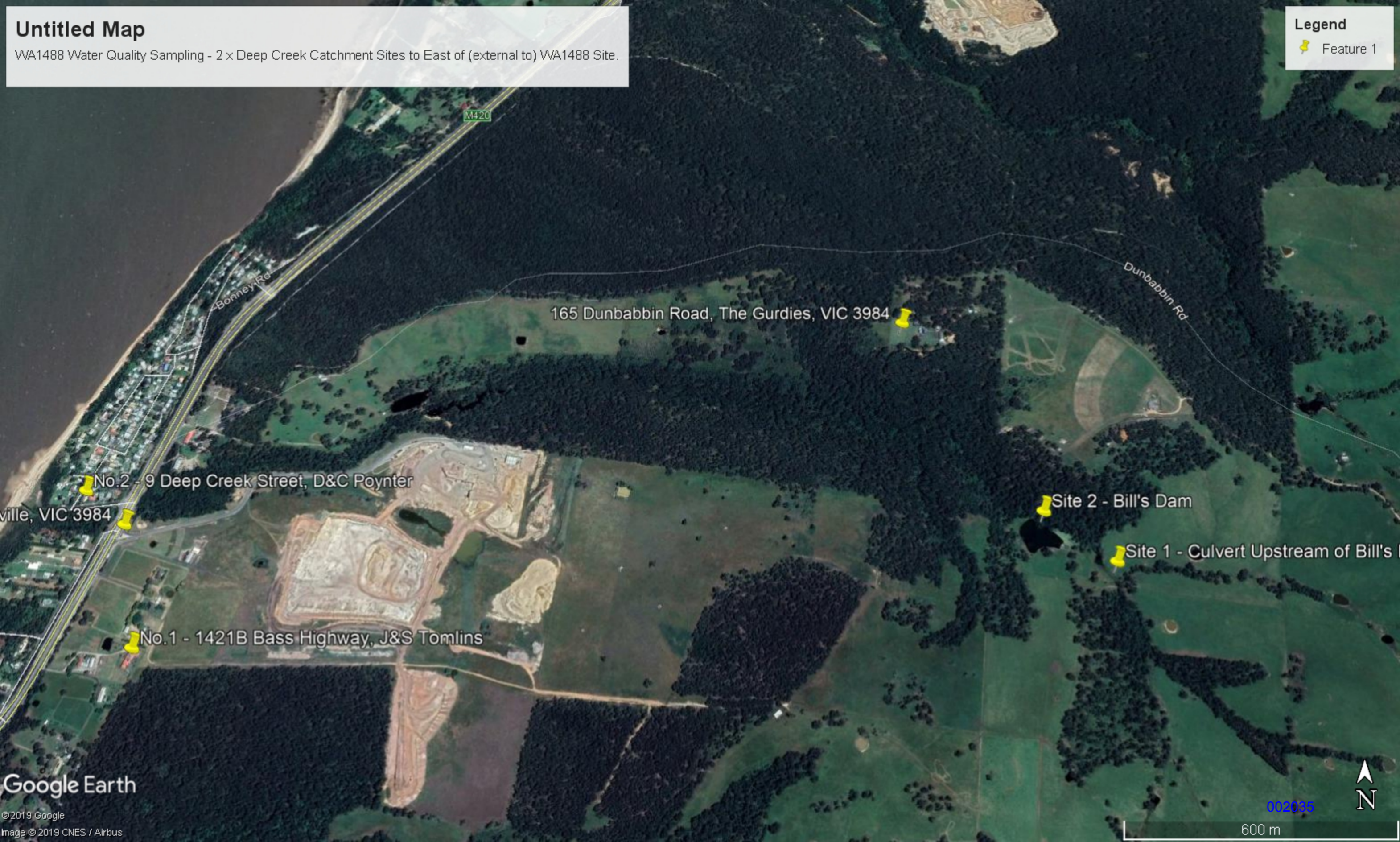
002034

Untitled Map

WA1488 Water Quality Sampling - 2 x Deep Creek Catchment Sites to East of (external to) WA1488 Site.

Legend

 Feature 1



DANDY PREMIX QUARRIES PTY LTD

GRANTVILLE SAND QUARRY

1381 – 1395 Bass Highway, Grantville. VIC 3984



BUSHFIRE MANAGEMENT PLAN (BFMP)

BUSHFIRE READINESS & RESPONSE



December 2019

002036

CONTENTS

COMMONLY USED ACRONYMS

1	Introduction	1
	1.1 Background	1
	1.2 Scope	1
	1.3 Approved Site Activities	2
2	Legal Responsibilities	3
3	Dandy Premix BFMP Policy, Objectives & KPOs	4
	3.1 Potential Causes and Impacts	4
4	Bushfire Management Measures	5
	4.1 Managing Bushfire Risks – Bushfire Prevention	5
	4.1.1 Oxygen	5
	4.1.2 Fuel	6
	4.1.3 Ignition Sources	6
	4.1.4 Weather	8
	4.2 Managing Bushfire Hazard – Active Bushfire(s)	8
	4.2.1 Preparation for Managing Active Bushfires	8
	4.2.2 Managing Active Bushfires	9
	4.3 Managing Bushfire Risks – Agency Cooperation	10
5	Control Measures	11
6	Personnel and Training	16
	6.1 Roles and Responsibilities	16
	6.2 Competence and Training	17
7	Monitoring, Reporting and Review	18
	7.1 Monitoring	18
	7.2 Reporting	18
	7.3 Review	19
8	Consultation	19
9	Emergency – 24 Hour Contact Details	20

APPENDICES

Appendices 1 : BFMP Annual Checklist	25
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FIGURES

Figure 1 : Regional Map.....	21
Figure 2 : Fire Management Plan.....	22
Figure 3 : CFA - Know Your Daily Fire Danger Rating	23
Figure 4 : CFA – Compatible Fittings for Tanks, Water Supply (Dams, Groundwater sources) Pump Units and Water Carts	24

TABLES

Table 1.1: Permitted Hours of Operation	2
Table 3.1: Bushfire and other types of Fire Management Objectives and Key Performance Outcomes	4
Table 4.1 Potential Fire Ignition Risks, Controls and Risk Assessment.....	10
Table 5.1: Control Measures, Responsibility and Timing/Frequency.....	12
Table 6.1 Roles and Responsibilities for the Bushfire Management Plan	16
Table 9.1 Emergency – 24 Hour Contact Details	20

COMMONLY USED ACRONYMS

AS	Australian Standard
BCA	BCA Consulting Services – Earth Resources
BCSC	Bass Coast Shire Council ('Council')
CFA	Country Fire Authority
CSEP	Coarse Sand Extraction Pit
DFDR	CFA – Daily Fire Danger Rating
DELWP	Department of Environment, Land, Water and Planning
DJPR	Department of Jobs, Precincts and Regions
EMP	Emergency Management Plan
ERR	Earth Resources Regulation
EPA	Environment Protection Agency
FMSEP	Fine Medium Sand Extraction Pit
BFMP	Fire Response & Readiness Plan
GCS	Dandy Premix Quarries Pty Ltd (T/a Grantville Commercial Sands)
HSMS	Health & Safety Management System
MFMP	Municipal Fire Management Plan (Bass Coast)
MR(SD)A	Mineral Resources (Sustainable Development) Act 1990
NV	Native Vegetation
WA	Work Authority
WA1488	DJPR/ERR - Approved Work Authority Number 1488, granted under section 77I of the <i>Mineral Resources (Sustainable Development) Act</i> 1990
WP	Approved Work Plan - part of WA1488
WPV	Work Plan Variation (to Approved Work Plan – part of WA1488)

1 Introduction

1.1 Background

This Bushfire Management Plan (BFMP) covers both localized fire and bushfire management for the Dandy Premix Quarries Pty Ltd, trading as Grantville Commercial Sands (Dandy Premix), WA1488 Sand Quarry Site, comprised of 156 hectares located at 1381-1395 Bass Highway, Grantville, 3984.

The BFMP also covers bushfire management of the adjoining 70 hectares of Dandy Premix freehold land to the north of the WA1488 Sand Quarry Site.

This BFMP falls under both of the Dandy Premix Health and Safety Management System and ISO 9001-2015 Quality Management System.

1.2 Scope

The scope of this BFMP includes the following elements:

- The activities approved under the Mineral Resources (Sustainable Development) Act 1990, administered by the Department of Jobs, Precincts and Regions (DJPR), Earth Resources Regulation (DJPR/ERR) Work Authority No.1488 (WA1488), including the Approved Work Plan forming part of WA1488;
- The conditions and endorsed plans approved under the Planning and Environment Act 1987, by Bass Coast Shire Council (BCSC), Planning Permit No.120388, issued 7 August 2013;
- Legal requirements under the Planning and Environment Act 1987, Bass Coast Planning Scheme, Clause 13.02-1S Bushfire Planning and Local Provision – Bushfire Management Overlay (BMO), Map No.14BMO;
- Consultation with the CFA in development of this BFMP in accordance with the compliance standards of the Country Fire Authority Act 1958 and the Country Fire Amendment Regulations 2013;
- The storage of flammable liquids (Diesel Fuel, Oils, etc.) at the Sand Quarry in compliance with AS 1940-2004 - The Storage and Handling of Flammable and Combustible Liquids;
- The objectives and key performance outcomes for this Plan and the Sand Quarry;
- Roles and responsibilities in the implementation of this Plan;
- Competence training and awareness of Dandy Premix personnel and contractors;
- Fire and Bushfire management practices that will be implemented throughout the ongoing operations of the Sand Quarry;
- Fire related record keeping, including Incident Report procedures;
- Regular (scheduled) review of this Plan.

These elements reflect the specific issues outlined in the December 2019, Risk Management Plan, section 2.13 – Fire, of the Work Plan Variation application for further development of extraction activities and the introduction of sand washing at the WA1488 Grantville site.

1.3 Approved Site Activities

Extractive industries activities within the Dandy Premix, Grantville Sand Quarry site comprise the full range of activities under the 2013 WA1488 endorsed Work Plan and approved as part of Planning Permit No.120388 of 7 August 2013, plus those proposed for approval under the December 2019 Work Plan Variation application. Those activities include, but are not limited to the following:

- Topsoil and Clay Overburden removal by excavator;
- Stockpile placement of Clay Overburden;
- Stockpile placement of Topsoil;
- Sand extraction by excavator;
- On-site load (by excavator) and haul operations;
- Sand screening and blending operations including Sales Stockpiles;
- Laboratory testing of Sand blends for grading conformity;
- Sales loading of Sand products to on-road trucks;
- Weighbridge operations;
- Fixed Sand Plant maintenance service and repair operations;
- Service and repairs to Mobile Plant – Haul Trucks, Excavators, etc.;
- Sales and Administration;
- Site (property) maintenance – Fences, woody and herbaceous weed spraying & management, grass mowing, maintain fire access tracks, monitor and control (as appropriate) pest animals, i.e. Foxes, Rabbits and Feral Pigs.

Table 1.1 outlines the hours of operation of the permitted use at the WA1488 site under Bass Coast Shire Council (BCSC) Planning Permit No.120388, issued 7 August 2013.

Table 1.1: Permitted Hours of Operation

Activity	Monday to Friday	Saturday
Site Establishment/Construction	6.00am – 7.00pm	6.00am – 1.00pm
Extraction	7.00am – 6.00pm	7.00am – 1.00pm
Processing	6.00am – 6.00pm	6.00am – 1.00pm
Product Loading and Despatch	6.00am – 6.00pm	6.00am – 1.00pm
Maintenance	6.00am – 10.00pm	6.00am – 10.00pm
Public Holidays excluded except for Maintenance operations. Queuing must not occur on the Bass Highway		

Additional Site Activities that the Dandy Premix December 2019 Work Plan Variation seeks approval for, include, but are not limited to:

- Removal of Native Vegetation for establishment of the Coarse Sand Extraction Pit (CSEP), upper elevations in the eastern part of the site;
- Further development of the existing Fine Medium Sand Extraction Pit (FMSEP), including to:
 - Remove for Sand extraction two existing, but limited capacity, surface water storage dams – Farm Dam and Northern Storage Dam;
 - Remove for Sand extraction the poorly defined (shallow depression), and highly ephemeral eastern (upper) reach of Melbourne Water asset, MW3840; and
 - Extract Sand from below Groundwater using a Cutter Suction Dredge (floating pontoon) in the FMSEP pond;
- Install additional Plant to enable the introduction of Sand Washing and Slimes Dewatering via a Belt Press, with the resultant production of spadeable Filter Cake for use in rehabilitation at the site.

The quarry site and the bushfire management plan are included in Figure 1 Regional Plan and Figure 2 Fire Management Plan at the end of this document.

2 Legal Responsibilities

The primary legal requirement for the Dandy Premix, WA1488 Site to have a Bushfire Management Plan is found under the *Planning and Environment Act* 1987, Bass Coast Planning Scheme, Clause 13.02-1S Bushfire Planning and Local Provision – Bushfire Management Overlay (BMO), Map No.14BMO;

Condition 4 – Fire Management, of the WA1488 – Schedule of Site Specific Work Plan Conditions approved under the MR(SD)A, also states “The Work Authority holder must ensure that management of private land in relation to fire is consistent with public fire management plans for the area”.

BCSC is custodian of public fire management in the WA1488 Grantville area. The ‘Bass Coast Municipal Fire Management Plan (MBFMP), 2018 – 2021, Version 3, December 2018 refers and this Fire Management Plan aims to be consistent with purposes, controls and guidance provided in the Bass Coast MBFMP. The Bass Coast MBFMP was produced pursuant to the Section 20 of the *Emergency Management Act* 1986 and is deemed to fulfil Section 55A of the *Country Fire Authority (CFA) Act* 1958.

Consideration has also been given in the MBFMP to the identification and notification (AusNet Services) procedures for ‘Hazard Trees’ under the *Electrical Safety Act* 1998 (Vic) and the *Electrical Safety (Bushfire Mitigation) Regulations* 2013.

In late 2009, the *CFA Act* 1958 was amended to make provision for CFA certified **Neighbourhood Safer Place – Bushfire Place of Last Resort (NSPs/BPLR)** locations within municipalities and townships. The Bass Coast MBFMP has designated the Grantville Transaction Centre, Memorial Park, 1504 – 1510 Bass Highway, Grantville as the nearest NSP- BPLR to the WA1488 Sand Quarry Site.

3 Dandy Premix BFMP Policy, Objectives & KPOs

- The key objective and highest priority of the Dandy Premix Fire Management Plan (BFMP) is the protection of human life and the safety of all people working, visiting and living on, or in the vicinity of the WA1488 site.
- The protection of property, assets and the local environment, especially neighbouring residences and Parks Victoria (DELWP) reserves containing protected vegetation communities are the next key objectives.
- Minimising the potential risk of a bushfire through preventative controls and minimising the potential for a bushfire to spread are also key policy objectives.

Table 3.1 presents the objectives and key performance outcomes regarding bushfire management for this BFMP, the WA1488 Sand Quarry Site and adjoining Dandy Premix freehold land.

Table 3.1: Bushfire and other types of Fire Management Objectives and Key Performance Outcomes

Objectives	Key Performance Outcomes
(a) To ensure that all site activities are managed in a manner that reduces to an acceptable level the risk of ignition of a bushfire, or other type of fire within the Sand Quarry Site;	<ul style="list-style-type: none">(i) No bushfires are initiated within the Sand Quarry Site as a result of Quarry-related activities;(ii) No other types of fires are initiated within the Sand Quarry Site as a result of Quarry-related activities;
(b) To ensure that measures are implemented to allow appropriate management of a bushfire, or any other type of fire within the Sand Quarry Site;	<ul style="list-style-type: none">(iii) Any ignition of a bushfire, or other type of fire within the Sand Quarry Site is managed/extinguished without harm to life or property;(iv) In the event a bushfire does encroach upon the Sand Quarry Site and/or adjoining Dandy Premix land, life is protected as the first priority and assistance is provided to the CFA in accordance with this plan.

3.1 Potential Causes and Impacts

The bushfire danger period, or '*bushfire season*' in Victoria generally occurs between 1 December and 31 March (inclusive) of the following year. The bushfire season may vary in longevity depending upon prevailing, or forecast weather conditions and fuel load conditions applicable both at the time and in the immediate area.

Climatic conditions, such as low humidity, can contribute to the severity of a fire season and very severe conditions usually result from:

- Wet, late summer and autumn promoting heavy fuel growth/accumulation;
- Dry springs and the early onset of summer conditions;
- Lower than average annual rainfall, especially throughout the winter and spring seasons; and the
- Occurrence of extended drought conditions.

The sand extraction and processing operations of the Dandy Premix Grantville Sand Quarry has the potential to increase the risk of fires, but the site also potentially acts as an effective fire break, especially between The Gurdies Nature Conservation Reserve and the Grantville Bushland Reserve.

Should a fire occur and be allowed to continue unchecked within either of the Dandy Premix WA1488 and/or adjoining freehold sites, it will pose a threat to:

- The safety, property and assets of neighbouring land owners;
- Quarrying fixed plant, mobile equipment, site infrastructure and other company assets;
- Flora and fauna habitat; and
- Land use, including grass cover, exposing land to soil erosion.

The potential for an active local bushfire to spread into the Dandy Premix and WA1488 land needs to be carefully monitored, e.g. from The Gurdies Nature Conservation Reserve to the north, the Grantville Bushland Reserve to the south and freehold to both the north-east and south-east.

To assist with monitoring, fire danger ratings, bans and early warnings, the WA1488 Quarry Manager, Site Supervisor and the Dandy Premix Manager Sustainability each has the Vic Emergency App downloaded to their iPhones with the WA1488 Site registered as “My Watch Zone”. The App notifies of bushfire “incidents” within a 20km radius of the WA1488 Site and provides detailed advice about the incident, including colour coded warning areas, e.g. Red – Emergency Warning, or Black Line with Grey Fill – Evacuation.

4 Bushfire Management Measures

Three factors must be present for a bushfire to occur and there are several other factors which may occur that will affect the progress of a bushfire. For a fire to occur there must be oxygen, fuel and an ignition source. The progress of a bushfire will be affected by fuel availability (including type and amount), terrain and Weather (including winds, humidity and air temperature).

The following subsection describes the management measures that will be implemented to manage each of these factors.

4.1 Managing Bushfire Risks – Bushfire Prevention

4.1.1 Oxygen

It is not feasible to restrict oxygen to manage risks associated with ignition of a bushfire.

4.1.2 Fuel

Fuel loads within the Sand Quarry Site will be managed in conjunction with Dandy Premix's obligations in relation to the Sand Quarry Site, the s173 Agreement - Revegetation and Conservation Plan and the DELWP Native Vegetation Removal and Offset Management Plan.

Buffer zone of a minimum of 20m between the WA1488 Extraction Area developments and any Sand Quarry Site vegetation, or adjoining site vegetation with the potential to be a bushfire hazard, will be maintained with the purpose to ensure that a reduction of bushfire fuels occurs between the potential bushfire hazard, any infrastructure, fixed operating plant, mobile operating plant, haul roads and actively engaged personnel.

The buffer zones will be maintained by use of the following measures:

- Overhanging tree limbs and shrubs will be pruned, or maintained in such a manner that the vegetation is neither continuous, or a hazard threat;
- Grass and other fine fuel load will be slashed, harrowed, or maintained to below a non-hazardous height, e.g. 10cm; and
- Where required, crushed rock will be used to maintain both access and fuel reduction.

4.1.3 Ignition Sources

Sources of ignition are likely to fall into one of four source categories:

- Quarry-related activities;
- External ignition sources, e.g. embers from a nearby bushfire;
- Electricity transmission lines; and
- Lightning.

Of the above categories, Dandy premix can only control the first source. The following management measures will be implemented to minimise the risk of Quarry-related activities providing such a bushfire ignition source.

4.1.3.1 Mobile Plant Operations

- No earthmoving equipment will be used to clear vegetation during periods of Total Fire Bans.
- Mobile equipment working in vegetated areas will not be left unattended with the engine running.
- Mobile equipment working in a vegetated area of the Quarry Site will be inspected to ensure that it does not pose a risk of igniting a bushfire; this will include inspection of exhaust and electrical systems.
- All other Quarry-related activities will be undertaken in cleared areas (within Sand Extraction Pits, Hardstand Area - Processing Plant, Stockpiling, Sales Loading, Workshop, Weighbridge, etc.) when the limited and progressive site vegetation clearing is not in operation, i.e. has ceased.

- All mobile equipment (earthmoving and haul trucks) will be maintained in good working order with appropriate exhaust and fire suppression/extinguishing systems.
- The refuelling of mobile equipment will be undertaken within the designated fuel bay located on the Hardstand cleared area of the Quarry Site.
- All vehicles and mobile plant will be turned off during refuelling.
- 2.0kg, or 4.5kg ABE Dry Powder Fire Extinguishers will be installed and maintained as fully serviced within Quarry Site vehicles, mobile plant and designated fixed plant, Workshop and ancillary infrastructure (Admin/Amenities) locations.
- The cannon and spray bar on the Quarry Site Water Truck will be regularly inspected and tested to ensure it remains fully operational and effective. The CFA compatible fitting will also be checked for integrity.
- All mobile equipment will be equipped with appropriate and operationally effective Quarry Site communications equipment, including UHF (Channel 20) two-way radios and/or mobile telephones.
- The “No Smoking” policy will continue to be rigorously enforced across the Quarry Site.

4.1.3.2 Other Operations

- Continue to ensure the “No Smoking” policy is enforced across all other operating areas of the Quarry Site, e.g. Workshop, Processing Plant, Laboratory, Sales Loading Area, etc.
- As far as practicable, welding, cutting and grinding operations will be confined to and conducted within the Workshop area; however, if unavoidable, these operations will only be conducted within a cleared area of the Quarry Site under extenuating circumstances with fire extinguishing resources on watch and at the ready.
- Quarry management will maintain a focus on good housekeeping to avoid the build-up of fuel loads and/or potential fire hazards.
- All Quarry Site operating work areas will be equipped with suitable fire extinguishers and their locations indicated by appropriate signage.
- Hydrocarbons will only be stored on the Quarry Site within an appropriately constructed and bunded hydrocarbon storage area within the Workshop with suitable fire extinguishers and appropriate signage in the immediate storage area.
- All fire extinguishers will be serviced six monthly with service records tagged to each extinguisher.

4.1.4 Weather

The CFA Daily Fire Danger Rating (DFDR) is an assessment of the potential fire behavior, the difficulty of suppressing a fire and the potential impact on the community should a bushfire occur on a given day.

The DFDR is determined by the Fire Danger Index (FDI) which is a combination of air temperature, relative humidity, wind speed and drought factor. An FDI of 1 (Low-Moderate) means that a fire will not burn, or will burn so slowly that it will be easily controlled, whereas an FDI in excess of 100 (Catastrophic) means that a fire will burn so fast and so hot that it will be uncontrollable.

The Quarry Manager and/or Quarry Supervisor are required to check the DFDR in the local area of the Quarry Site, on-line via the Vic Emergency, or CFA apps and/or websites on a daily basis during the fire season (start December to end following March).

Should the DFDR be any of Severe, Extreme, or Code Red and when a Total Fire Ban has been declared, the Quarry Manager and/or Quarry Supervisor will:

- Notify Quarry Site personnel of the heightened bushfire risk and stress to personnel the need to be vigilant in managing potential ignition sources;
- Regularly check vulnerable areas of the Quarry Site and the horizon for evidence of local smoke; and
- Regularly check and be aware of Warnings and Incidents on the Vic Emergency App, 'My Watch Zone' for the Quarry Site on their iPhones.

4.2 Managing Bushfire Hazard – Active Bushfire(s)

4.2.1 Preparation for Managing Active Bushfires

The following measures will be implemented to enable appropriate management of active bushfires:

- Incorporate the Bushfire Management Plan into the overarching Emergency Response Plan for the WA1488 Quarry Site;
- Provide for the use of available water sources, e.g. pumps, hoses and the water cannon on the water truck, to manage ember attack on the Quarry Site buildings – Weighbridge, Office & Amenities, the Workshop and the Sand Washing and Processing Plant, inclusive of MCC and Laboratory;
- Ensure all UHF two-way radios and/or mobile phone communications equipment is working on all mobile equipment ensuring ready communications to all personnel;
- Establish two CFA compatible connection points from the Quarry Site's water infrastructure, e.g. Farm Dam, Tank, adjoining Dandy Premix land Dam and/or Groundwater pontoon pump supply, to ensure accessibility of these water sources to firefighting equipment, including that of the local CFA equipment;

- Maintain the Quarry Site Access Road to the Bass Highway to ensure safe access and egress from the site in the event evacuation is required/called;
- All active Haul Roads and Fire Access Tracks will be regularly checked and cleared of all obstructions and debris to enable safe ingress and egress of personnel from various areas of the Quarry Site;
- Fire breaks, some of which double as Fire Access Tracks, established within and around the perimeter of the Quarry Site will also be maintained to reduce fuel load, in order to also ensure ingress and egress for firefighting vehicles and personnel; and
- Fire management and awareness training will be provided to all Quarry Site personnel, while firefighting training, specific to tasks and procedures, will be provided to the required personnel.

4.2.2 Managing Active Bushfires

Following the identification of an imminent bushfire threat, the following fire management measures will be implemented:

- Human life is the most important asset and the key objective for protection. Only if it is safe to do so, will property be considered for protection as a secondary asset;
- The bushfire will be reported to the CFA on “000” as the earliest opportunity by the Quarry Manager, or the Quarry Supervisor;
- If a fire, or a small bushfire has started in close proximity to an operational work area within the Quarry Site and both resources and facilities are on-hand to put it out and it is safe to do so, then it should be contained and extinguished as quickly as possible; if necessary, in conjunction with the CFA if they have been requested to attend;
- If the bushfire is not in close proximity and it is determined to be safe to do so, the Quarry Manager can decide that quarry operations will continue with the following provisions:
 - Fire-fighting equipment, including the Water Truck, fire extinguishers and suitable earthmoving equipment, e.g. Bulldozer, and/or Grader will be brought close-to-hand, i.e. be immediately ready and available;
 - UHF two-way radio and local AM radio (ABC – 774) will be monitored for bushfire updates; and
 - The Quarry Manager, or Quarry Supervisor, will make regular checks to determine if the fire front is moving closer to the Quarry Site, or is increasing in its threat to Quarry personnel and the Quarry Site.
- In the event of a local bushfire beyond the Quarry boundary, all personnel on the Quarry Site would be directed to assemble at ‘Emergency Assembly Area No.1’ on the Plant Hardstand Area. A head count would be undertaken to confirm all Quarry Site personnel, contractors and visitors are accounted for. At this time, instructions as to specific procedures to be followed, i.e. site protection, or site evacuation, would be issued by the Quarry Manager in accordance with the BFMP as part of the broader Emergency Management Plan.

4.3 Managing Bushfire Risks – Agency Cooperation

Unless quickly controlled and extinguished, bushfires usually impact on more than a single property; it is therefore critical, that in addition to other landowner consultation, that Dandy Premix ensures the CFA, Emergency Victoria, Victoria Police and Ambulance Victoria, agencies responsible for emergency response services are adequately informed about activities at the WA1488 Grantville Quarry Site.

Other relevant government agencies, e.g. DJPR/ERR, DELWP, PV, EPA, SRW, etc. and Council also have a need to be suitably informed and aware about activities within the Quarry Site and adjoining Dandy Premix land.

Consequently, the following will be implemented annually, sufficiently in advance of the upcoming bushfire season, e.g. September – October annually:

- Dandy Premix representatives will meet with the relevant emergency service responders, government agencies and Council to provide an overview of quarry activities during the preceding 12 months and anticipated activities during the forthcoming 12 months; and
- A separate Quarry Site meeting will be held with officers of the CFA, District 8 – South East, Fire Prevention and Preparedness Branch, to provide an updated overview of the quarry layout. An inspection of the Quarry Site will be undertaken to identify areas where fuel loads are required to be reduced, Fire Access Tracks and Fire Breaks requiring maintenance and to discuss any other related fire prevention and preparedness matters.

Table 4.1 Potential Fire Ignition Risks, Controls and Risk Assessment

Ignition Source	Background Information	Inherent Fire Risk Assessment			Control(s)	Residual Risk Rating
		Likelihood	Consequence	Risk Rating		
Lightning Strike	Uncontrollable	Rare	Critical	Very High	BFMP	High
Arson	Uncontrollable	Possible	Moderate	Medium	Security in place, 3 x residential occupancies on Quarry Site to Bass Highway	Medium
Cigarette Smoking		Possible	Moderate	Medium	Reinforce 'No Smoking' Policy	Low
Dangerous Goods Storage	No DG's stored on Quarry Site	Rare	Insignificant	Low	Not Required	Low
Diesel Bulk Storage	Category 4 Flammable Liquid. 15,000L above ground Storage Tank	Unlikely	Minor	Low	Bunded and located on sand based Hardstand Area	Low
Mobile Plant	Rarely work in grassed or	Possible	Major	Medium	Exhaust systems	Medium

Ignition Source	Background Information	Inherent Fire Risk Assessment			Control(s)	Residual Risk Rating
	vegetated areas of Quarry Site. Normally in Sand Extraction Pit and/or on maintained Haul Roads.				vertically directed, spark arrestors and fire extinguishers fitted	
Electrical Failure	Buildings constructed on concrete slabs, metal cladding and metal roofing. Stud & plaster board internals to Weighbridge, Admin & Amenities Building. Exposed steel framing in Workshop. Laboratory & Plant MCC located above ground in modified and insulated container.	Possible	Moderate	Low	Facilities only 6 years old, Certificate of Electrical Safety available. Annual check conducted by Positive Electrics. Fire Extinguishers appropriately fitted, labelled and serviced.	Low
Power (Electricity) Transmission Line	1 x Power Supply, 230/460, Two Phase, 3 Wire cable, approx. 900 metres of overhead high voltage supply to sub-station.	Unlikely	Moderate	Low	Route of overhead line maintained clear of trees – no potential for interference. From substation cabling is underground to distribution boards.	Low

5 Control Measures

Control measures for the prevention and control of bushfires within or threatening the Dandy Premix WA1488 site and adjoining freehold land to the north, are detailed in Table 1.

They include (but are not limited to):

- Where possible and/or necessary, grazing of pastures to minimise fuel build-up;
- Slashing of grass areas surrounding the quarry access road, site plant and other infrastructure areas, haul road surrounds and designated fire trails;
- Vegetation (overhanging hazardous trees) maintenance around infrastructure, especially electric power lines and the quarry access road;

- Regular service and maintenance of fire-fighting equipment, including the water truck, portable extinguishers, fire-hoses and fire-blankets; and
- Regular communication and site inspection visits from the CFA, including by the local Grantville CFA depot.

Some of these preventative measures are aimed at reducing the severity of a bushfire by reducing the amount of fuel available to burn, should a bushfire occur. This will make any such bushfire easier to control and minimises the level and/or extent of fire damage.

Control measures such as the establishment of defined 'Fire Access Trails' will consider the impact on and protection of native vegetation across the Dandy Premix sites. Any unavoidable requirement to clear native vegetation for such a control measure, will firstly seek a DELWP Native Vegetation Removal and Offset approval.

The WA1488 site has a 12,000L water truck that is capable of use for fire-fighting purposes. The water truck is also equipped with a CFA compatible fitting (CFA male end Pt. No. Se.03.074), enabling it to be used to supply water to CFA fire units.

Water is available from a total of five dams across the two adjoining Dandy Premix properties, however the WA1488 Farm Dam is the major source of water, it is located in a flat, easily accessible (non-vegetated) location and equipped to pump water to the water truck. It currently performs this role for site dust suppression.

In future years, when the Farm Dam is excavated as part of sand extraction activity and forms part of the Fine Medium Sand Extraction Pit (FMSEP), the lake dredged in the FMSEP will provide a ready source of replacement groundwater to the water truck.

Table 5.1 summarises the control measures, personnel responsible for management of the control measure and the timing, or frequency of the control measure.

Table 5.1: Control Measures, Responsibility and Timing/Frequency

CONTROL MEASURE	RESPONSIBILITY	TIMING/FREQUENCY
1 Awareness: All new Dandy Premix (GCS) employees and contractors to attend a GCS site induction prior to commencement of work on WA1488 site. Inductions will ensure awareness and understanding of Dandy Premix objectives, Bushfire and Emergency Management policy and procedures.	All staff & Contractors	Prior to commencement of work on WA1488 site
2 Training: WA1488 Quarry 'Site Emergency (Bushfire) Response Team (SERT)' – will be established and led by the Quarry Manager, supported by the Quarry Supervisor. A number of Quarry personnel will comprise the balance of the SERT on a volunteer basis and be provided with appropriate training, especially in bushfire prevention and firefighting. The CFA will be the major	Quarry Manager, OH&S Manager and Manager Sustainability	Ongoing

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
	training resource. All BFMP & EMP training programs, training schedules and completed training will be recorded at both Quarry Site and personnel levels.		
3	<p><u>Policy and Procedures:</u></p> <p>The most important policy objective is the protection of human life and the safety of all personnel on the WA1488 Quarry Site.</p> <p>Procedures outlined in the BFMP are directed to the protection of human life and thereafter to the protection of plant, building and equipment assets.</p> <p>Only attempt to control and extinguish a bushfire, or other type of fire, when it is possible to do so – Do NOT place yourself or others at risk of injury, or in a life threatening situation.</p>	Quarry Manager, OH&S Manager and Manager Sustainability	Ongoing
4	<p><u>Controls – Fuel Load Reduction:</u></p> <p>Where possible, pasture in the site buffer zones, residential areas and surrounding the Site Access/Egress Roads, will either be grazed, or regularly slashed to avoid the build-up of excessive fire fuel load. This activity includes the spraying of noxious and herbaceous weeds, along with ‘good housekeeping’ especially in areas surrounding the Workshop, the Processing Plant, the Admin/Amenities and Weighbridge building and the Plant Hardstand Area more generally.</p>	Quarry Manager & Site Supervisor	Annual and As Required
5	<p><u>Controls – Activities:</u></p> <p>All ‘hot work activities’ on site, e.g. welding, steel cutting and/or grinding, etc., will whenever possible, be undertaken in the Workshop and will require the issue of a ‘Hot Work Permit’ prior to being undertaken.</p> <p>No welding, steel cutting and/or grinding will be approved, or undertaken on days of Extreme, Code-Red, or Days of Total Fire Ban.</p>	Quarry Manager	Ongoing
6	<p><u>Controls – Systems & Equipment:</u></p> <p>Currently approved fire control systems and equipment (including site UHF Channel 20 communications, portable fire extinguishers, water truck and other equipment) will be serviced and maintained. Appropriate signage shall be in-place and of good condition. The availability and access to water sources for firefighting purposes will also be inspected and maintained in an appropriate condition. These</p>	Quarry Manager, Site Supervisor & Manager Sustainability	Six Monthly and As Required

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
	inspections and maintenance tasks will be documented.		
7	<u>Controls – Assessment & First Response:</u> WA1488 'Site Emergency Response Team' will provide initial assessment and if determined appropriate (controllable), will provide service/response in the event of a bushfire, or other fire at the site. The CFA will be contacted as a priority.	Quarry Manager & Site Supervisor	As Required
8	<u>Controls – Emergency Notification:</u> All fires on Dandy Premix WA1488 and adjoining (north) freehold land during the 'bushfire danger season' will be reported to 000.	Quarry Manager & Manager Sustainability	As required
9	<u>Controls – CFA Attendance to Quarry Site and Personnel Evacuation:</u> The WA1488 sealed Site Access Road at the 1381 Bass Highway entry/egress point will be used as 'Emergency Assembly Area No.2' if site evacuation is required. CFA fire assistance will be directed to this access point and thereafter accompanied into the site.	Quarry Manager & Site Supervisor	As required
10	<u>Emergency Assembly and Evacuation Assembly Areas:</u> The Sales Loading Area of the Plant Hardstand will be used as the main site 'staging and 'Emergency Assembly Area No.1'. The Plant Hardstand is approx. 5.0 ha in size, inclusive of plant and infrastructure, sand-based and devoid of any vegetation (fuel), of which about 2.5 ha is available 'free space' for the assembly and/or mustering of human resources and mobile plant. The Plant Hardstand also has unimpeded site access and egress via the sealed Site Access and Egress Road from/to the Bass Highway (900 metres) and is 'Emergency Assembly Area No.2' in the event of site evacuation.	Quarry Manager, Site Supervisor, All staff, Contractors & Visitors	As required
11	<u>Annual Risk Assessment – Site Conditions & Equipment:</u> Annual inspections will be made prior to the 'bushfire danger season' (July/August) to ensure the adequacy of fire control measures, including firefighting equipment.	Quarry Manager & Site Supervisor	Annually (July/August)
12	<u>Annual Risk Assessment – DGs, Combustibles & Flammables:</u> Annual review of flammable and combustible liquids, or materials stored on site, including updated MSDSs, Dangerous Goods classification and storage conditions) to ensure the	Quarry Manager & Site Supervisor	Annually (July/August)

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
	adequacy of fire control measures and emergency information.		
13	<u>Annual Risk Assessment Review – Policy & Procedures:</u> Annual management review of BFMP and EMP Policies and Procedures to ensure controls are effective, relevant and respond adequately to changed Quarry Site operating conditions. Document and amend both BFMP & EMP as required.	Quarry Manager, Site Supervisor & Manager Sustainability	Annual and As Required
14	<u>Annual Risk Assessment Review – Responsibilities & Accountabilities:</u> Review roles and responsibilities for managing bushfire, other types of fire and/or emergency situations at the Quarry Site. Document and amend both BFMP & EMP as required.	Quarry Manager, Site Supervisor & Manager Sustainability	Annual
15	<u>Consultation & Communications - Internal:</u> Ongoing two-way communication with Quarry Site personnel in relation to the BFMP & EMP through the OHS Toolbox Meetings system. Quarry Site BFMP & EMP reporting will be part of ISO 9001:2015 Quality Management System, Senior Management Meeting agenda.	Quarry Manager & OHS Manager	Monthly
16	<u>Consultation & Communications - External:</u> Ongoing communications and liaison will be maintained with the CFA, District 8 and local Grantville CFA volunteer station staff.	Quarry Manager & Manager Sustainability	Ongoing and As Required
17	<u>Consultation & Communications - External:</u> Ongoing communications and liaison will also be maintained with other emergency service providers and regulatory agencies, e.g. DJPR/ERR, DELWP, Parks Victoria, SRW, Ambulance Victoria, 8-10 Pier Road, Grantville, VIC 3984 (Tel: 9840 3500), Victoria Police and Council as the responsible authority for planning matters and custodian of the Municipal Fire Management Plan.	Manager Sustainability	Ongoing and As Required
18	<u>Consultation & Communications – Community Engagement:</u> Ongoing engagement with the local community in relation to Bushfire activities, the Quarry Site BFMP & EMP will be undertaken through one-on-one meetings, the Grantville ERC and the Dandy Premix website.	Manager Sustainability & Quarry Manager	Four Monthly Grantville ERC and As Required

6 Personnel and Training

6.1 Roles and Responsibilities

Table 6.1 presents the roles and responsibilities of the Dandy Premix personnel within the GCS Grantville Sand Quarry for the implementation of this Bushfire Management Plan (BFMP).

Table 6.1 Roles and Responsibilities for the Bushfire Management Plan

ROLES	RESPONSIBILITIES
Managing Director (Work Authority Holder)	<ul style="list-style-type: none"> Ensuring overarching legal responsibility for compliance to the Bushfire Management Plan by all Dandy Premix personnel, Contractors and Site Visitors at the WA1488 Quarry Site.
Quarry Manager	<ul style="list-style-type: none"> Ensuring compliance to the Bushfire Management Plan by all Dandy Premix personnel, Contractors and Site Visitors at the WA1488 Quarry Site; Training of the Quarry Site personnel in bushfire management (as required) to ensure the BFMP Objectives and Key Performance Outcomes (KPOs) are achieved, e.g. the protection of human life; and Conduct Reviews, Liaise with Quarry Site personnel, Dandy Premix Senior Management, Emergency Service Responders and Report on implementation of the BFMP.
Site Supervisor	<ul style="list-style-type: none"> Assist and support the Quarry Manager as required in the execution of his/her responsibilities under the BFMP; and Operate as 'second-in-charge' to the Quarry Manager in the implementation of the BFMP; and In the absence of the Quarry Manager, assume full responsibility for implementation of the BFMP as required.
Manager Sustainability	<ul style="list-style-type: none"> Oversight compliance of the BFMP at the Quarry Site; and Conduct Reviews, Liaise with Quarry Site personnel, Emergency Service Responders, the Regulator, Statutory Agencies, Council and Report on implementation and changes to the BFMP, as required.
Manager OHS	<ul style="list-style-type: none"> Oversight bushfire management training (incl. firefighting equipment & techniques);

ROLES	RESPONSIBILITIES
	<ul style="list-style-type: none"> • Review/update the bushfire management training service provider and/or course content to ensure its suitability for compliance with the BFMP; • Liaise with Quarry Site personnel on the BFMP as part of the regular OHS Toolbox Meetings; and • Assist and support the Quarry Manager (as required) in monitoring, review and reporting on the BFMP. •
All Personnel	<ul style="list-style-type: none"> • Be fully aware of the Quarry Site BFMP; • Comply with all control measures outlined in the BFMP, e.g. No Smoking Policy; and • Respond positively to instructions from senior Quarry Personnel in relation to implementation of the BFMP. •

6.2 Competence and Training

All Dandy Premix, WA1488 Quarry Site personnel, site Contractors and their employees will undergo site specific bushfire management plan (BFMP) induction awareness training prior to their commencement at the Quarry Site. This BFMP induction awareness training will include, but not be limited to:

- The BFMP Key Objectives and KPOs, i.e. the protection of human life as the primary objective and KPO of the BFMP, do not place yourself or others at risk of injury and only attempt to extinguish a fire when it is possible to do so;
- Awareness of the location and operation of firefighting equipment and resources, e.g. Fire Extinguishers, the Water Truck and Water Resources for filling of the Water Truck;
- Awareness of the emergency response procedures and the two 'Emergency Assembly Areas'; and
- The roles and Responsibilities of Quarry Site personnel for implementation of the BFMP in the event of a bushfire, other type of fire, or Quarry Site emergency situation.

The Manager OHS, Dandy Premix in liaison with the Manager Sustainability and the Quarry Manager will source and arrange for the delivery of an appropriate bushfire (and other types of fire) management training course(s) for those Quarry Site personnel who volunteer to be a member of the 'Site Response Team' in the event of a bushfire (or other fire) at, or threatening the Quarry Site. The bushfire management training will include, but not be limited to:

- Use of the correct type of fire extinguisher for the type of fire;
- Most effective technique(s) in use of a fire extinguisher, e.g. direct extinguisher stream to base of the flame, not at smoke, use a side-to-side, sweeping motion over the burning surface, sweep from front edge to rear, then upwards, etc.

- Once fire extinguished, pull apart burnt areas to further extinguish any 'hot spots';
- Operation of the Quarry Site Water Truck, including filling operations; and
- If a bushfire/fire gets out-of-control, retreat to protect from injury and risk of life.

7 Monitoring, Reporting and Review

7.1 Monitoring

Apart from usual daily operating checks, annual Quarry Site BFMP inspections will be made well in advance of the declared bushfire season. These inspections will typically be conducted in August/September to ensure the adequacy of fire control measures before the impending fire season. They will also form part of the ongoing WA1488 site land management, Native Vegetation and revegetation for conservation measures.

A copy of the Annual Inspection Checklist is included as **Table 7.1** of the Appendices. This will include an evaluation of last year's control measures, the assessment of pasture levels, identification of new and existing areas that require slashing, inspection of 'Fire Access Tracks' Firebreak adequacy, and an inspection of the adequacy and serviceability of firefighting equipment and facilities.

Ongoing maintenance of bushfire controls will be carried out as required and as an outcome of regular operating inspections by the Quarry Manager and/or the Site Supervisor and feedback received from Quarry Personnel and neighbours.

7.2 Reporting

A summary of performance against the objectives of the BFMP, any bushfire management issues and actions arising throughout the year will be presented by the Quarry Manager to the biannual Dandy Premix, Senior Management (Business) Review Meetings.

Any matters of bushfire management significance, requiring amendment to the BFMP for the Quarry Site, will be distributed to relevant regulators and stakeholders.

The Key Objectives and KPOs of the BFMP will be achieved if:

- Fire fuel reduction and hazard control is carried out on a regular basis;
- No bushfire, or other types of fire is initiated on the Quarry Site;
- Any bushfire encountered from neighbouring land, is successfully controlled on the Quarry Site;
- No injuries, or loss of human life occurs with Quarry Site personnel (including Contractors, their staff and Site Visitors) as a consequence of fire; and
- Regular consultation and engagement with the CFA, other emergency service responders, Regulators, Council and local land owners/managers is maintained.

7.3 Review

Initially, the BFMP will be reviewed and updated annually.

If successive annual reviews indicate, it is proposed that while reviews continue annually, the BFMP only updated every 3 years, or as required, following any incidents, improved procedures, or the findings of an annual inspection and management review.

The annual BFMP review will include an assessment of the effectiveness of the established bushfire controls and their performance against the s Key Objective and KPOs of the BFMP.

Progressive amendments, annually, three yearly, or as required, will be made to the BFMP in line with the Dandy Premix (ISO 9001:2015 QMS) continuous improvement process. Any amendments to the plan will be undertaken in consultation with the CFA.

To date the BFMP prevention measures in place have been successful. However, this is not to suggest this will continue to be the case, hence the need for ongoing monitoring, review, training, awareness and diligence.

The sites Emergency Response Procedures, which include response to fire, involve emergency response drills that help to assess the ability and capacity of the Quarry Site, including personnel, to respond safely and adequately in such circumstances. These drills will continue and any improvements needed will be made upon review of the drill performance.

As industry information and processes improve in relation to bushfire management, the BFMP will be amended to improve safety and performance. Quarry Site personnel will be updated and where necessary, trained in respect of the BFMP changes.

8 Consultation

The Fire Prevention and Preparedness Section of the Victorian CFA, District 8 - Dandenong have been consulted and provided their expectations of the Dandy Premix (GCS), Grantville Fire Response and Readiness Plan (BFMP).

Mark Sacco, Fire Safety Office from CFA District 8 attended the 'Initial Site Meeting' of 23 August 2019 in relation to the Dandy Premix Work Plan Variation (WPV) application for the WA1488, Grantville site. The site meeting included a thorough briefing by Dandy Premix of the proposed further development proposal for the site and provided an opportunity for the CFA to improve their awareness of the WA1488 site, its operations and of adjoining Dandy Premix freehold land.

Consultation has taken place and will continue to be ongoing with 45 year longstanding residents on the WA1488 Sand Quarry Site land, Messrs. Roy and Bill Blackmore, former owners of the land. Both Roy and Bill Blackmore have been active members of the Kernot-Grantville CFA in prior years and have an intimate knowledge of the WA1488 Sand Quarry Site.

Broader consultation has also been undertaken with both the Department of Environment, Land, Water and Environment (DELWP), Gippsland Region, as well as Parks Victoria (part of DELWP) in their role as managers of both The Gurdies Nature Conservation Reserve and The Grantville Bushland Reserve. The Municipal Fire Prevention Officer (MFPO) of Bass Coast Shire Council, as the responsible planning authority has also consulted in the formation of this BFMP.

Ongoing annual consultation is planned with the CFA, Emergency Victoria, Victoria Police and Ambulance Victoria in relation to recent and forthcoming operational and fire management activities at the Quarry Site.

Community engagement will be maintained through the ongoing participation by Dandy Premix in the Grantville Environmental Review Committee (ERC), which in part, contains seven Community Representatives.

The Dandy Premix website will continue to be an accessible electronic media platform for notifying the community of Quarry Site activities, development plans and fire management updates. All feedback and complaints received through the website is automatically acknowledge and thereafter a full response is provided to the interested party, or complainant.

9 Emergency – 24 Hour Contact Details

The following Emergency contact details are provided to assist urgent communications and emergency situation responses.

Table 9.1 Emergency – 24 Hour Contact Details

Contact Name	Phone Number	Email / Website	Role / Responsibility
Mark Van Den Heuvel	5678 8899 0417 570 841	grantville@dandypremix.com	Quarry Manager
Garry Cranny	9703 8260 0419 587 440	gcranny@dandypremix.com	Manager Sustainability, Dandy Premix Quarries Pty Ltd
Emergency <ul style="list-style-type: none"> • CFA • Police • Ambulance 	“000” (Triple 0)		Emergency fire and response
CFA Headquarters	9262 8444	www.cfa.vic.gov.au	General fire condition reporting and enquiries
CFA District 8	9262 8444	www.cfa.vic.gov.au	South East (Grantville Area)
VicRoads	13 11 70	www.vicroads.vic.gov.au	Road incidents, hazards, closures and warnings

Figure 1 : Regional Map



Figure 2 : Fire Management Plan

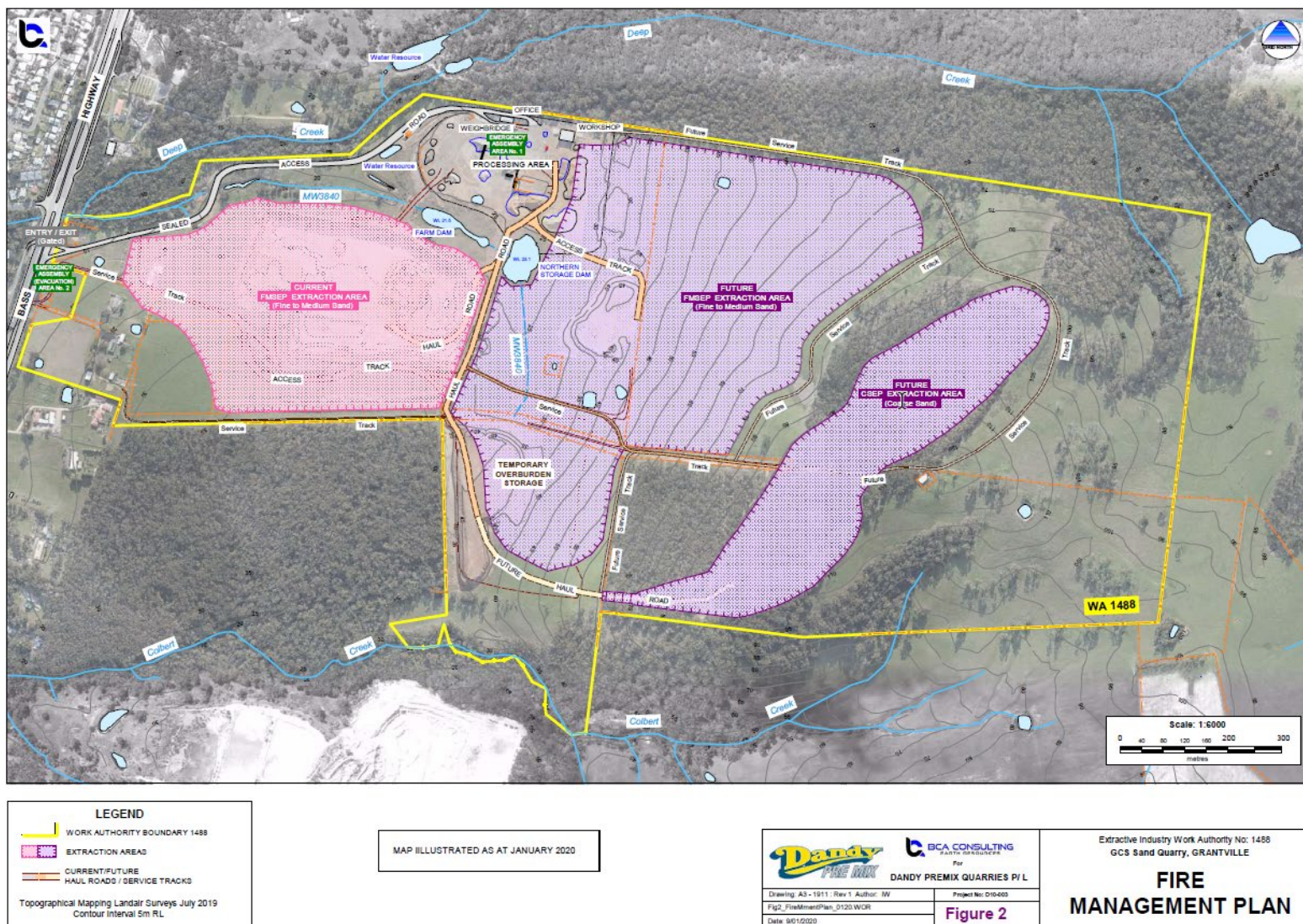


Figure 3 : CFA - Know Your Daily Fire Danger Rating

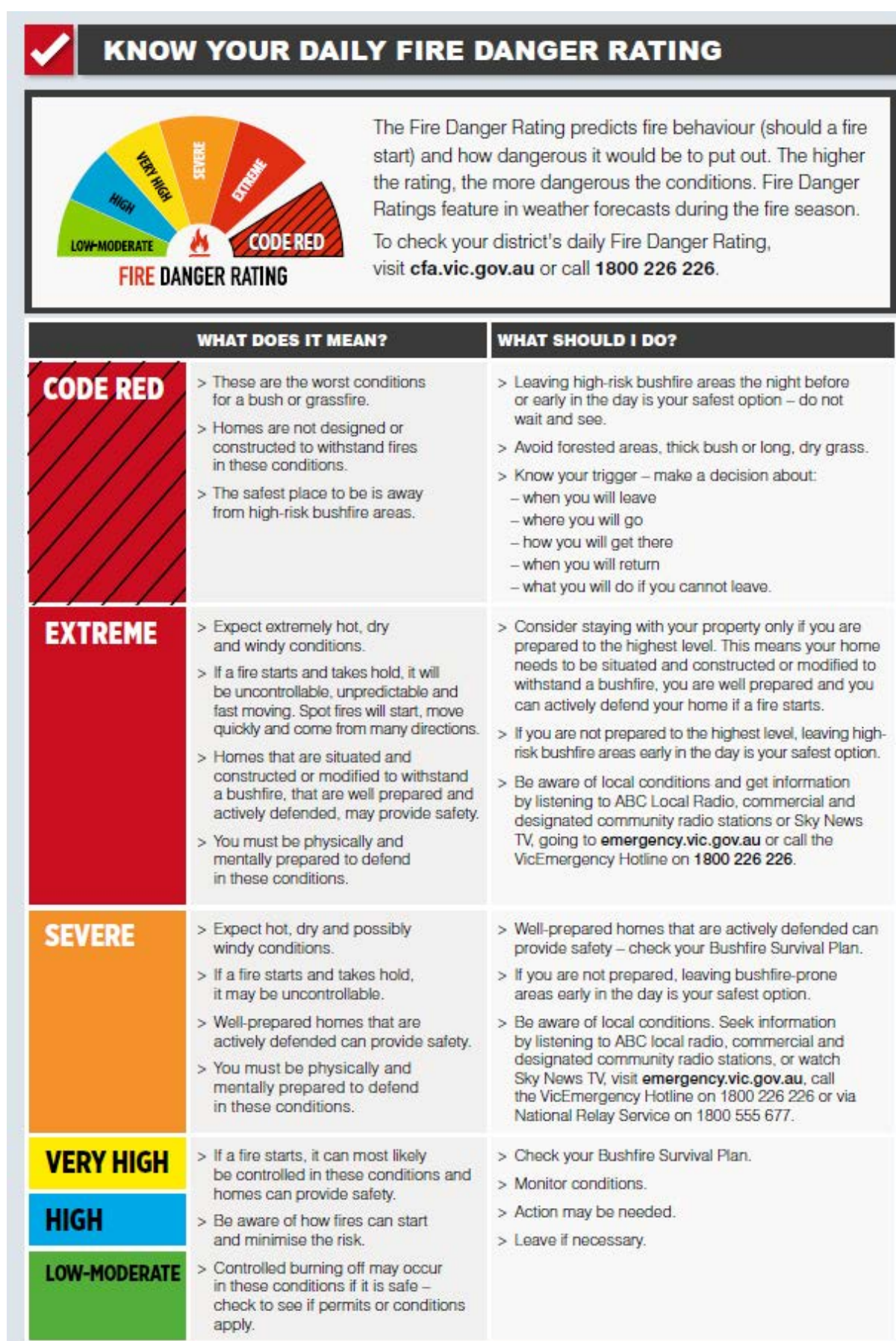


Figure 4 : CFA – Compatible Fittings for Tanks, Water Supply (Dams, Groundwater sources) Pump Units and Water Carts

CFA FITTINGS FOR TANKS

CFA trucks use a special fitting to connect to tanks. There needs to be at least one 64 mm, 3 thread/25 mm x 50 British Standard Pipe round male coupling (CFA Male End, Pt. No. SE.03.074). Consider using a 'tee' to allow the CFA fitting on one side of the branch and personal firefighting fittings on the other side of the pipe, as shown below.

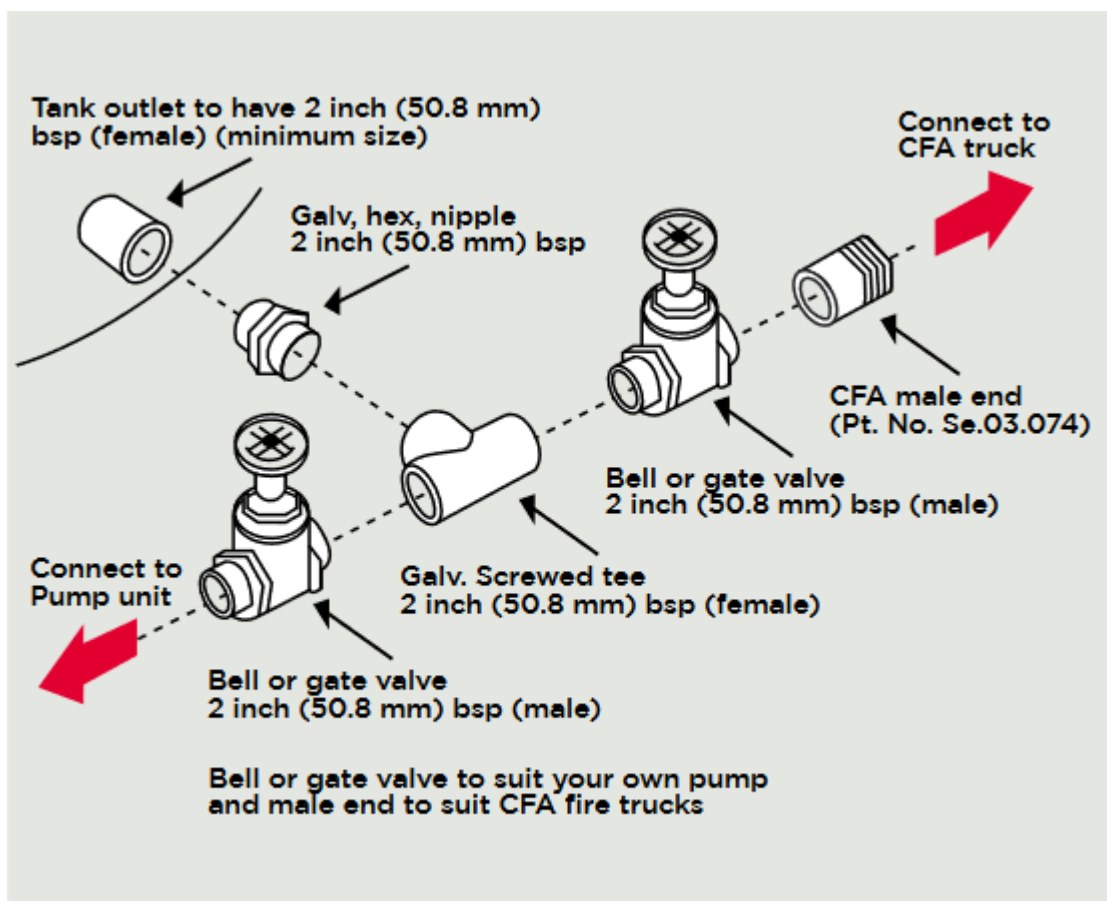


Figure 7: Tank fittings to connect to CFA fire trucks

Appendices 1 : BFMP Annual Checklist

Dandy Premix Quarries Pty Ltd

(T/a Grantville Commercial Sands - GCS)

Work Authority No.1488 (WA1488)

GCS - WA1488

BUSHFIRE MANAGEMENT PLAN (BFMP)

Annual Bushfire Management Plan (BFMP) Checklist

Item	Checklist - Inspect or Review (Description)	Status			Observations / Recommendations /Actions
		Y	N	N/a	
1	Inspect the site infrastructure - Weighbridge/Administration Office & Amenities Building and Workshop - for overgrown vegetation, rubbish, any flammable materials (pallets, etc.) to satisfactory standard of 'housekeeping'				
2	Inspect Sand Washing and Dewatering Plant, including Radial Stacker, Laboratory and MCC Buildings for overgrown vegetation, rubbish, any flammable materials (pallets, etc.) to satisfactory standard of 'housekeeping'				
3	Inspect Flammable Liquid stores and Bulk Diesel Fuel Bowser (refuelling) Area				
4	Inspect for storage of any Dangerous Goods				
5	Inspect Water Cart(s) for effective operation and working condition of fittings, incl. CFA fire truck compatible coupling				

Item	Checklist - Inspect or Review (Description)	Status			Observations / Recommendations /Actions
6	Inspect Water Pumps (incl. back-up pumps) at Stored Water Sources for effective operation and condition of fittings incl. CFA fire truck compatible coupling				
7	Inspect Portable Fire Extinguishers - Review location, type and service tags				
8	Inspect Fire Hoses - Review location, condition and operation				
9	Inspect WA1488 Site Access/Egress from Bass Highway (Emergency Assembly Area No.2 - Evacuation), including operation and security of gates, vegetation and signage.				
10	Inspect Sealed Site Access Road for condition - surface, clearance and turning circle from trees/vegetation, etc. for a 8 tonne vehicle				
11	Inspect Plant Hardstand Area - Sales Loading Area - 'Emergency Assembly Area No.1' for signage, safety conditions and adequacy of area for emergency assembly and staging purposes				
12	Inspect Haul Roads for condition and use in the event of a Bushfire, or other type of Emergency				
13	Inspect condition of designated 'Fire Access Tracks' and 'Fire Breaks' - Overgrown vegetation, or overhanging tree branches				
14	Review all Fire Suppression Equipment service inspection dates and ensure they are current (up-to-date)				
15	Inspect and review to ensure 'Backup systems' for Water Pumps, Power, etc., that may be required to supply water for Emergency Services (CFA) are in good working condition and available for use, e.g. Generator(s)				
16	Review the validity of the 'Hot Work Permit' and Safe Work Method Statement (SWMS) templates for use at Quarry Site				

Item	Checklist - Inspect or Review (Description)	Status			Observations / Recommendations /Actions
17	Review performance against the 'No Smoking' Policy				
18	Review 24 Hour Emergency Contact Details and ensure they are current (up-top-date)				
19	Review validity of Site Induction, Bushfire Management Plan (BFMP) and Emergency Management Plan (EMP)				
20					

Inspector Name(s):	Date of Inspection	Signature:

Position:	Additional Comments or Recommendations:

WA1488 – Dandy Premix Quarries Pty Ltd
1381-1395 Bass Highway, Grantville, VIC 3984

Work Plan Variation Application, January 2020

Surface Water Management Plan

Ambient Surface Water and Groundwater quality monitoring has been in place at the WA1488 site since late 2012 in accordance with the recommendations of Craigie (Drainage and Water Quality Management, May 2012) and JLCS (Hydrogeological Assessment, May 2012) and is proposed to continue to run for the lifetime of the sand extraction operations.

Surface water parameters have been monitored to those listed in Table 9 of the Craigie report and complimentary Groundwater monitoring has been conducted in accordance with the JLCS report.

It should be noted the Craigie report (May 2012) has been included as Appendix A of the Water Technology, 'Report WA1488 Grantville – Work Plan Variation Expansion of Sand Extraction Operations, Sand Washing & Dewatering Plant' of 12 December 2019, which builds on the earlier Craigie assessment and recommendations.

The frequency of Surface Water Quality Monitoring is directly reflective of seasonal changes and the occurrence of wet weather conditions (consistent and soaking rainfall events leading to surface water and tributary flows), that produce the dominant concern from a water quality viewpoint.

The prolonged drought prevailing throughout large tracts of Australia, which has extended to almost drought like dry conditions at Grantville in South West Gippsland, has made it difficult to be 'hard and fast' about our Surface Water monitoring program. We have been forced to more 'opportunistic' to take advantage of the necessary wet weather conditions. However, we have consistently managed to obtain four (4) sets of monitoring results per year and this will continue to be our minimum approach to the sampling and analysis of Surface Water Quality.

Whenever these ambient conditions exist, Dandy Premix takes the opportunity to monitor, in addition to the scheduled three monthly intervals of February, March, August and November. In the earlier five years of the quarry site, i.e. 2012 to 2017, monitoring runs were undertaken as frequently as possible to better define wet weather runoff responses and water quality behavior.

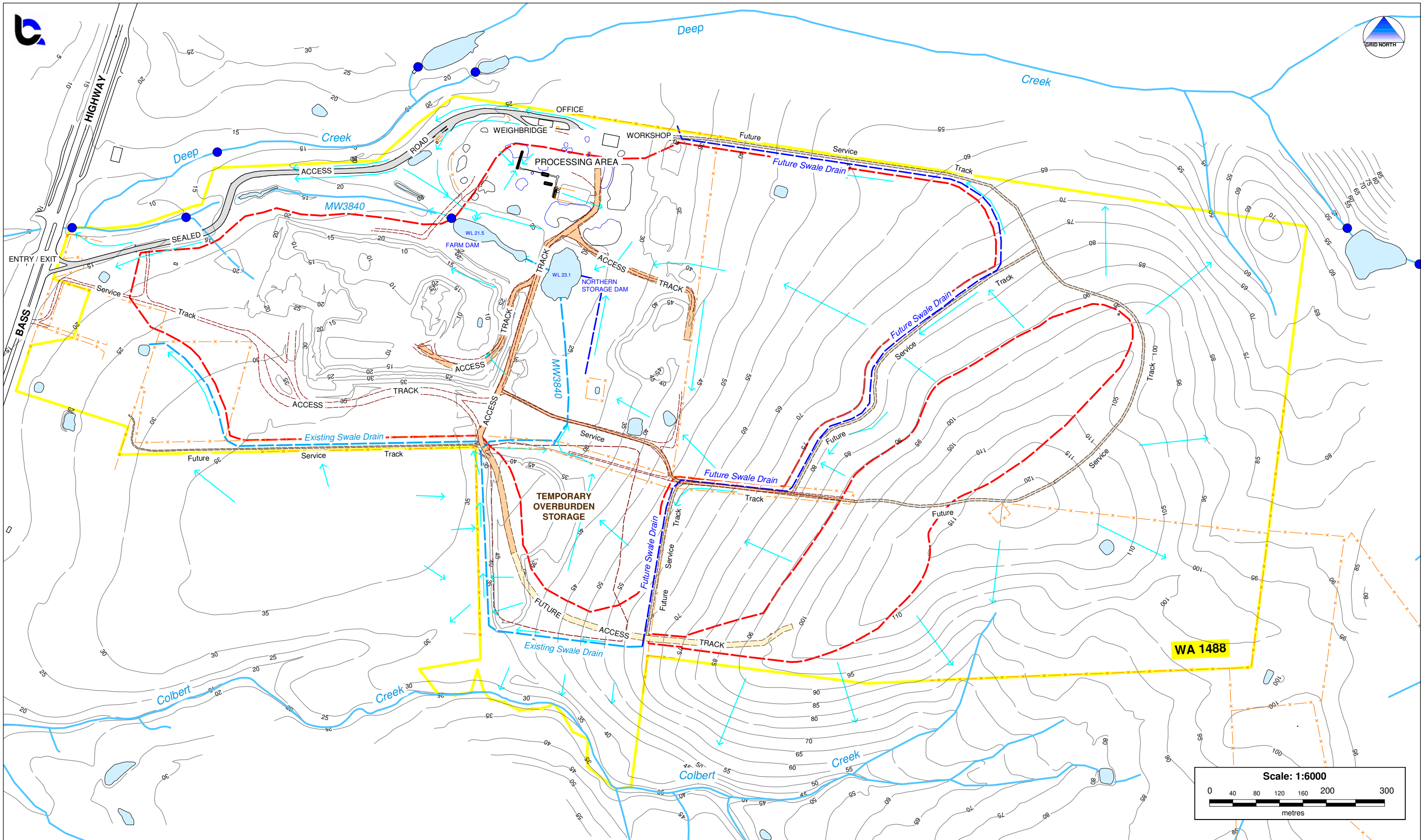
Recent advice received from Pat Condina and Associates, Water Quality Monitoring and Assessment, in association and support of Neil M Craigie, recommends we cease laboratory testing of WA1488 Surface Water for Heavy Metals and Total Petroleum Hydrocarbons as there has not been any detected presence of these in the substantial body of sampling results data achieved to date.

We propose to continue to analyse for all the remaining parameters from the Surface Water samples taken and equally, to maintain the same sampling location regime, i.e. eight (8) Sampling Sites/Locations.

Groundwater does not present the same monitoring constraints. We will continue to monitor each of the current eight (8) Groundwater Investigation Bores on the site, on a three (3) monthly scheduled basis.

Dandy Premix Quarries P/L, Grantville...Drainage and Water Quality Management

TABLE 9 Surface Water Water Quality Test Results-WA 1488, Grantville														
Site	Date	Temp	Conduct- ivity (uS/cm)	pH	DO (mg/L)	Turbidity (NTU)	Suspended Solids (mg/L)	TKN (mg/L)	Nitrate N (mg/L)	Nitrite N (mg/L)	TN (mg/L)	TP (mg/L)	TPH total petroleum hydrocarbon (ug/L)s	Heavy Metal Scan (ugL)
The outlet pit of the North Storage Dam														
The outlet pit of the bioretention basin														
The tributary at the western property boundary														
Deep Creek just upstream of the tributary confluence														
Deep Creek at the Bass Highway														
	Mth 2													
	Mth 3													
	Mth 4													
	Mth 5													
	Mth 6													
	Mth 7													
	Mth 8													
	Mth 9													
	Mth 10													
	Mth 11													
	Mth 12													



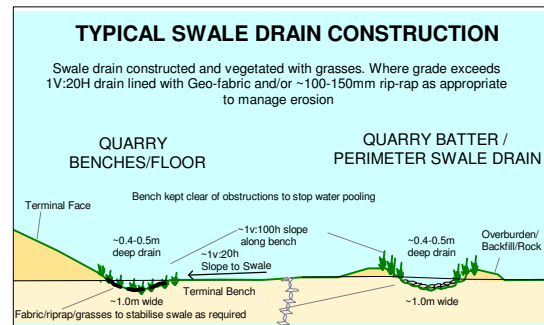
LEGEND

- WORK AUTHORITY BOUNDARY
- EXTRACTION BOUNDARY
- SURFACE WATER MONITORING LOCATION
- CURRENT/FUTURE ROADS / TRACKS
- EXISTING WATERWAYS / SWALE DRAINS
- FUTURE SWALE DRAINS
- SURFACE FLOW

Topographical Mapping Landair Surveys July 2019
Contour Interval 5m RL

MAP ILLUSTRATED AS AT JANUARY 2020

SWALE DRAINS WILL BE ESTABLISHED
AROUND EXTRACTION PERIMETER
AS DEVELOPMENT OCCURS



Dandy PRE MIX

BCA CONSULTING
EARTH RESOURCES

For
DANDY PREMIX QUARRIES P / L

Drawing: A3 - 1910 : Rev 0 Author: IW, CT
Fig1_WaterMmentPlan_0120.WOR
Date: 8/01/2020

Project No: D10-003

Appendix 1

Extractive Industry Work Authority No: 1488
Grantville Sand Pit, GRANTVILLE

**SURFACE WATER
MANAGEMENT PLAN**

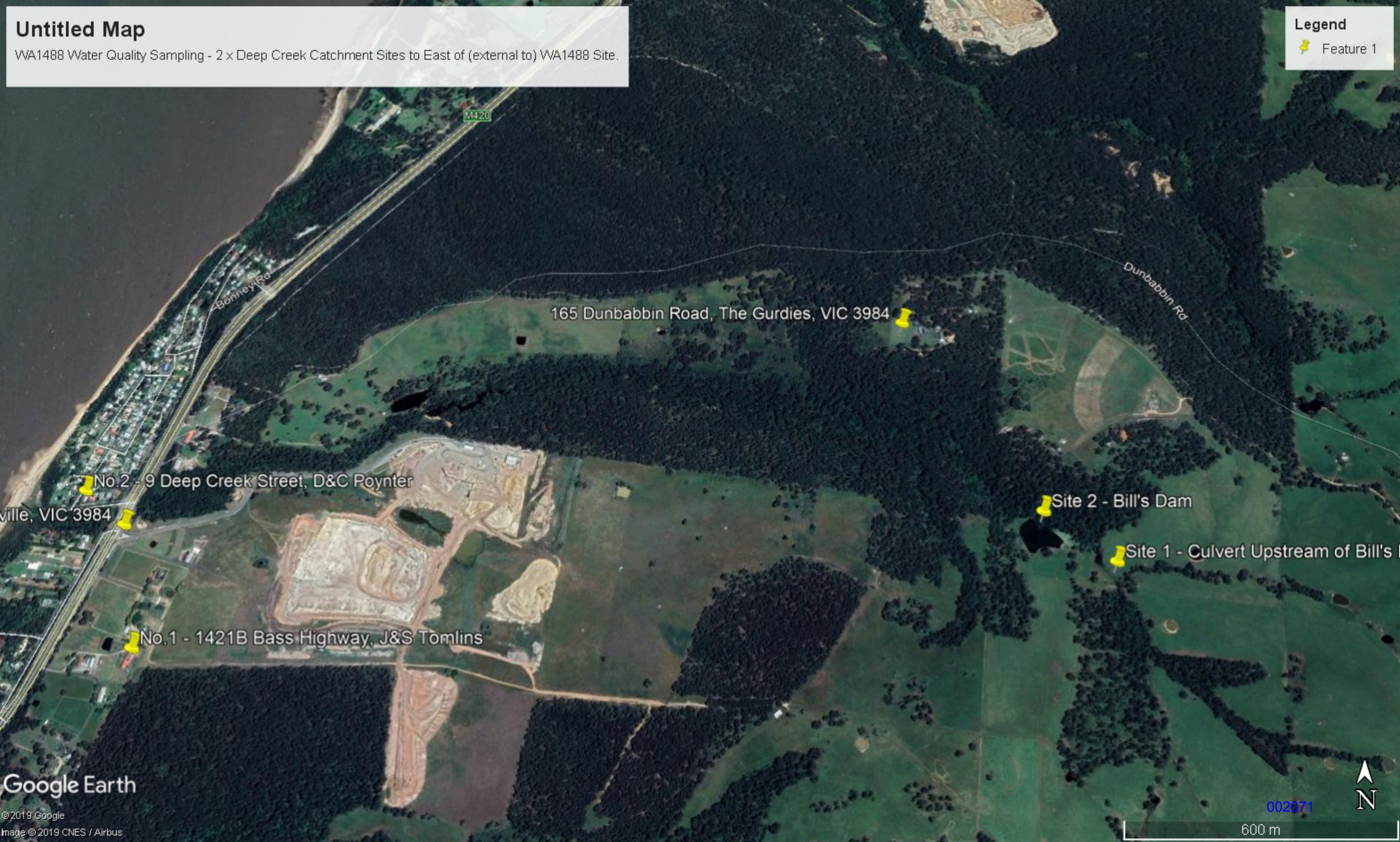
002070

Untitled Map

WA1488 Water Quality Sampling - 2 x Deep Creek Catchment Sites to East of (external to) WA1488 Site.

Legend

Feature 1



DANDY PREMIX QUARRIES PTY LTD

GRANTVILLE SAND QUARRY

1381 – 1395 Bass Highway, Grantville. VIC 3984



BUSHFIRE MANAGEMENT PLAN (BFMP)

BUSHFIRE READINESS & RESPONSE



December 2019

002072

CONTENTS

COMMONLY USED ACRONYMS

1	Introduction	1
	1.1 Background	1
	1.2 Scope	1
	1.3 Approved Site Activities	2
2	Legal Responsibilities	3
3	Dandy Premix BFMP Policy, Objectives & KPOs	4
	3.1 Potential Causes and Impacts	4
4	Bushfire Management Measures	5
	4.1 Managing Bushfire Risks – Bushfire Prevention	5
	4.1.1 Oxygen	5
	4.1.2 Fuel	6
	4.1.3 Ignition Sources	6
	4.1.4 Weather	8
	4.2 Managing Bushfire Hazard – Active Bushfire(s)	8
	4.2.1 Preparation for Managing Active Bushfires	8
	4.2.2 Managing Active Bushfires	9
	4.3 Managing Bushfire Risks – Agency Cooperation	10
5	Control Measures	11
6	Personnel and Training	16
	6.1 Roles and Responsibilities	16
	6.2 Competence and Training	17
7	Monitoring, Reporting and Review	18
	7.1 Monitoring	18
	7.2 Reporting	18
	7.3 Review	19
8	Consultation	19
9	Emergency – 24 Hour Contact Details	20

APPENDICES

Appendices 1 : BFMP Annual Checklist	25
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FIGURES

Figure 1 : Regional Map.....	21
Figure 2 : Fire Management Plan.....	22
Figure 3 : CFA - Know Your Daily Fire Danger Rating	23
Figure 4 : CFA – Compatible Fittings for Tanks, Water Supply (Dams, Groundwater sources) Pump Units and Water Carts	24

TABLES

Table 1.1: Permitted Hours of Operation	2
Table 3.1: Bushfire and other types of Fire Management Objectives and Key Performance Outcomes	4
Table 4.1 Potential Fire Ignition Risks, Controls and Risk Assessment.....	10
Table 5.1: Control Measures, Responsibility and Timing/Frequency.....	12
Table 6.1 Roles and Responsibilities for the Bushfire Management Plan	16
Table 9.1 Emergency – 24 Hour Contact Details	20

COMMONLY USED ACRONYMS

AS	Australian Standard
BCA	BCA Consulting Services – Earth Resources
BCSC	Bass Coast Shire Council ('Council')
CFA	Country Fire Authority
CSEP	Coarse Sand Extraction Pit
DFDR	CFA – Daily Fire Danger Rating
DELWP	Department of Environment, Land, Water and Planning
DJPR	Department of Jobs, Precincts and Regions
EMP	Emergency Management Plan
ERR	Earth Resources Regulation
EPA	Environment Protection Agency
FMSEP	Fine Medium Sand Extraction Pit
BFMP	Fire Response & Readiness Plan
GCS	Dandy Premix Quarries Pty Ltd (T/a Grantville Commercial Sands)
HSMS	Health & Safety Management System
MFMP	Municipal Fire Management Plan (Bass Coast)
MR(SD)A	Mineral Resources (Sustainable Development) Act 1990
NV	Native Vegetation
WA	Work Authority
WA1488	DJPR/ERR - Approved Work Authority Number 1488, granted under section 77I of the <i>Mineral Resources (Sustainable Development) Act</i> 1990
WP	Approved Work Plan - part of WA1488
WPV	Work Plan Variation (to Approved Work Plan – part of WA1488)

1 Introduction

1.1 Background

This Bushfire Management Plan (BFMP) covers both localized fire and bushfire management for the Dandy Premix Quarries Pty Ltd, trading as Grantville Commercial Sands (Dandy Premix), WA1488 Sand Quarry Site, comprised of 156 hectares located at 1381-1395 Bass Highway, Grantville, 3984.

The BFMP also covers bushfire management of the adjoining 70 hectares of Dandy Premix freehold land to the north of the WA1488 Sand Quarry Site.

This BFMP falls under both of the Dandy Premix Health and Safety Management System and ISO 9001-2015 Quality Management System.

1.2 Scope

The scope of this BFMP includes the following elements:

- The activities approved under the Mineral Resources (Sustainable Development) Act 1990, administered by the Department of Jobs, Precincts and Regions (DJPR), Earth Resources Regulation (DJPR/ERR) Work Authority No.1488 (WA1488), including the Approved Work Plan forming part of WA1488;
- The conditions and endorsed plans approved under the Planning and Environment Act 1987, by Bass Coast Shire Council (BCSC), Planning Permit No.120388, issued 7 August 2013;
- Legal requirements under the Planning and Environment Act 1987, Bass Coast Planning Scheme, Clause 13.02-1S Bushfire Planning and Local Provision – Bushfire Management Overlay (BMO), Map No.14BMO;
- Consultation with the CFA in development of this BFMP in accordance with the compliance standards of the Country Fire Authority Act 1958 and the Country Fire Amendment Regulations 2013;
- The storage of flammable liquids (Diesel Fuel, Oils, etc.) at the Sand Quarry in compliance with AS 1940-2004 - The Storage and Handling of Flammable and Combustible Liquids;
- The objectives and key performance outcomes for this Plan and the Sand Quarry;
- Roles and responsibilities in the implementation of this Plan;
- Competence training and awareness of Dandy Premix personnel and contractors;
- Fire and Bushfire management practices that will be implemented throughout the ongoing operations of the Sand Quarry;
- Fire related record keeping, including Incident Report procedures;
- Regular (scheduled) review of this Plan.

These elements reflect the specific issues outlined in the December 2019, Risk Management Plan, section 2.13 – Fire, of the Work Plan Variation application for further development of extraction activities and the introduction of sand washing at the WA1488 Grantville site.

1.3 Approved Site Activities

Extractive industries activities within the Dandy Premix, Grantville Sand Quarry site comprise the full range of activities under the 2013 WA1488 endorsed Work Plan and approved as part of Planning Permit No.120388 of 7 August 2013, plus those proposed for approval under the December 2019 Work Plan Variation application. Those activities include, but are not limited to the following:

- Topsoil and Clay Overburden removal by excavator;
- Stockpile placement of Clay Overburden;
- Stockpile placement of Topsoil;
- Sand extraction by excavator;
- On-site load (by excavator) and haul operations;
- Sand screening and blending operations including Sales Stockpiles;
- Laboratory testing of Sand blends for grading conformity;
- Sales loading of Sand products to on-road trucks;
- Weighbridge operations;
- Fixed Sand Plant maintenance service and repair operations;
- Service and repairs to Mobile Plant – Haul Trucks, Excavators, etc.;
- Sales and Administration;
- Site (property) maintenance – Fences, woody and herbaceous weed spraying & management, grass mowing, maintain fire access tracks, monitor and control (as appropriate) pest animals, i.e. Foxes, Rabbits and Feral Pigs.

Table 1.1 outlines the hours of operation of the permitted use at the WA1488 site under Bass Coast Shire Council (BCSC) Planning Permit No.120388, issued 7 August 2013.

Table 1.1: Permitted Hours of Operation

Activity	Monday to Friday	Saturday
Site Establishment/Construction	6.00am – 7.00pm	6.00am – 1.00pm
Extraction	7.00am – 6.00pm	7.00am – 1.00pm
Processing	6.00am – 6.00pm	6.00am – 1.00pm
Product Loading and Despatch	6.00am – 6.00pm	6.00am – 1.00pm
Maintenance	6.00am – 10.00pm	6.00am – 10.00pm
Public Holidays excluded except for Maintenance operations. Queuing must not occur on the Bass Highway		

Additional Site Activities that the Dandy Premix December 2019 Work Plan Variation seeks approval for, include, but are not limited to:

- Removal of Native Vegetation for establishment of the Coarse Sand Extraction Pit (CSEP), upper elevations in the eastern part of the site;
- Further development of the existing Fine Medium Sand Extraction Pit (FMSEP), including to:
 - Remove for Sand extraction two existing, but limited capacity, surface water storage dams – Farm Dam and Northern Storage Dam;
 - Remove for Sand extraction the poorly defined (shallow depression), and highly ephemeral eastern (upper) reach of Melbourne Water asset, MW3840; and
 - Extract Sand from below Groundwater using a Cutter Suction Dredge (floating pontoon) in the FMSEP pond;
- Install additional Plant to enable the introduction of Sand Washing and Slimes Dewatering via a Belt Press, with the resultant production of spadeable Filter Cake for use in rehabilitation at the site.

The quarry site and the bushfire management plan are included in Figure 1 Regional Plan and Figure 2 Fire Management Plan at the end of this document.

2 Legal Responsibilities

The primary legal requirement for the Dandy Premix, WA1488 Site to have a Bushfire Management Plan is found under the *Planning and Environment Act* 1987, Bass Coast Planning Scheme, Clause 13.02-1S Bushfire Planning and Local Provision – Bushfire Management Overlay (BMO), Map No.14BMO;

Condition 4 – Fire Management, of the WA1488 – Schedule of Site Specific Work Plan Conditions approved under the MR(SD)A, also states “The Work Authority holder must ensure that management of private land in relation to fire is consistent with public fire management plans for the area”.

BCSC is custodian of public fire management in the WA1488 Grantville area. The ‘Bass Coast Municipal Fire Management Plan (MBFMP), 2018 – 2021, Version 3, December 2018 refers and this Fire Management Plan aims to be consistent with purposes, controls and guidance provided in the Bass Coast MBFMP. The Bass Coast MBFMP was produced pursuant to the Section 20 of the *Emergency Management Act* 1986 and is deemed to fulfil Section 55A of the *Country Fire Authority (CFA) Act* 1958.

Consideration has also been given in the MBFMP to the identification and notification (AusNet Services) procedures for ‘Hazard Trees’ under the *Electrical Safety Act* 1998 (Vic) and the *Electrical Safety (Bushfire Mitigation) Regulations* 2013.

In late 2009, the *CFA Act* 1958 was amended to make provision for CFA certified **Neighbourhood Safer Place – Bushfire Place of Last Resort (NSPs/BPLR)** locations within municipalities and townships. The Bass Coast MBFMP has designated the Grantville Transaction Centre, Memorial Park, 1504 – 1510 Bass Highway, Grantville as the nearest NSP- BPLR to the WA1488 Sand Quarry Site.

3 Dandy Premix BFMP Policy, Objectives & KPOs

- The key objective and highest priority of the Dandy Premix Fire Management Plan (BFMP) is the protection of human life and the safety of all people working, visiting and living on, or in the vicinity of the WA1488 site.
- The protection of property, assets and the local environment, especially neighbouring residences and Parks Victoria (DELWP) reserves containing protected vegetation communities are the next key objectives.
- Minimising the potential risk of a bushfire through preventative controls and minimising the potential for a bushfire to spread are also key policy objectives.

Table 3.1 presents the objectives and key performance outcomes regarding bushfire management for this BFMP, the WA1488 Sand Quarry Site and adjoining Dandy Premix freehold land.

Table 3.1: Bushfire and other types of Fire Management Objectives and Key Performance Outcomes

Objectives	Key Performance Outcomes
(a) To ensure that all site activities are managed in a manner that reduces to an acceptable level the risk of ignition of a bushfire, or other type of fire within the Sand Quarry Site;	<ul style="list-style-type: none">(i) No bushfires are initiated within the Sand Quarry Site as a result of Quarry-related activities;(ii) No other types of fires are initiated within the Sand Quarry Site as a result of Quarry-related activities;
(b) To ensure that measures are implemented to allow appropriate management of a bushfire, or any other type of fire within the Sand Quarry Site;	<ul style="list-style-type: none">(iii) Any ignition of a bushfire, or other type of fire within the Sand Quarry Site is managed/extinguished without harm to life or property;(iv) In the event a bushfire does encroach upon the Sand Quarry Site and/or adjoining Dandy Premix land, life is protected as the first priority and assistance is provided to the CFA in accordance with this plan.

3.1 Potential Causes and Impacts

The bushfire danger period, or '*bushfire season*' in Victoria generally occurs between 1 December and 31 March (inclusive) of the following year. The bushfire season may vary in longevity depending upon prevailing, or forecast weather conditions and fuel load conditions applicable both at the time and in the immediate area.

Climatic conditions, such as low humidity, can contribute to the severity of a fire season and very severe conditions usually result from:

- Wet, late summer and autumn promoting heavy fuel growth/accumulation;
- Dry springs and the early onset of summer conditions;
- Lower than average annual rainfall, especially throughout the winter and spring seasons; and the
- Occurrence of extended drought conditions.

The sand extraction and processing operations of the Dandy Premix Grantville Sand Quarry has the potential to increase the risk of fires, but the site also potentially acts as an effective fire break, especially between The Gurdies Nature Conservation Reserve and the Grantville Bushland Reserve.

Should a fire occur and be allowed to continue unchecked within either of the Dandy Premix WA1488 and/or adjoining freehold sites, it will pose a threat to:

- The safety, property and assets of neighbouring land owners;
- Quarrying fixed plant, mobile equipment, site infrastructure and other company assets;
- Flora and fauna habitat; and
- Land use, including grass cover, exposing land to soil erosion.

The potential for an active local bushfire to spread into the Dandy Premix and WA1488 land needs to be carefully monitored, e.g. from The Gurdies Nature Conservation Reserve to the north, the Grantville Bushland Reserve to the south and freehold to both the north-east and south-east.

To assist with monitoring, fire danger ratings, bans and early warnings, the WA1488 Quarry Manager, Site Supervisor and the Dandy Premix Manager Sustainability each has the Vic Emergency App downloaded to their iPhones with the WA1488 Site registered as “My Watch Zone”. The App notifies of bushfire “incidents” within a 20km radius of the WA1488 Site and provides detailed advice about the incident, including colour coded warning areas, e.g. Red – Emergency Warning, or Black Line with Grey Fill – Evacuation.

4 Bushfire Management Measures

Three factors must be present for a bushfire to occur and there are several other factors which may occur that will affect the progress of a bushfire. For a fire to occur there must be oxygen, fuel and an ignition source. The progress of a bushfire will be affected by fuel availability (including type and amount), terrain and Weather (including winds, humidity and air temperature).

The following subsection describes the management measures that will be implemented to manage each of these factors.

4.1 Managing Bushfire Risks – Bushfire Prevention

4.1.1 Oxygen

It is not feasible to restrict oxygen to manage risks associated with ignition of a bushfire.

4.1.2 Fuel

Fuel loads within the Sand Quarry Site will be managed in conjunction with Dandy Premix's obligations in relation to the Sand Quarry Site, the s173 Agreement - Revegetation and Conservation Plan and the DELWP Native Vegetation Removal and Offset Management Plan.

Buffer zone of a minimum of 20m between the WA1488 Extraction Area developments and any Sand Quarry Site vegetation, or adjoining site vegetation with the potential to be a bushfire hazard, will be maintained with the purpose to ensure that a reduction of bushfire fuels occurs between the potential bushfire hazard, any infrastructure, fixed operating plant, mobile operating plant, haul roads and actively engaged personnel.

The buffer zones will be maintained by use of the following measures:

- Overhanging tree limbs and shrubs will be pruned, or maintained in such a manner that the vegetation is neither continuous, or a hazard threat;
- Grass and other fine fuel load will be slashed, harrowed, or maintained to below a non-hazardous height, e.g. 10cm; and
- Where required, crushed rock will be used to maintain both access and fuel reduction.

4.1.3 Ignition Sources

Sources of ignition are likely to fall into one of four source categories:

- Quarry-related activities;
- External ignition sources, e.g. embers from a nearby bushfire;
- Electricity transmission lines; and
- Lightning.

Of the above categories, Dandy premix can only control the first source. The following management measures will be implemented to minimise the risk of Quarry-related activities providing such a bushfire ignition source.

4.1.3.1 Mobile Plant Operations

- No earthmoving equipment will be used to clear vegetation during periods of Total Fire Bans.
- Mobile equipment working in vegetated areas will not be left unattended with the engine running.
- Mobile equipment working in a vegetated area of the Quarry Site will be inspected to ensure that it does not pose a risk of igniting a bushfire; this will include inspection of exhaust and electrical systems.
- All other Quarry-related activities will be undertaken in cleared areas (within Sand Extraction Pits, Hardstand Area - Processing Plant, Stockpiling, Sales Loading, Workshop, Weighbridge, etc.) when the limited and progressive site vegetation clearing is not in operation, i.e. has ceased.

- All mobile equipment (earthmoving and haul trucks) will be maintained in good working order with appropriate exhaust and fire suppression/extinguishing systems.
- The refuelling of mobile equipment will be undertaken within the designated fuel bay located on the Hardstand cleared area of the Quarry Site.
- All vehicles and mobile plant will be turned off during refuelling.
- 2.0kg, or 4.5kg ABE Dry Powder Fire Extinguishers will be installed and maintained as fully serviced within Quarry Site vehicles, mobile plant and designated fixed plant, Workshop and ancillary infrastructure (Admin/Amenities) locations.
- The cannon and spray bar on the Quarry Site Water Truck will be regularly inspected and tested to ensure it remains fully operational and effective. The CFA compatible fitting will also be checked for integrity.
- All mobile equipment will be equipped with appropriate and operationally effective Quarry Site communications equipment, including UHF (Channel 20) two-way radios and/or mobile telephones.
- The “No Smoking” policy will continue to be rigorously enforced across the Quarry Site.

4.1.3.2 Other Operations

- Continue to ensure the “No Smoking” policy is enforced across all other operating areas of the Quarry Site, e.g. Workshop, Processing Plant, Laboratory, Sales Loading Area, etc.
- As far as practicable, welding, cutting and grinding operations will be confined to and conducted within the Workshop area; however, if unavoidable, these operations will only be conducted within a cleared area of the Quarry Site under extenuating circumstances with fire extinguishing resources on watch and at the ready.
- Quarry management will maintain a focus on good housekeeping to avoid the build-up of fuel loads and/or potential fire hazards.
- All Quarry Site operating work areas will be equipped with suitable fire extinguishers and their locations indicated by appropriate signage.
- Hydrocarbons will only be stored on the Quarry Site within an appropriately constructed and bunded hydrocarbon storage area within the Workshop with suitable fire extinguishers and appropriate signage in the immediate storage area.
- All fire extinguishers will be serviced six monthly with service records tagged to each extinguisher.

4.1.4 Weather

The CFA Daily Fire Danger Rating (DFDR) is an assessment of the potential fire behavior, the difficulty of suppressing a fire and the potential impact on the community should a bushfire occur on a given day.

The DFDR is determined by the Fire Danger Index (FDI) which is a combination of air temperature, relative humidity, wind speed and drought factor. An FDI of 1 (Low-Moderate) means that a fire will not burn, or will burn so slowly that it will be easily controlled, whereas an FDI in excess of 100 (Catastrophic) means that a fire will burn so fast and so hot that it will be uncontrollable.

The Quarry Manager and/or Quarry Supervisor are required to check the DFDR in the local area of the Quarry Site, on-line via the Vic Emergency, or CFA apps and/or websites on a daily basis during the fire season (start December to end following March).

Should the DFDR be any of Severe, Extreme, or Code Red and when a Total Fire Ban has been declared, the Quarry Manager and/or Quarry Supervisor will:

- Notify Quarry Site personnel of the heightened bushfire risk and stress to personnel the need to be vigilant in managing potential ignition sources;
- Regularly check vulnerable areas of the Quarry Site and the horizon for evidence of local smoke; and
- Regularly check and be aware of Warnings and Incidents on the Vic Emergency App, 'My Watch Zone' for the Quarry Site on their iPhones.

4.2 Managing Bushfire Hazard – Active Bushfire(s)

4.2.1 Preparation for Managing Active Bushfires

The following measures will be implemented to enable appropriate management of active bushfires:

- Incorporate the Bushfire Management Plan into the overarching Emergency Response Plan for the WA1488 Quarry Site;
- Provide for the use of available water sources, e.g. pumps, hoses and the water cannon on the water truck, to manage ember attack on the Quarry Site buildings – Weighbridge, Office & Amenities, the Workshop and the Sand Washing and Processing Plant, inclusive of MCC and Laboratory;
- Ensure all UHF two-way radios and/or mobile phone communications equipment is working on all mobile equipment ensuring ready communications to all personnel;
- Establish two CFA compatible connection points from the Quarry Site's water infrastructure, e.g. Farm Dam, Tank, adjoining Dandy Premix land Dam and/or Groundwater pontoon pump supply, to ensure accessibility of these water sources to firefighting equipment, including that of the local CFA equipment;

- Maintain the Quarry Site Access Road to the Bass Highway to ensure safe access and egress from the site in the event evacuation is required/called;
- All active Haul Roads and Fire Access Tracks will be regularly checked and cleared of all obstructions and debris to enable safe ingress and egress of personnel from various areas of the Quarry Site;
- Fire breaks, some of which double as Fire Access Tracks, established within and around the perimeter of the Quarry Site will also be maintained to reduce fuel load, in order to also ensure ingress and egress for firefighting vehicles and personnel; and
- Fire management and awareness training will be provided to all Quarry Site personnel, while firefighting training, specific to tasks and procedures, will be provided to the required personnel.

4.2.2 Managing Active Bushfires

Following the identification of an imminent bushfire threat, the following fire management measures will be implemented:

- Human life is the most important asset and the key objective for protection. Only if it is safe to do so, will property be considered for protection as a secondary asset;
- The bushfire will be reported to the CFA on “000” as the earliest opportunity by the Quarry Manager, or the Quarry Supervisor;
- If a fire, or a small bushfire has started in close proximity to an operational work area within the Quarry Site and both resources and facilities are on-hand to put it out and it is safe to do so, then it should be contained and extinguished as quickly as possible; if necessary, in conjunction with the CFA if they have been requested to attend;
- If the bushfire is not in close proximity and it is determined to be safe to do so, the Quarry Manager can decide that quarry operations will continue with the following provisions:
 - Fire-fighting equipment, including the Water Truck, fire extinguishers and suitable earthmoving equipment, e.g. Bulldozer, and/or Grader will be brought close-to-hand, i.e. be immediately ready and available;
 - UHF two-way radio and local AM radio (ABC – 774) will be monitored for bushfire updates; and
 - The Quarry Manager, or Quarry Supervisor, will make regular checks to determine if the fire front is moving closer to the Quarry Site, or is increasing in its threat to Quarry personnel and the Quarry Site.
- In the event of a local bushfire beyond the Quarry boundary, all personnel on the Quarry Site would be directed to assemble at ‘Emergency Assembly Area No.1’ on the Plant Hardstand Area. A head count would be undertaken to confirm all Quarry Site personnel, contractors and visitors are accounted for. At this time, instructions as to specific procedures to be followed, i.e. site protection, or site evacuation, would be issued by the Quarry Manager in accordance with the BFMP as part of the broader Emergency Management Plan.

4.3 Managing Bushfire Risks – Agency Cooperation

Unless quickly controlled and extinguished, bushfires usually impact on more than a single property; it is therefore critical, that in addition to other landowner consultation, that Dandy Premix ensures the CFA, Emergency Victoria, Victoria Police and Ambulance Victoria, agencies responsible for emergency response services are adequately informed about activities at the WA1488 Grantville Quarry Site.

Other relevant government agencies, e.g. DJPR/ERR, DELWP, PV, EPA, SRW, etc. and Council also have a need to be suitably informed and aware about activities within the Quarry Site and adjoining Dandy Premix land.

Consequently, the following will be implemented annually, sufficiently in advance of the upcoming bushfire season, e.g. September – October annually:

- Dandy Premix representatives will meet with the relevant emergency service responders, government agencies and Council to provide an overview of quarry activities during the preceding 12 months and anticipated activities during the forthcoming 12 months; and
- A separate Quarry Site meeting will be held with officers of the CFA, District 8 – South East, Fire Prevention and Preparedness Branch, to provide an updated overview of the quarry layout. An inspection of the Quarry Site will be undertaken to identify areas where fuel loads are required to be reduced, Fire Access Tracks and Fire Breaks requiring maintenance and to discuss any other related fire prevention and preparedness matters.

Table 4.1 Potential Fire Ignition Risks, Controls and Risk Assessment

Ignition Source	Background Information	Inherent Fire Risk Assessment			Control(s)	Residual Risk Rating
		Likelihood	Consequence	Risk Rating		
Lightning Strike	Uncontrollable	Rare	Critical	Very High	BFMP	High
Arson	Uncontrollable	Possible	Moderate	Medium	Security in place, 3 x residential occupancies on Quarry Site to Bass Highway	Medium
Cigarette Smoking		Possible	Moderate	Medium	Reinforce 'No Smoking' Policy	Low
Dangerous Goods Storage	No DG's stored on Quarry Site	Rare	Insignificant	Low	Not Required	Low
Diesel Bulk Storage	Category 4 Flammable Liquid. 15,000L above ground Storage Tank	Unlikely	Minor	Low	Bunded and located on sand based Hardstand Area	Low
Mobile Plant	Rarely work in grassed or	Possible	Major	Medium	Exhaust systems	Medium

Ignition Source	Background Information	Inherent Fire Risk Assessment			Control(s)	Residual Risk Rating
	vegetated areas of Quarry Site. Normally in Sand Extraction Pit and/or on maintained Haul Roads.				vertically directed, spark arrestors and fire extinguishers fitted	
Electrical Failure	Buildings constructed on concrete slabs, metal cladding and metal roofing. Stud & plaster board internals to Weighbridge, Admin & Amenities Building. Exposed steel framing in Workshop. Laboratory & Plant MCC located above ground in modified and insulated container.	Possible	Moderate	Low	Facilities only 6 years old, Certificate of Electrical Safety available. Annual check conducted by Positive Electrics. Fire Extinguishers appropriately fitted, labelled and serviced.	Low
Power (Electricity) Transmission Line	1 x Power Supply, 230/460, Two Phase, 3 Wire cable, approx. 900 metres of overhead high voltage supply to sub-station.	Unlikely	Moderate	Low	Route of overhead line maintained clear of trees – no potential for interference. From substation cabling is underground to distribution boards.	Low

5 Control Measures

Control measures for the prevention and control of bushfires within or threatening the Dandy Premix WA1488 site and adjoining freehold land to the north, are detailed in Table 1.

They include (but are not limited to):

- Where possible and/or necessary, grazing of pastures to minimise fuel build-up;
- Slashing of grass areas surrounding the quarry access road, site plant and other infrastructure areas, haul road surrounds and designated fire trails;
- Vegetation (overhanging hazardous trees) maintenance around infrastructure, especially electric power lines and the quarry access road;

- Regular service and maintenance of fire-fighting equipment, including the water truck, portable extinguishers, fire-hoses and fire-blankets; and
- Regular communication and site inspection visits from the CFA, including by the local Grantville CFA depot.

Some of these preventative measures are aimed at reducing the severity of a bushfire by reducing the amount of fuel available to burn, should a bushfire occur. This will make any such bushfire easier to control and minimises the level and/or extent of fire damage.

Control measures such as the establishment of defined 'Fire Access Trails' will consider the impact on and protection of native vegetation across the Dandy Premix sites. Any unavoidable requirement to clear native vegetation for such a control measure, will firstly seek a DELWP Native Vegetation Removal and Offset approval.

The WA1488 site has a 12,000L water truck that is capable of use for fire-fighting purposes. The water truck is also equipped with a CFA compatible fitting (CFA male end Pt. No. Se.03.074), enabling it to be used to supply water to CFA fire units.

Water is available from a total of five dams across the two adjoining Dandy Premix properties, however the WA1488 Farm Dam is the major source of water, it is located in a flat, easily accessible (non-vegetated) location and equipped to pump water to the water truck. It currently performs this role for site dust suppression.

In future years, when the Farm Dam is excavated as part of sand extraction activity and forms part of the Fine Medium Sand Extraction Pit (FMSEP), the lake dredged in the FMSEP will provide a ready source of replacement groundwater to the water truck.

Table 5.1 summarises the control measures, personnel responsible for management of the control measure and the timing, or frequency of the control measure.

Table 5.1: Control Measures, Responsibility and Timing/Frequency

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
1	Awareness: All new Dandy Premix (GCS) employees and contractors to attend a GCS site induction prior to commencement of work on WA1488 site. Inductions will ensure awareness and understanding of Dandy Premix objectives, Bushfire and Emergency Management policy and procedures.	All staff & Contractors	Prior to commencement of work on WA1488 site
2	Training: WA1488 Quarry 'Site Emergency (Bushfire) Response Team (SERT)' – will be established and led by the Quarry Manager, supported by the Quarry Supervisor. A number of Quarry personnel will comprise the balance of the SERT on a volunteer basis and be provided with appropriate training, especially in bushfire prevention and firefighting. The CFA will be the major	Quarry Manager, OH&S Manager and Manager Sustainability	Ongoing

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
	training resource. All BFMP & EMP training programs, training schedules and completed training will be recorded at both Quarry Site and personnel levels.		
3	<p><u>Policy and Procedures:</u></p> <p>The most important policy objective is the protection of human life and the safety of all personnel on the WA1488 Quarry Site.</p> <p>Procedures outlined in the BFMP are directed to the protection of human life and thereafter to the protection of plant, building and equipment assets.</p> <p>Only attempt to control and extinguish a bushfire, or other type of fire, when it is possible to do so – Do NOT place yourself or others at risk of injury, or in a life threatening situation.</p>	Quarry Manager, OH&S Manager and Manager Sustainability	Ongoing
4	<p><u>Controls – Fuel Load Reduction:</u></p> <p>Where possible, pasture in the site buffer zones, residential areas and surrounding the Site Access/Egress Roads, will either be grazed, or regularly slashed to avoid the build-up of excessive fire fuel load. This activity includes the spraying of noxious and herbaceous weeds, along with ‘good housekeeping’ especially in areas surrounding the Workshop, the Processing Plant, the Admin/Amenities and Weighbridge building and the Plant Hardstand Area more generally.</p>	Quarry Manager & Site Supervisor	Annual and As Required
5	<p><u>Controls – Activities:</u></p> <p>All ‘hot work activities’ on site, e.g. welding, steel cutting and/or grinding, etc., will whenever possible, be undertaken in the Workshop and will require the issue of a ‘Hot Work Permit’ prior to being undertaken.</p> <p>No welding, steel cutting and/or grinding will be approved, or undertaken on days of Extreme, Code-Red, or Days of Total Fire Ban.</p>	Quarry Manager	Ongoing
6	<p><u>Controls – Systems & Equipment:</u></p> <p>Currently approved fire control systems and equipment (including site UHF Channel 20 communications, portable fire extinguishers, water truck and other equipment) will be serviced and maintained. Appropriate signage shall be in-place and of good condition. The availability and access to water sources for firefighting purposes will also be inspected and maintained in an appropriate condition. These</p>	Quarry Manager, Site Supervisor & Manager Sustainability	Six Monthly and As Required

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
	inspections and maintenance tasks will be documented.		
7	<u>Controls – Assessment & First Response:</u> WA1488 'Site Emergency Response Team' will provide initial assessment and if determined appropriate (controllable), will provide service/response in the event of a bushfire, or other fire at the site. The CFA will be contacted as a priority.	Quarry Manager & Site Supervisor	As Required
8	<u>Controls – Emergency Notification:</u> All fires on Dandy Premix WA1488 and adjoining (north) freehold land during the 'bushfire danger season' will be reported to 000.	Quarry Manager & Manager Sustainability	As required
9	<u>Controls – CFA Attendance to Quarry Site and Personnel Evacuation:</u> The WA1488 sealed Site Access Road at the 1381 Bass Highway entry/egress point will be used as 'Emergency Assembly Area No.2' if site evacuation is required. CFA fire assistance will be directed to this access point and thereafter accompanied into the site.	Quarry Manager & Site Supervisor	As required
10	<u>Emergency Assembly and Evacuation Assembly Areas:</u> The Sales Loading Area of the Plant Hardstand will be used as the main site 'staging and 'Emergency Assembly Area No.1'. The Plant Hardstand is approx. 5.0 ha in size, inclusive of plant and infrastructure, sand-based and devoid of any vegetation (fuel), of which about 2.5 ha is available 'free space' for the assembly and/or mustering of human resources and mobile plant. The Plant Hardstand also has unimpeded site access and egress via the sealed Site Access and Egress Road from/to the Bass Highway (900 metres) and is 'Emergency Assembly Area No.2' in the event of site evacuation.	Quarry Manager, Site Supervisor, All staff, Contractors & Visitors	As required
11	<u>Annual Risk Assessment – Site Conditions & Equipment:</u> Annual inspections will be made prior to the 'bushfire danger season' (July/August) to ensure the adequacy of fire control measures, including firefighting equipment.	Quarry Manager & Site Supervisor	Annually (July/August)
12	<u>Annual Risk Assessment – DGs, Combustibles & Flammables:</u> Annual review of flammable and combustible liquids, or materials stored on site, including updated MSDSs, Dangerous Goods classification and storage conditions) to ensure the	Quarry Manager & Site Supervisor	Annually (July/August)

CONTROL MEASURE		RESPONSIBILITY	TIMING/FREQUENCY
	adequacy of fire control measures and emergency information.		
13	<u>Annual Risk Assessment Review – Policy & Procedures:</u> Annual management review of BFMP and EMP Policies and Procedures to ensure controls are effective, relevant and respond adequately to changed Quarry Site operating conditions. Document and amend both BFMP & EMP as required.	Quarry Manager, Site Supervisor & Manager Sustainability	Annual and As Required
14	<u>Annual Risk Assessment Review – Responsibilities & Accountabilities:</u> Review roles and responsibilities for managing bushfire, other types of fire and/or emergency situations at the Quarry Site. Document and amend both BFMP & EMP as required.	Quarry Manager, Site Supervisor & Manager Sustainability	Annual
15	<u>Consultation & Communications - Internal:</u> Ongoing two-way communication with Quarry Site personnel in relation to the BFMP & EMP through the OHS Toolbox Meetings system. Quarry Site BFMP & EMP reporting will be part of ISO 9001:2015 Quality Management System, Senior Management Meeting agenda.	Quarry Manager & OHS Manager	Monthly
16	<u>Consultation & Communications - External:</u> Ongoing communications and liaison will be maintained with the CFA, District 8 and local Grantville CFA volunteer station staff.	Quarry Manager & Manager Sustainability	Ongoing and As Required
17	<u>Consultation & Communications - External:</u> Ongoing communications and liaison will also be maintained with other emergency service providers and regulatory agencies, e.g. DJPR/ERR, DELWP, Parks Victoria, SRW, Ambulance Victoria, 8-10 Pier Road, Grantville, VIC 3984 (Tel: 9840 3500), Victoria Police and Council as the responsible authority for planning matters and custodian of the Municipal Fire Management Plan.	Manager Sustainability	Ongoing and As Required
18	<u>Consultation & Communications – Community Engagement:</u> Ongoing engagement with the local community in relation to Bushfire activities, the Quarry Site BFMP & EMP will be undertaken through one-on-one meetings, the Grantville ERC and the Dandy Premix website.	Manager Sustainability & Quarry Manager	Four Monthly Grantville ERC and As Required

6 Personnel and Training

6.1 Roles and Responsibilities

Table 6.1 presents the roles and responsibilities of the Dandy Premix personnel within the GCS Grantville Sand Quarry for the implementation of this Bushfire Management Plan (BFMP).

Table 6.1 Roles and Responsibilities for the Bushfire Management Plan

ROLES	RESPONSIBILITIES
Managing Director (Work Authority Holder)	<ul style="list-style-type: none"> Ensuring overarching legal responsibility for compliance to the Bushfire Management Plan by all Dandy Premix personnel, Contractors and Site Visitors at the WA1488 Quarry Site.
Quarry Manager	<ul style="list-style-type: none"> Ensuring compliance to the Bushfire Management Plan by all Dandy Premix personnel, Contractors and Site Visitors at the WA1488 Quarry Site; Training of the Quarry Site personnel in bushfire management (as required) to ensure the BFMP Objectives and Key Performance Outcomes (KPOs) are achieved, e.g. the protection of human life; and Conduct Reviews, Liaise with Quarry Site personnel, Dandy Premix Senior Management, Emergency Service Responders and Report on implementation of the BFMP.
Site Supervisor	<ul style="list-style-type: none"> Assist and support the Quarry Manager as required in the execution of his/her responsibilities under the BFMP; and Operate as 'second-in-charge' to the Quarry Manager in the implementation of the BFMP; and In the absence of the Quarry Manager, assume full responsibility for implementation of the BFMP as required.
Manager Sustainability	<ul style="list-style-type: none"> Oversight compliance of the BFMP at the Quarry Site; and Conduct Reviews, Liaise with Quarry Site personnel, Emergency Service Responders, the Regulator, Statutory Agencies, Council and Report on implementation and changes to the BFMP, as required.
Manager OHS	<ul style="list-style-type: none"> Oversight bushfire management training (incl. firefighting equipment & techniques);

ROLES	RESPONSIBILITIES
	<ul style="list-style-type: none"> • Review/update the bushfire management training service provider and/or course content to ensure its suitability for compliance with the BFMP; • Liaise with Quarry Site personnel on the BFMP as part of the regular OHS Toolbox Meetings; and • Assist and support the Quarry Manager (as required) in monitoring, review and reporting on the BFMP. •
All Personnel	<ul style="list-style-type: none"> • Be fully aware of the Quarry Site BFMP; • Comply with all control measures outlined in the BFMP, e.g. No Smoking Policy; and • Respond positively to instructions from senior Quarry Personnel in relation to implementation of the BFMP. •

6.2 Competence and Training

All Dandy Premix, WA1488 Quarry Site personnel, site Contractors and their employees will undergo site specific bushfire management plan (BFMP) induction awareness training prior to their commencement at the Quarry Site. This BFMP induction awareness training will include, but not be limited to:

- The BFMP Key Objectives and KPOs, i.e. the protection of human life as the primary objective and KPO of the BFMP, do not place yourself or others at risk of injury and only attempt to extinguish a fire when it is possible to do so;
- Awareness of the location and operation of firefighting equipment and resources, e.g. Fire Extinguishers, the Water Truck and Water Resources for filling of the Water Truck;
- Awareness of the emergency response procedures and the two 'Emergency Assembly Areas'; and
- The roles and Responsibilities of Quarry Site personnel for implementation of the BFMP in the event of a bushfire, other type of fire, or Quarry Site emergency situation.

The Manager OHS, Dandy Premix in liaison with the Manager Sustainability and the Quarry Manager will source and arrange for the delivery of an appropriate bushfire (and other types of fire) management training course(s) for those Quarry Site personnel who volunteer to be a member of the 'Site Response Team' in the event of a bushfire (or other fire) at, or threatening the Quarry Site. The bushfire management training will include, but not be limited to:

- Use of the correct type of fire extinguisher for the type of fire;
- Most effective technique(s) in use of a fire extinguisher, e.g. direct extinguisher stream to base of the flame, not at smoke, use a side-to-side, sweeping motion over the burning surface, sweep from front edge to rear, then upwards, etc.

- Once fire extinguished, pull apart burnt areas to further extinguish any 'hot spots';
- Operation of the Quarry Site Water Truck, including filling operations; and
- If a bushfire/fire gets out-of-control, retreat to protect from injury and risk of life.

7 Monitoring, Reporting and Review

7.1 Monitoring

Apart from usual daily operating checks, annual Quarry Site BFMP inspections will be made well in advance of the declared bushfire season. These inspections will typically be conducted in August/September to ensure the adequacy of fire control measures before the impending fire season. They will also form part of the ongoing WA1488 site land management, Native Vegetation and revegetation for conservation measures.

A copy of the Annual Inspection Checklist is included as **Table 7.1** of the Appendices. This will include an evaluation of last year's control measures, the assessment of pasture levels, identification of new and existing areas that require slashing, inspection of 'Fire Access Tracks' Firebreak adequacy, and an inspection of the adequacy and serviceability of firefighting equipment and facilities.

Ongoing maintenance of bushfire controls will be carried out as required and as an outcome of regular operating inspections by the Quarry Manager and/or the Site Supervisor and feedback received from Quarry Personnel and neighbours.

7.2 Reporting

A summary of performance against the objectives of the BFMP, any bushfire management issues and actions arising throughout the year will be presented by the Quarry Manager to the biannual Dandy Premix, Senior Management (Business) Review Meetings.

Any matters of bushfire management significance, requiring amendment to the BFMP for the Quarry Site, will be distributed to relevant regulators and stakeholders.

The Key Objectives and KPOs of the BFMP will be achieved if:

- Fire fuel reduction and hazard control is carried out on a regular basis;
- No bushfire, or other types of fire is initiated on the Quarry Site;
- Any bushfire encountered from neighbouring land, is successfully controlled on the Quarry Site;
- No injuries, or loss of human life occurs with Quarry Site personnel (including Contractors, their staff and Site Visitors) as a consequence of fire; and
- Regular consultation and engagement with the CFA, other emergency service responders, Regulators, Council and local land owners/managers is maintained.

7.3 Review

Initially, the BFMP will be reviewed and updated annually.

If successive annual reviews indicate, it is proposed that while reviews continue annually, the BFMP only updated every 3 years, or as required, following any incidents, improved procedures, or the findings of an annual inspection and management review.

The annual BFMP review will include an assessment of the effectiveness of the established bushfire controls and their performance against the s Key Objective and KPOs of the BFMP.

Progressive amendments, annually, three yearly, or as required, will be made to the BFMP in line with the Dandy Premix (ISO 9001:2015 QMS) continuous improvement process. Any amendments to the plan will be undertaken in consultation with the CFA.

To date the BFMP prevention measures in place have been successful. However, this is not to suggest this will continue to be the case, hence the need for ongoing monitoring, review, training, awareness and diligence.

The sites Emergency Response Procedures, which include response to fire, involve emergency response drills that help to assess the ability and capacity of the Quarry Site, including personnel, to respond safely and adequately in such circumstances. These drills will continue and any improvements needed will be made upon review of the drill performance.

As industry information and processes improve in relation to bushfire management, the BFMP will be amended to improve safety and performance. Quarry Site personnel will be updated and where necessary, trained in respect of the BFMP changes.

8 Consultation

The Fire Prevention and Preparedness Section of the Victorian CFA, District 8 - Dandenong have been consulted and provided their expectations of the Dandy Premix (GCS), Grantville Fire Response and Readiness Plan (BFMP).

Mark Sacco, Fire Safety Office from CFA District 8 attended the 'Initial Site Meeting' of 23 August 2019 in relation to the Dandy Premix Work Plan Variation (WPV) application for the WA1488, Grantville site. The site meeting included a thorough briefing by Dandy Premix of the proposed further development proposal for the site and provided an opportunity for the CFA to improve their awareness of the WA1488 site, its operations and of adjoining Dandy Premix freehold land.

Consultation has taken place and will continue to be ongoing with 45 year longstanding residents on the WA1488 Sand Quarry Site land, Messrs. Roy and Bill Blackmore, former owners of the land. Both Roy and Bill Blackmore have been active members of the Kernot-Grantville CFA in prior years and have an intimate knowledge of the WA1488 Sand Quarry Site.

Broader consultation has also been undertaken with both the Department of Environment, Land, Water and Environment (DELWP), Gippsland Region, as well as Parks Victoria (part of DELWP) in their role as managers of both The Gurdies Nature Conservation Reserve and The Grantville Bushland Reserve. The Municipal Fire Prevention Officer (MFPO) of Bass Coast Shire Council, as the responsible planning authority has also consulted in the formation of this BFMP.

Ongoing annual consultation is planned with the CFA, Emergency Victoria, Victoria Police and Ambulance Victoria in relation to recent and forthcoming operational and fire management activities at the Quarry Site.

Community engagement will be maintained through the ongoing participation by Dandy Premix in the Grantville Environmental Review Committee (ERC), which in part, contains seven Community Representatives.

The Dandy Premix website will continue to be an accessible electronic media platform for notifying the community of Quarry Site activities, development plans and fire management updates. All feedback and complaints received through the website is automatically acknowledge and thereafter a full response is provided to the interested party, or complainant.

9 Emergency – 24 Hour Contact Details

The following Emergency contact details are provided to assist urgent communications and emergency situation responses.

Table 9.1 Emergency – 24 Hour Contact Details

Contact Name	Phone Number	Email / Website	Role / Responsibility
Mark Van Den Heuvel	5678 8899 0417 570 841	grantville@dandypremix.com	Quarry Manager
Garry Cranny	9703 8260 0419 587 440	gcranny@dandypremix.com	Manager Sustainability, Dandy Premix Quarries Pty Ltd
Emergency <ul style="list-style-type: none"> • CFA • Police • Ambulance 	“000” (Triple 0)		Emergency fire and response
CFA Headquarters	9262 8444	www.cfa.vic.gov.au	General fire condition reporting and enquiries
CFA District 8	9262 8444	www.cfa.vic.gov.au	South East (Grantville Area)
VicRoads	13 11 70	www.vicroads.vic.gov.au	Road incidents, hazards, closures and warnings

Figure 1 : Regional Map



Figure 2 : Fire Management Plan

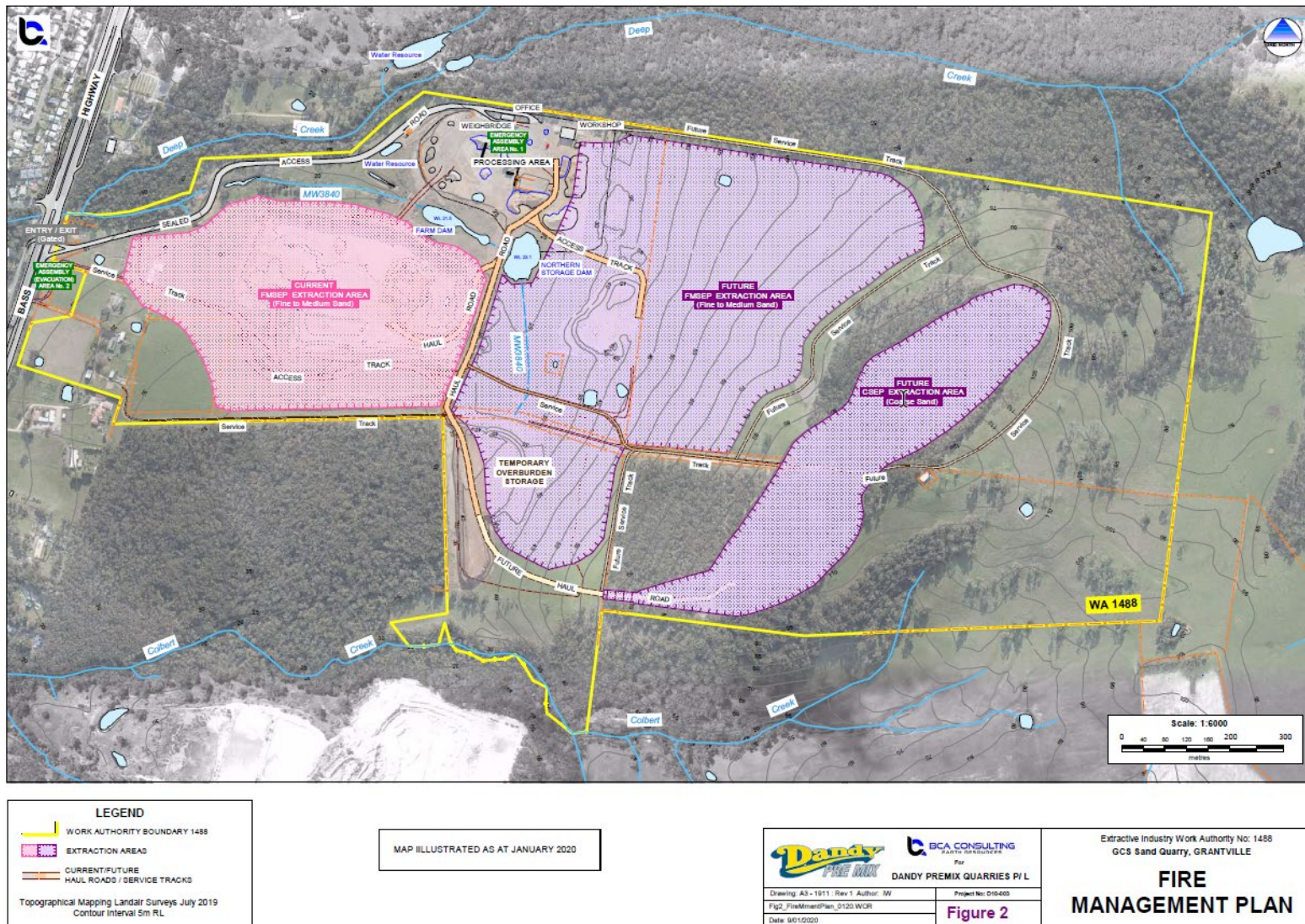


Figure 3 : CFA - Know Your Daily Fire Danger Rating

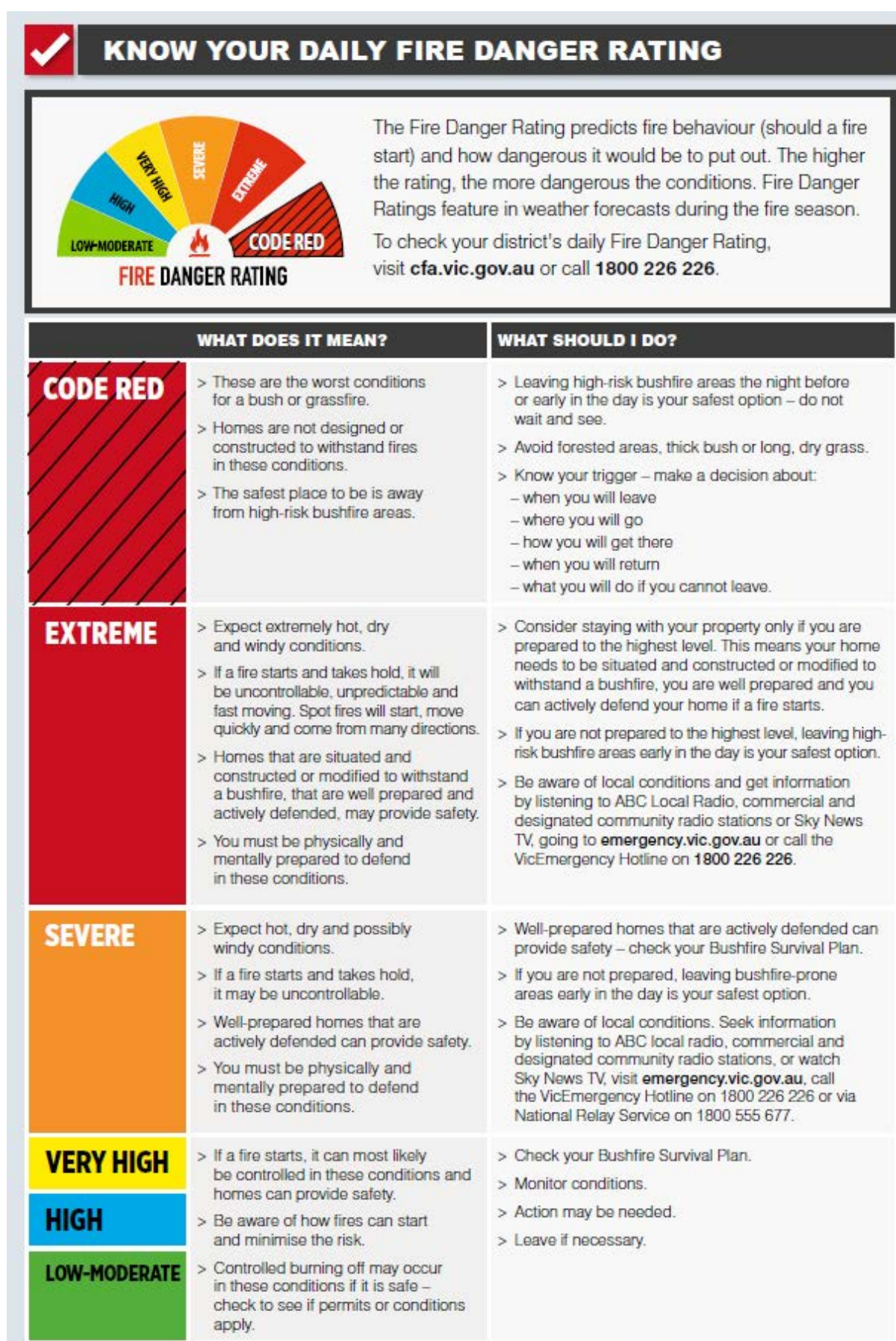


Figure 4 : CFA – Compatible Fittings for Tanks, Water Supply (Dams, Groundwater sources) Pump Units and Water Carts

CFA FITTINGS FOR TANKS

CFA trucks use a special fitting to connect to tanks. There needs to be at least one 64 mm, 3 thread/25 mm x 50 British Standard Pipe round male coupling (CFA Male End, Pt. No. SE.03.074). Consider using a 'tee' to allow the CFA fitting on one side of the branch and personal firefighting fittings on the other side of the pipe, as shown below.

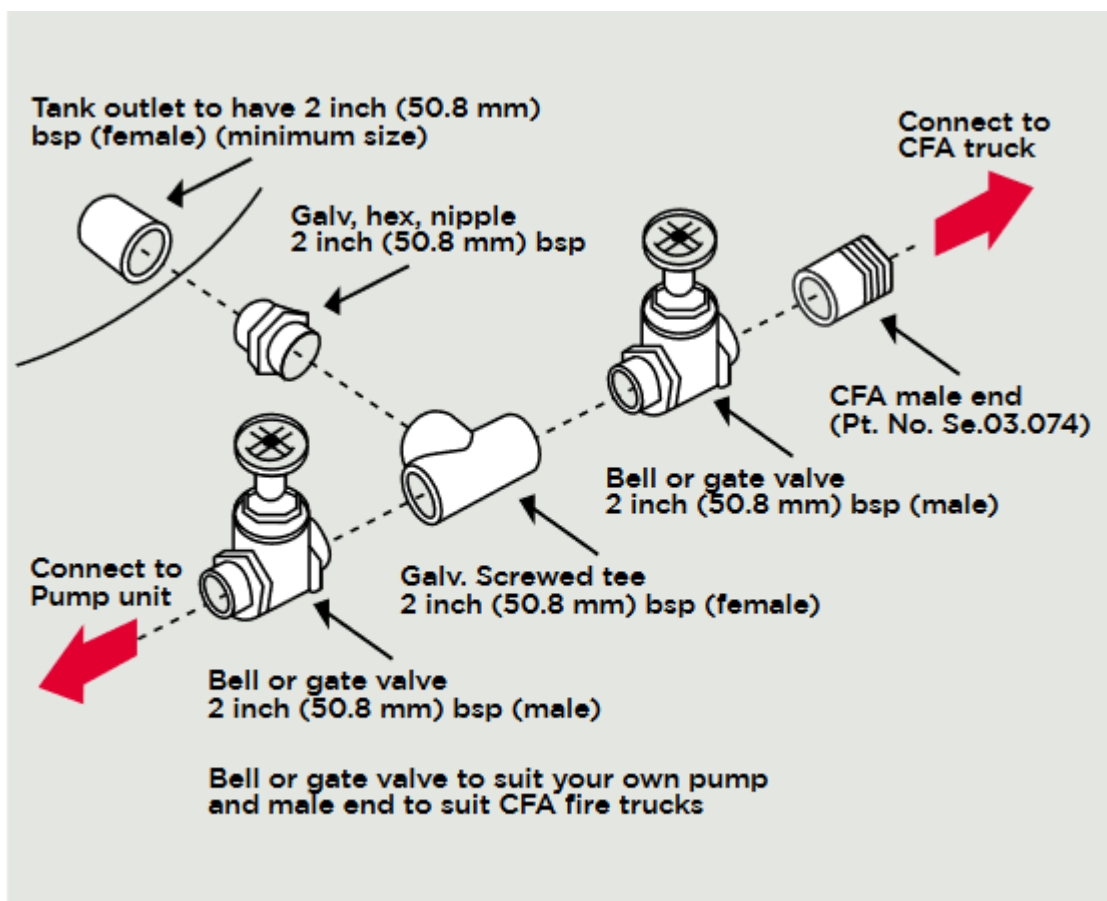


Figure 7: Tank fittings to connect to CFA fire trucks

Appendices 1 : BFMP Annual Checklist

Dandy Premix Quarries Pty Ltd

(T/a Grantville Commercial Sands - GCS)

Work Authority No.1488 (WA1488)

GCS - WA1488

BUSHFIRE MANAGEMENT PLAN (BFMP)

Annual Bushfire Management Plan (BFMP) Checklist

Item	Checklist - Inspect or Review (Description)	Status			Observations / Recommendations /Actions
		Y	N	N/a	
1	Inspect the site infrastructure - Weighbridge/Administration Office & Amenities Building and Workshop - for overgrown vegetation, rubbish, any flammable materials (pallets, etc.) to satisfactory standard of 'housekeeping'				
2	Inspect Sand Washing and Dewatering Plant, including Radial Stacker, Laboratory and MCC Buildings for overgrown vegetation, rubbish, any flammable materials (pallets, etc.) to satisfactory standard of 'housekeeping'				
3	Inspect Flammable Liquid stores and Bulk Diesel Fuel Bowser (refuelling) Area				
4	Inspect for storage of any Dangerous Goods				
5	Inspect Water Cart(s) for effective operation and working condition of fittings, incl. CFA fire truck compatible coupling				

Item	Checklist - Inspect or Review (Description)	Status			Observations / Recommendations /Actions
6	Inspect Water Pumps (incl. back-up pumps) at Stored Water Sources for effective operation and condition of fittings incl. CFA fire truck compatible coupling				
7	Inspect Portable Fire Extinguishers - Review location, type and service tags				
8	Inspect Fire Hoses - Review location, condition and operation				
9	Inspect WA1488 Site Access/Egress from Bass Highway (Emergency Assembly Area No.2 - Evacuation), including operation and security of gates, vegetation and signage.				
10	Inspect Sealed Site Access Road for condition - surface, clearance and turning circle from trees/vegetation, etc. for a 8 tonne vehicle				
11	Inspect Plant Hardstand Area - Sales Loading Area - 'Emergency Assembly Area No.1' for signage, safety conditions and adequacy of area for emergency assembly and staging purposes				
12	Inspect Haul Roads for condition and use in the event of a Bushfire, or other type of Emergency				
13	Inspect condition of designated 'Fire Access Tracks' and 'Fire Breaks' - Overgrown vegetation, or overhanging tree branches				
14	Review all Fire Suppression Equipment service inspection dates and ensure they are current (up-to-date)				
15	Inspect and review to ensure 'Backup systems' for Water Pumps, Power, etc., that may be required to supply water for Emergency Services (CFA) are in good working condition and available for use, e.g. Generator(s)				
16	Review the validity of the 'Hot Work Permit' and Safe Work Method Statement (SWMS) templates for use at Quarry Site				

Item	Checklist - Inspect or Review (Description)	Status			Observations / Recommendations /Actions
17	Review performance against the 'No Smoking' Policy				
18	Review 24 Hour Emergency Contact Details and ensure they are current (up-top-date)				
19	Review validity of Site Induction, Bushfire Management Plan (BFMP) and Emergency Management Plan (EMP)				
20					

Inspector Name(s):	Date of Inspection	Signature:

Position:	Additional Comments or Recommendations: