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PRICE SAND QUARRY (EML 6519, EML 6035, PM (A) 243, PM 243)

MINE OPERATIONS PLAN AND PROGRAM FOR ENVIRONMENT PROTECTION AND REHABILITATION

Prepared for:
Direct-Screens Holdings Pty Ltd

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Declaration of Accuracy

I, Ryan Low the applicant, have taken reasonable steps to review the information and to ensure its accuracy.

Name: Ryan Low
Position: Quarry Operations Manager, Concrete and Aggregates Division SA, Adelaide Brighton Ltd
Dated: September 2022

1. Introduction

1.1 Background

Direct-Screens Holding Pty Ltd operates the Price Sand Quarry (the Site) located on Cowell Road (the Site), consists of two (2) Extractive Mineral Leases (EMLs) 6519, 6035 and two (2) Private Mines (PMs) PMA 243 and 243. The Site is located approximately five (5) kilometres (km) southwest from the township of Price and 136 km northwest of Adelaide as outlined in Drawing No. 1742.DRG.014 **–** Site Location Plan.

Prior to the development of this Mining Operations Plan and Program for Environment Protection and Rehabilitation (MOP PEPR), EML 6035, PM 243 and PMA 243 were operating under the MOP (2011). The operations of the quarry, Mineral Claim (MC) 4463 was registered by Direct-Screens Holdings Pty Ltd on 9 August 2018 over an area of approximately 189.74 Hectares (ha) of land located to the direct west of EML 6035 and PMA 243. The EML was granted by the Department for Energy and Mining (DEM) on 3 December 2020 (EML 6519). As such, this combined revised MOP / PEPR (Program) has been developed to include all PM's and EML's at the Price Sand Quarry and existing operations and will supersede the MOP previously approved in 2011.

The Site is also required to operate in accordance with Environment Protection Licence 2245, issued by the Environment Protection Authority (EPA) and this Program gives consideration to the conditions within the EPA Licence (refer Attachment 1 **–** Environment Protection Licence (No.2245).

EML 6519 has been established to extend tenure to the west of EML 6035 and PMA 243 in support of future operations of the existing quarry and help to facilitate the development of a broader beneficial final landform across the final pit shell, refer Drawing No. 1742.DRG.024R1 **–** Site Layout Plan.

This Program has been developed in accordance with the requirements of Section (72) of the *Mining Regulations* 2020 and Terms *of Reference (TOR) 002 – Terms of reference for a program for environment protection and rehabilitation (PEPR) for extractive mineral quarries.*

To help inform the development of the MOP PEPR, a series of staged Quarry Development Plans (QDP) have been designed.

1.2 Site Overview

An overview of the tenement details is summarised in Table 1 **–** Tenement Detail Summary.

Table 1 **–** Tenement Detail Summary

Tenement Number	EML 6519	EML 6035	PMA 243	PM 243
Tenement Holder / Operator	Direct-Screens Holdings Pty Ltd	Direct-Screens Holdings Pty Ltd	Direct-Screens Holdings Pty Ltd	Direct-Screens Holdings Pty Ltd
Registration Grant Date	03/12/2020	25/02/1999	08/08/1974	08/08/1974
Expiry Date	02/12/2041	24/02/2034	NA	NA
Commodities	Sand	Sand	Sand	Sand
Legal Area (ha)	189.74	40.25	40.46	182.62
Commodity Categories	Construction Materials	Construction Materials	Construction Materials	Construction Materials

(Source: SARIG, 2021)

1.3 Site Contact

Table 2 – Site Contact Details summaries the Site contact details.

Table 2 – Site Contact Details

Contact Name / Position	Ryan Low – Quarry Operations Manager, Concrete and Aggregates Division SA, Adelaide Brighton Ltd
Phone Number	08 8334 4704
Postal Address	16 -18 Phillips Street Thebarton 5031

2. Description of the Existing Environment

2.1 Topography and Landscape

The Site is located on undulating cropping land approximately 5 km from the coastal town of Price on the eastern side of the Upper Yorke Peninsula.

Drawing No. 1742.DRG.012R3 – Exempt Land Map outlines the topography of the Site surveyed on 8 April 2021 with the use of an Unmanned Aerial Vehicle (UAV). The topography of the Site ranges in height between approximately 86 metres Australian Height Datum (mAHD) (north) and 44 mAHD (south east). The Site land elevations are slightly undulating across the northern and western portion, and slopes downwards to the eastern and south-eastern boundaries.

A search of Government of South Australia Enviro Data application *'NatureMaps'* (2021) confirms that the Site lies within the Yaringa Land System (YAG). The YAG consists of rises and slopes of three (3) percent with drainage depressions. A minor portion of the northern portion of the Site and land to the north east corner falls within the Petersville (PET), is characterised by plains, including low lying plains and elevated plains, broad drainage areas and drainage depressions.

2.2 Climate

Site climate data has been sourced from the Bureau of Meteorology (BoM) Price weather station (Site No. 022015) located approximately five (5) km from the Site, refer Table 3 – Climate Data Price Station (Site No. 022015). Mean annual rainfall is 328.5 millimetres (mm) averaging 52.8 rainfall days greater than one (1) mm. The mean maximum temperature is 22.6 degrees Celsius, whilst the mean minimum temperature is 10.8 degrees Celsius. The climate at the Site is characterised as Mediterranean with the majority of rainfall occurring between the months of April and October.

Wind direction vary depended on the season and on time of day. Attachment 2 – Wind Rose Data – Price Station (Site No. 022015) shows that morning wind direction is predominately north or south and is typically south in the afternoon. The 3 pm wind rose shows that wind speeds from the south and south east occasionally reach speeds of greater than 40 kmh in the afternoons.

Table 3 – Climate Data Price Station (Site No. 022015)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Temperature															
Mean maximum temperature (°C)	28.8	28.0	26.3	23.5	19.6	16.6	16.0	17.2	19.9	23.0	25.1	27.4	22.6	67	1944 2020
Mean minimum temperature (°C)	16.0	16.1	14.3	11.4	9.0	7.0	6.2	6.3	7.4	9.5	12.0	14.1	10.8	68	1944 2021
Rainfall															
Mean rainfall (mm)	13.7	19.8	17.6	26.3	36.4	37.2	37.5	35.3	33.0	29.1	20.9	19.5	328.5	71	1944 2021
Decile 5 (median) rainfall (mm)	8.7	8.2	11.2	20.8	30.5	30.9	34.0	35.4	27.4	25.2	16.8	17.1	316.4	76	1944 2021
Mean number of days of rain ≥ 1 mm	1.8	1.9	2.4	3.8	6.0	6.3	7.3	6.9	5.8	4.6	3.3	2.7	52.8	71	1944 2021
Other daily elements															
Mean daily sunshine (hours)															
Mean number of clear days	6.9	7.8	7.1	4.5	3.3	3.4	3.8	4.0	4.3	4.1	5.2	4.6	59.0	30	1965 2010
Mean number of cloudy days	2.9	3.5	3.8	4.7	6.5	5.9	6.0	5.6	5.9	5.7	4.9	3.9	59.3	30	1965 2010
9 am conditions															
Mean 9am temperature (°C)	21.8	21.5	20.0	17.6	14.4	11.5	10.8	12.0	14.5	17.0	18.8	20.6	16.7	58	1944 2010
Mean 9am relative humidity (%)	64	69	70	72	80	86	86	81	73	68	65	64	73	46	1944 2010
Mean 9am wind speed (km/h)	12.8	11.5	11.0	9.9	9.8	10.5	11.5	12.4	14.7	15.8	14.2	13.7	12.3	29	1965 2010
9am wind speed vs direction plot															
3 pm conditions															
Mean 3pm temperature (°C)	26.7	26.6	24.5	22.0	18.2	15.3	15.0	16.0	18.1	20.5	23.1	25.0	20.9	36	1949 2010
Mean 3pm relative humidity (%)	52	52	56	58	65	70	69	65	61	59	53	52	59	25	1949 2010
Mean 3pm wind speed (km/h)	19.7	19.1	17.3	14.2	12.7	12.9	13.8	14.3	17.4	18.9	19.4	20.3	16.7	17	1965 2010
3pm wind speed vs direction plot															

(Source: BoM, 2021)

2.3 Topsoil and Subsoil

A search of the Government of South Australia Enviro Data (2021) application '*NatureMaps'* suggest that the Site is comprised of soft to loose brown calcareous sandy loam to loamy sand soil. The soil profile is generally depicted as being soft to loose at the top and becoming slightly more clayey and consolidated towards the bottom. Quartz fragments are present and tend to increase with depth as does the carbonate content (DEW, 2018).

The topsoil is believed to be relatively thin across the Site varying 10 – 200 mm and contains organic matter as a result of cropping. The subsoil thickness is difficult to gauge as the underlying stratigraphy is dominated by sands, silts and clays until the Cambrian basement at approximately 50 m below ground level. The soil is believed to be generally well drained, except in areas of high clay content. There is a moderate potential for wind erosion due to the loose and soft nature of the sand. Water erosion is more likely in drainage pathways at depressions where the overflow of water can concentrate.

2.4 Geological Environment

A detailed description of the geological environment has been provided in the previous Price Sand Quarry MOP (2011) and the MLP (March 2020) for EML 6519.

2.5 Geohazards

Multiple seismic events have occurred within the region ranging between 1.5 to 2.4 in magnitude (SARIG, 2021). No seismic events originating from the Site have been recorded. The Site is located approximately 0.5 – 1.0 km west from the Ardrossan Fault, and it appears that much of the nearby seismic activity has occurred along this fault predominantly to the south of the Site. As previous nearby seismic events nearby are low magnitude, future events are not considered to represent geohazards at the Site.

The Site does not contain any radioactive, sulphide or asbestiform minerals. The main material on the Site to be extracted is quartz sand. Whilst the quartz may contain silica, the sand only requires screening and the Site does not generate significant levels of fine particle dust containing freshly fractured silica minerals which reduces the likelihood of silica levels breaching the Safework SA Respirable Crystalline Silica (RCS) Workplace Exposure Limits of 0.05

mg/m^3. Regular worker RCS exposure monitoring is undertaken to ensure that dust at the Site does not present a risk to workers or the local community.

2.6 Groundwater

A Groundwater Data Review of geology and groundwater conditions was undertaken by Groundwater Science (GWS) in February 2018, refer Attachment 3 – Groundwater Desktop Study. The assessment consists of a review of available information from the Department for Environment and Water (DEW) Groundwater Data application (WaterConnect). The desktop study indicates that groundwater elevation in the area generally decrease from inland Yorke Peninsula (west of the Site) to the eastern coast of the Yorke Peninsula (east of the Site) with groundwater at the Site predicted to be 30 mAHD within the Cambrian Bedrock. The depth of quarrying at the Site has been restricted to 37 mAHD to ensure that there is at least a three (3) m buffer above the predicted groundwater levels at the Site.

The study also found that local groundwater salinities are in excess of 10,000 mg/L and therefore not suitable for human or animal consumption, or for irrigation. The study also confirmed that there are no Groundwater Dependent Ecosystems (GDEs) located in the vicinity of the Site.

As the groundwater is of unsuitable quality for human consumption or agricultural purposes, there is an absence of GDEs in the area (no receptors), and quarrying activities are not planned to be undertaken within seven (7) m of the predicted groundwater levels (pathway), groundwater impacts from quarrying activities are the Site are not anticipated.

2.7 Surface Water

The Site is not located within a Prescribed Wells Area (PWA), or a Prescribed Water Resource Area (PWRA) as defined by the Department for Environment and Water (DEW). There are no identified watercourses on the Site, however, there are two (2) dams present towards the north of the Site which capture surface water derived from overland flow from the adjacent land.

Surface water on the Site flows from the north and generally exists on the Site along the western boundary or the southeast corner of the Site. The runoff typically flows in a north westerly to westerly direction on the Site, with the exception of it flowing south easterly at the southeast corner of the Site, refer Drawing No. 1742.DRG.013R2 – Surface Water Drainage Map.

As outlined in Section 3.6.7 – Erosion, Sediment and Silt Control, the intent is to direct all surface water internally to drain into the pit. Should it not be possible to direct surface water from a disturbed area into the pit, water will be directed into a containment pond to ensure sediment does not leave the Site.

The mean annual rainfall for the BoM Station 22015 is 327mm. 2015 was the most recent year with near mean annual rainfall (312 mm). During 2015 The highest daily rainfall measured at 31 mm. This was the only day for the year to exceed 30 mm.

2.8 Vegetation, Weeds and Plant Pathogens

2.8.1 Native Vegetation

A Site inspection undertaken by Groundwork Plus on 14 September 2021 confirmed that the native vegetation from EML 6035 and 6519 has been historically cleared of native vegetation and is actively used for cropping and grazing with planted vegetation located around the residential property and the old barn on EML 6519.

Some vegetation is present near the access road into the Site on PM 243 and PMA 243. PM 243 has been continuously operated since 21 November 1984, and therefore in accordance with Regulation 31 of the *Native Vegetation Regulations 2017*, is authorised to clear vegetation incidental to mining operations without the requirement of a Native Vegetation Management Plan. However, mining operations are not anticipated to require the removal of those trees under the current proposed operations.

An *Environment Protection Biodiversity Conservation Act 1999* (EPBC) Protected Matters Search (2021) of the Site and immediate surrounds summarises the Matters of National Environmental Significance (MNES) flora that may occur within three (3) km of the Site, refer Attachment 4 **–** *EPBC Act 1999* Protected Matters Search Report.

The *EPBC Act 1999* Protected Matters Search Report identified three (3) Listed Threatened Plants; critically endangered Ghost Spider-orchid (*Caladenia intuta*), endangered Greencomb Spider-orchid / Rigid Spider-orchid (*Caladenia tensa*) and vulnerable Silver Daisy-bush (*Olearia pannosa subsp. pannosa*) that may occur within the region.

A search of the Government of South Australia Enviro Data (2021), application *NatureMaps* for the presence of native vegetation reported that there were no rated vegetation species within three (3) km of the Site.

No rare or endangered species are likely to be present due to the historical native vegetation clearing of the Site.

2.8.2 Weeds and Plant Pathogens

A search of the Government of South Australia Enviro Data (2021), application *NatureMaps* confirmed Phytophthora is not present within the Site of or immediate surrounds. No vegetation onsite is known to be affected or potentially affected by economically significant pathogens.

The *EPBC Act 1999* Protected Matters Report reported four (4) declared *Weeds of National Significance* (WoNS) as likely to occur in the Site (refer Attachment 4 **–** *EPBC Act 1999* Protected Matters Search Report. The four (4) weed species include Bridal Creeper (*Asparagus asparagoides*), Bitou Bush (Chrysanthemoides monilifera), Boneseed (*Chrysanthemoides monilifera subsp. monilifera*) and the African Boxthorn (*Lycium ferocissimum*).

A Site inspection undertaken by Groundwork Plus on 14 September 2021 did not identify any WoNS onsite.

2.9 Fauna

A search of the *EPBC Act 1999* Protected Matters Search Tool of the Site and immediate surroundings summarises the MNES (fauna) that may occur within one (1) km of the Site (refer Attachment 4 **–** *EPBC Act 1999* Protected Matters Search Report.

The *EPBC Act 1999* Protected Matters Search Report identified 14 listed Migratory Species (Birds), eight (8) Threatened Species (Birds), 20 Listed Marine Species (Birds), eight (8) Listed Invasive Species (Birds) and seven (7) Listed Invasive Species (Mammals).

A search of the Government of South Australia Enviro Data (2021) application *NatureMaps* confirmed the absence of National and State Rated Fauna Sites within a three (3) km search area. Due to historical clearing of vegetation and soil disturbance through cultivation that has taken place at the Site, there is no significant habitat for rare or endangered wildlife on the Site.

The *EPBC Act 1999* Protected Matters Search Report identified seven (7) listed invasive mammal species that may be found within proximity to the Site and adjacent areas including Domestic Cattle (*Bos Taurus*), Cat (*Felis catus),* Brown Hare (*Lepus capensis*), House Mouse (*Mus musculus*), Rabbit (*Oryctolagus cuniculus*), Rat (*Rattus rattus*) and Fox (*Vulpes vulpes*).

2.10 Caves

There are no known caves within the Site or on immediately adjacent land.

2.11 Land Use

The Site is located within the Yorke Peninsula Council and resides within the *Planning, Development and Infrastructure Act 2016* Planning and Design Code rural zone. Drawing No. 1742.DRG.016R2 **–** Land Use Map outlines that the

land use on the Site is agriculture (cropping and grazing) to the north, west and south and predominantly mining to the east. The Site has historically been used for Agriculture (cropping and grazing).

There is no known intensification of land use proposed or planned for land surrounding the Site.

2.12 Proximity to Infrastructure and Housing

As shown in Drawing No. 1742.DRG.015R2 – Proximity to Housing and Infrastructure there are six (6) dwellings located within one (1) km of the current operational area. This includes an unoccupied dwelling located within EML 6519 that is owned by the Direct-Screenings Holdings and was previously used as the quarry managers residence. The dwelling will not be occupied at any time in the future and is not considered as a sensitive receptor.

Two (2) occupied dwellings are located within the PM 243. One (1) is located at the northern end of PM 243 approximately 750 m from the production area and 200 m from the main access road to the production area. The dwelling is currently inhabited and considered as a sensitive receptor. The other is located on the western boundary of PM 243 approximately 1.2 km from the production area and 600 m from the main access track. The dwelling is currently inhabited and considered as a sensitive receptor.

Three (3) other occupied residences are located within 1500 m of the proposed disturbance area. One is located approximately 120 m from the PM 243 northern boundary and approximately 1000 m from the production area. Another is located approximately 440 m from the PM 243 western boundary and approximately 1500 m from the production area. The other is located 570 m north of the EML 6519 boundary and approximately 1400 m from the current disturbance area. These dwellings are considered as a sensitive receptor.

Several other sensitive receptors are located within three (3) km of the production boundary, including a cluster of dwellings south west of the quarry.

The Site also contains multiple sheds and a dam and is bound to the north by an unsealed public road (Crowell Road).

As shown in Drawing No. 172.DRG.015R2 – Proximity to Housing and Infrastructure a 19 kilovolt (kV) South Australian Power Network (SAPN) overhead power line is located within EML 6519 and PM 243 and a 132 kV ElectraNet overhead transmission line within EML 6519. A recently installed underground National Broadband Network (NBN) fibre optic cable follows the easement associated with the 132 kV ElectraNet Overhead Transmission Line.

2.13 Exempt Land

A summary of land parcels, landowners, owners of infrastructure and reasons for exemption of the land under *Section 9* of the *Mining Act 1971* is provided in Table 4 – Exempt Land. The exempt land within the Site is also outlined within Drawing No. 1742.DRG.012R3 – Exempt Land Map.

Table 4 – Exempt Land

Name of person entitled to exemption	Certificate of title or Crown Land details	Reason for exemption	Waiver obtained	Conditions
Direct-Screens Holdings Pty Ltd (unoccupied dwelling on EML 6519)	CT 5277/993 DP 37781 A13	• Land within 400 m of a building or structure used as a place of residence. • Land within 150 m of a building or structure with a value of $200 or more used for commercial purpose.	Yes	Nil.

		• Land used as a cultivated field. • Land within 150 m of a dam.		
ElectraNet	CT 5277/993 DP 37781 A13	• Land within 150 m of a building or structure with a value of $200 or more used for commercial purpose.	Yes	• The quarrying activities will not impact on an area closer than 50 m from either side of the electricity infrastructure as per the requirements of the *Electricity (Principles of Vegetation Clearance) Regulations 2010 (SA)* • The quarrying activities will comply with the *Electricity Act 1996 (SA)* and the *Electricity (General) Regulations 2012 (SA)*
SAPN	CT 5277/993 DP 37781 A13 CT 5433/993 D24178 A2 CT 5382/420 D30869 Q11	• Land within 150 m of a building or structure with a value of $200 or more used for commercial purpose.	Yes	• Vehicle Access (including heavy vehicles) must not be impacted to restrict SAPN ability to access the overhead line and poles 24 hours per day, seven (7) days per week. • Ground levels must not be raised under the existing powerline or around / near the base of the poles. • No excavation is permitted within 10 m horizontally in any direction of any poles. • All required clearances and working safely near powerlines requirements must be met as set out in the *Electricity (General) Regulations 2012*.

2.14 Amenity

Drawing No. 1742.DRG.023R3 **–** Visual Assessment Map when viewed with Attachment 5 **–** Visual Assessment Photographic Plates shows the extent of the Site visible form the adjacent landholders as assessed 14 September 2021.

A description of the views of the Site from the photo locations are summarised below, based upon geographical areas of similar aspects due to variability of the shrouding natural topography:

Photo Locations 1 – 3: Located north west of the Site. The closest area of the Site to this location includes the undeveloped EML 6519. Current operations do not create an adverse visual impact from these locations. Stage 1 of proposed operations in this Program include the establishment of an earthen screening bund that will create a new horizon from these locations to prevent any visual impacts caused by operations as they progress north and west.

Photo Locations 4 – 6: Located south west of the Site. The closest area of the Site to this location includes the undeveloped EML 6519. Current operations do not create an adverse visual impact from these locations. Stage 2 and Stage 3 of proposed operations in this Program include the establishment of an earthen screening bund that will create a new horizon from these locations to prevent any visual impacts caused by operations as they progress to the south and west.

Photo Location 7: Located south of the Site. The closest area of the Site to this location includes the undeveloped southern areas on EML 6519 and PM 243. Current operations are not visible from the locations, and the combination of the rise in the topography and the establishment of an earthen screening bund will prevent any visual impacts caused by operations as they progress to the south and west.

Photo Location 8: Located east of the Site. The closest area of the Site to this location includes the undeveloped eastern areas of PM 243. Current operations are not visible from the locations, and the combination of the rise in the topography and the establishment of an earthen screening bund will prevent any visual impacts caused by operations as they progress to the east.

Photo Locations 9 – 10: Located north-east of the Site along Crowell Road. The closest area of the Site to this location includes the undeveloped north-eastern area of PM 243. Current operations are not visible from the locations, and the combination of the rise in the topography and the establishment of an earthen screening bund will prevent any visual impacts caused by operations as they progress to the north-east.

Photo Location 11: Located north of the Site along Crowell Road. The closest area of the Site to this location includes the undeveloped northern areas of PM 243 and PMA 243. Current operations are not visible from the locations, and the combination of the rise in the topography and the establishment of an earthen screening bund will prevent any visual impacts caused by operations as they progress to the north.

2.15 Dust and Air Quality

The Site is located within a primarily production area with scattered occupied residences in most directions, but with the nearest sensitive receptors to the north east.

Historical land use for the Site and immediate surrounding land parcels has been for the cropping, grazing and quarrying. The surrounding environment contains periodically exposed soils from agricultural practices which are prone to wind erosion of which background emissions of dust are expected to be typical of rural settings.

Dust generating activities of the Site include material extraction, transport and transfer of material, screening, storage of material (stockpiles), and wind erosion over open areas.

The key control strategies for dust are the use of a water cart, which will be available onsite to undertake dust suppression of haul roads and working areas while the Site is being operated. Progressive rehabilitation will also be undertaken to reduce the area exposed to wind erosion and weather conditions will be monitored to ensure operations are modified to limit dust impacts during adverse conditions.

2.16 Noise

The Site is located within a rural setting surrounded by agricultural activities. Noise emissions are expected to be typical of rural settings and quarry noise is normally generated only from within the confines of the pit. The topography acts as a screen to prevent noise emanating laterally. Potential noise generating activities of the Site include material extraction, processing and transport.

The quarry is operational 24 hours, seven (7) days per week, as detailed in Section 3.3.7 Modes and Hours of Operation and is required to ensure that noise from the Site does not cause adverse impacts on the community.

2.17 Heritage (Aboriginal, European, Geological)

A detailed description of the heritage (Aboriginal, European, Geological) has been provided in the previous Price Sand Quarry MOP (2011) and the MLP (March 2020) for EML 6519 and no change to the existing environment has occurred since these document were submitted.

2.18 Proximity to Conservation Areas

A search of the SARIG database did not identify any conservation areas in proximity to the Site.

2.19 Pre-existing Site Contamination and Previous Disturbance

There is no known pre-existing Site contamination or disturbance identified on the EPA contamination site index for the Site. Previous disturbance of areas onsite are related to existing quarrying activities, agricultural / rural living (e.g. minor earthworks such as the construction of dams, sheds, a house, overhead power lines, cropping and vegetation clearance).

3. Description of the Proposed Mining Operations

3.1 General Description and Maps of Operation

This section is provided to give a general description of the planned quarrying and rehabilitation activities to be undertaken on the Site. Additionally, regional geology and Site based geological interpretations of the sand resource has been provided.

To support the Program, a series of maps and plans have been provided including:

Drawing No. 1742.DRG.014 – Site Location Plan
- Highlighting Site location in relation to nearby townships of Ardrossan and Port Clinton.
- Cadastral boundaries

Drawing No. 1742.DRG.024R1 – Site Layout Plan
- Tenement boundaries
- Cadastral boundary
- Access route

Drawing No.1742.DRG.012R3 – Exempt Land Map
- Cadastral boundaries
- Tenement boundaries
- Exempt land 150 m
- Exempt land 400 m
- Overhead power lines
- Exempt land (crop)

Drawing No. 1742.DRG.013R2 – Surface Water Drainage Map
- Tenement boundaries
- Cadastral boundary

Drawing No. 1742.DRG.016R2 – Land Use Map
- Tenement boundaries
- Cadastral boundary
- Site boundary
- Land use zones
- Quarry area
- Vacant area

Drawing No. 1742.DRG.0015R2 – Proximity to Housing and Infrastructure
- Cadastral boundaries
- Tenement boundaries
- SA Power networks overhead distribution lines
- Sensitive receptors highlighted
- ElectraNet transmission line 132 kv line

Drawing No. 1742.DRG.023R3 – Visual Assessment Map
- Tenement boundaries
- Cadastral boundary
- Sensitive receptor within 3000 m
- SAPN overhead distribution lines

- ElectraNet transmission line 132 kv line

Drawing No. 1742.DRG.025 – Regional Geology
- Tenement boundaries
- Cadastral boundary
- Linea structure (fault)

Drawing No. 1742.DWG.008R1 – Drillhole Results
- Tenement boundaries
- Cadastral boundary
- Drill hole locations
- Drill hole depth
- Overburden thickness
- Sand thisckness

Drawing No. 1742.DRG.022R2 – Conceptual Final Landform
- Tenement boundaries
- Cadastral boundary

Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections
- Existing surface
- Final landform surface

Drawing No. 1742.DRG.038 – Stage 1 - Operational sub-stages
- Tenement boundaries
- Cadastral boundary
- Overhead power lines
- Stage 1 sub-stages
- Stage 1 direction of mining
- Stage 1 direction of overburden placement

Drawing No. 1742.DRG.019R2 – Quarry Development Plan - Stage 1
- Tenement boundaries
- Cadastral boundary
- Overhead power lines
- Stage 1 Fill area
- Stage 1 Extraction area
- Stage 1 Screens

Drawing No. 1742.DRG.019A – Cross Sections – Stage 1
- Existing surface
- Pit design surface
- Progressive rehabilitation surface
- Visual screen location and surface

Drawing No. 1742.DRG.020R2 – Quarry Development Plan - Stage 2
- Tenement boundaries
- Cadastral boundary
- Overhead power lines
- Stage 2 Fill area
- Stage 2 Extraction area

- Stage 2 Screens

Drawing No. 1742.DRG.020A – Cross Sections – Stage 2
- Existing surface
- Pit design surface
- Progressive rehabilitation surface
- Visual screen location and surface

Drawing No. 1742.DRG.021R2 – Quarry Development Plan - Stage 3
- Tenement boundaries
- Cadastral boundary
- Overhead power lines
- Stage 3 Fill area
- Stage 3 Extraction area

Drawing No. 1742.DRG.021A – Cross Sections – Stage 3
- Existing surface
- Pit design surface
- Progressive rehabilitation surface
- Visual screen location and surface

Drawing No. 1742.DRG.028R1 – Quarry Development Plan - Stage 4
- Tenement boundaries
- Cadastral boundary
- Overhead power lines
- Stage 4 Fill area
- Stage 4 Extraction area

Drawing No. 1742.DRG.028A – Cross Sections – Stage 4
- Existing surface
- Pit design surface
- Progressive rehabilitation surface
- Visual screen location and surface

Drawing No. 1742.DRG.017R1 – Geohazards Map
- Tenement boundaries
- Cadastral boundary
- Site boundary
- Seismic events
- Linea structure (fault)

3.2 Resource and Products

3.2.1 Geological Environment

The geology of the Site and surrounding area is provided within Drawing No. 1742.DRG.025 – Regional Geology. The geology at the Site is dominated by quartz, rich yellow / brown fine to medium sized sand, with silt and clay also common.

The characteristics of the sand varies across the Site, and therefore the grade quality of the sand as a product for the construction industry varies across the Site. The sand is therefore extracted simultaneously from multiple sections of the pit so that the sand can be blended to achieve the required product specifications.

3.2.2 Resources

The main target mineral at the Site is construction sand. The quarry development design and associated progressive rehabilitation designs informing the reserve estimates have been calculated with the use of Surpac and AutoCAD software. Sand reserves have been calculated based on establishing a buffer to the terminal faces to the boundary of the Site, overburden depths as observed within the existing pit faces, resource investigation drilling summarised within Drawing No. 1742.DWG.008R1 – Drillhole Results interpolated average overburden thickness of 15 m within EML 6519, a final pit floor level of 37 mAHD and a product density of 1.8 t/m^3 of material. Table 5 – Estimate of Site Reserves indicates reserves available with associated estimates of overburden in conjunction with the Staged QDP' estimating a total reserve of approximately 115 Million Tonnes (MT) within the Site. An estimated sand extraction profile (project dependant) of 400 Kilotonne (Kt) per annum gives a quarry life of approximately 288 years

Table 5 – Estimate of Site Reserves

Stage	Sand		Overburden		Rehabilitation	
	Volume (m^3)	Tonnes (t)	Volume (m^3)	Tonnes (t)	Volume (m^3)	Tonnes (t)
1	18,930,000	34,074,000	8,487,000	15,276,600	8,487,000	15,276,600
2	8,795,000	15,831,000	8,342,000	15,015,600	8,342,000	15,015,600
3	21,119,000	38,014,200	13,892,000	25,005,600	13,892,000	25,005,600
4	14,908,000	26,834,400	12,462,000	22,431,600	12,462,000	22,431,600
Total	63,752,000	114,753,600	43,183,000	77,729,400	43,183,000	77,729,400

3.2.3 Production Rate and Products

An estimated life of quarry is provided in Section 3.2.2 Resources and Table 7 – Estimate of Site Reserves above, provides an indication of extraction volumes per each Stage of development at the Site.

The current rate of production averages 400 Kt per annum. It is anticipated that this rate of production will continue with attempts made to increase production with increase in demand that may occur.

Various grades of sand will be blended onsite to meet various construction, concrete and building specifications. The quality of sand extracted during each Stage of quarry development may vary depending upon silt content and particle size. Material which does not meet specification will be utilised in progressive rehabilitation.

No surplus waste material is expected to be generated onsite as all overburden material will be utilised within the progressive rehabilitation associated with each Stage of quarry development as outlined within Table 5 – Estimate of Site Reserves.

3.3 Quarrying Activities

3.3.1 Type or Types of Quarry Operation to be Carried out

Extraction of material from the quarry is by open cut method. Topsoil is stripped and placed in stockpiles or windrows for later use on rehabilitated areas, enabling overburden to be removed and sand to be excavated, loaded into trucks, screened, stockpiled, blended and transported to market.

Sand extraction methodologies are outlined in Section 3.5 Mining Operations and Section 3.7 Crushing, Processing and Product Transport of this report.

3.3.2 Type of Equipment

A list of mobile plant typically used onsite is provided in Table 6 – Mobile Equipment. The make and model may change at any time.

Table 6 – Mobile Equipment

Details of Equipment	Number of units
Komatsu PC450 Excavator	1
A40E Dump Truck	2
CAT 980M Loader	1
Komatsu WA480 Loader	1
Grader	1
Water trailer	1
Genset	1
Finlay 693 Screen and Stacker	1
Sandvik QA331 Screen and Stacker	1

Plant includes heavy vehicles for extracting, hauling and loading sand from the pit face to the processing and stockpiling areas. A grader and water trailer are usually present to maintain the road surface and to suppress dust. Sand is blended and screened into product sizes by screen and stacker plant before being stockpiled on the pit floor.

Haul trucks are loaded from stockpiles on the pit floor and then transport the sand from the Site via the weighbridge.

3.3.3 Sequence of quarrying and Progressive Rehabilitation

A four (4) staged QDP has been developed for quarrying and rehabilitation operations onsite. The sequence of quarry extraction activities is intended to occur consistent with the previously approved MOP and MLP for EML 6519.

In accordance with EML 6519 Sixth Schedule, Condition 16.1, *waste management strategies for overburden* have been developed and discussed for each mining Stage below. The fundamental principles for managing overburden are as follows:

1. Overburden to be used in the development of an earthen bund that will be create an aesthetically pleasing visual and acoustic screen between neighbouring residences and the quarry.
2. Overburden will be stripped and directly used as backfill to create the final landform in a sequence that is designed to limit the overburden haulage distance. Significant amounts of overburden will be required as backfill to create the landform with maximum 1:4 batters. Surplus overburden can be used to raise the elevation of the lower sections of the final landform (pit floor) to reduce the batter angles even further.
3. A temporary overburden stockpile will remain in a central location of the quarry to be used for final rehabilitation of the last areas of the quarry to be mined.

Sub-stages as shown in Drawing No. 1742.DRG.038 – Stage 1 - Operational sub-stages have been developed to highlight the next stages of mining from the current operations to the completion of the mining and progressive rehabilitation to be completed in Stage 1 outlined within Drawing No. 1742.DRG.019R2 – Quarry Development Plan – Stage 1 and Drawing No. 1742.DRG.019A - Cross Sections – Stage 1. It is intended that at the completion of Stage 1, a revision of the Program will be submitted that will discuss the Stage 2 activities in the same level of detail.

3.3.3.1 Stage 1 – Quarry Development Plan

To ensure product specifications can be achieved, quarrying will occur at multiple locations across the Site.

Stage 1A

Quarrying will continue in Stage 1A at the northern end of PMA 243 in a northerly direction. This area will be extracted out to the terminal dimensions so that backfilling activities can commence with overburden from Stage 1B.

Stage 1B
Towards the completion of Stage 1A, Stage 1B will have topsoil removed and stockpiled in windrows on the inside of the boundary of EML 6519.

Stage 1B Overburden Management Strategy
Overburden will then be extracted and used to develop an earthen screening bund along the northern perimeter of EML 6519. The remaining overburden will then be transferred to backfill the Stage 1A void.

Stage 1C
Towards the completion of Stage 1B, Stage 1C will have topsoil removed and stockpiled in windrows on the inside of the boundary of EML 6519 and will then continue in a south westerly direction parallel to the ElectraNet powerline.

Stage 1C Overburden Management Strategy
Overburden will then be extracted and used to continue earthen screening bund along the northern perimeter of EML 6519 and will then continue in a south-westerly direction parallel to the ElectraNet powerline. The remaining overburden will then be transferred to backfill the Stage 1B void.

Stage 1D
Quarrying will continue into Stage 1D in several locations along the western working pit face towards the west and the south. Topsoil will be stripped and stockpiled in windrows outside of the western pit shell boundary.

Stage 1D Overburden Management Strategy
Overburden will be extracted and used to develop an earthen screening bund along the north western perimeter of the EML 6519 pit shell. The remaining overburden will then be transferred to rehabilitation area in the south east quarter of EML 6035.

Stage 1E
Quarrying will continue in Stage 1E on PM 243 expanding the pit to the south and east. Topsoil will be stockpiled to the west of the area ready for progressive rehabilitation in Stage 2.

Stage 1E Overburden Management Strategy
Overburden will be used for rehabilitation backfill in the northern portion of the area or used to commence development of an earthen screening bund on the south eastern corner boundary of PM 243.

3.3.3.2 Stage 2 – Quarry Development Plan

Stage 2 Western Pit Development
As outlined within Drawing No. 1742.DRG.020R2 – Quarry Development Plan – Stage 2 and Drawing No. 1742.DRG.020A - Cross Sections – Stage 2, The western pit development will see mining occur in the central area of EML 6519 with the western pit face being worked in a westerly direction. Topsoil will be stripped and stockpiled in windrows parallel to the final pit shell boundary and used for direct replacement on rehabilitated areas where appropriate.

Stage 2 Overburden Management Strategy (Western Pit Development)
Overburden will be extracted and used to develop an earthen screening bund along the north western perimeter of the EML 6519 pit shell. The remaining overburden will then be transferred for backfill rehabilitation of the Stage 1 pit void.

Stage 2 Eastern Pit Development
The eastern pit development will see quarrying occur in the central areas of PM 243 towards the east to the tenement boundary, and also extending the southern working face towards the south. Topsoil will be either stockpiled near the PM 243 eastern boundary, stockpiled in windrows adjacent to the eastern pit shell boundary or used for direct replacement on the rehabilitation area within the eastern development.

Stage 2 Overburden Management Strategy (Eastern Pit Development)

Overburden will be extracted and used to develop an earthen screening bund along the south eastern perimeter of PM 243. The remaining overburden will then be transferred for backfill rehabilitation of the Stage 1E pit void.

3.3.3.3 Stage 3 – Quarry Development Plan

Stage 3 Western Pit Development

The western pit development will see quarrying continue in a southerly direction across the width of EML 6519, refer Drawing No. 1742.DRG.021R2 – Quarry Development Plan – Stage 2 and Drawing No. 1742.DRG.021A - Cross Sections – Stage 2. Topsoil will be stripped and stockpiled in windrows parallel to the final pit shell boundary and used for direct replacement on rehabilitated areas where appropriate.

Stage 3 Overburden Management Strategy (Western Pit Development)

Overburden will be extracted and used to develop an earthen screening bund along the western and southern perimeter of EML 6519. The remaining overburden will then be transferred for backfill rehabilitation of the pit void.

Stage 3 Eastern Pit Development

The eastern pit development will see mining occur in the central areas of PM 243 towards the east to the tenement boundary, and also extending the southern working face towards the south. Topsoil will be either stockpiled near the PM 243 eastern boundary, stockpiled in windrows adjacent to the eastern pit shell boundary or used for direct replacement on the rehabilitation area within the eastern development.

Stage 3 Overburden Management Strategy (Eastern Pit Development)

Overburden will be extracted and used to complete the earthen screening bund along the south perimeter of PM 243. The remaining overburden will then be transferred for backfill rehabilitation of the earlier stages of mining and for backfilling to rehabilitate the south-east corner of PM 243.

3.3.3.4 Stage 4 – Quarry Development Plan

Stage 4 Western Pit Development

As outlined within Drawing No. 1742.DRG.028R1 – Quarry Development Plan – Stage 4 and Drawing No. 1742.DRG.028A - Cross Sections – Stage 4, The western pit development will see quarrying of the eastern pit wall in an easterly direction towards the eastern boundary of EML 6519. Topsoil will be stripped and stockpiled in windrows parallel to the final southern pit shell boundary and used for direct replacement on rehabilitated areas where appropriate.

Stage 4 Overburden Management Strategy (Western Pit Development)

Overburden will be extracted and will be transferred for backfill rehabilitation of the pit void. Existing overburden stockpiles on EML 6035 will be used for final rehabilitation of the western pit development, and surplus amounts may be saved for rehabilitation of the final open areas of the eastern pit development.

Stage 4 Eastern Pit Development

The eastern pit development will see mining of the western pit face in a westerly direction towards the western boundary of PM 243. They will cause a meeting of the western and eastern pit developments, and the creation of a common pit floor and final pit shell. Topsoil will be stockpiled in windrows along the PM 243 southern and western boundary or used for direct replacement on the rehabilitation area within the eastern development.

The northern face will be worked towards the northern boundary of PM 243 and this will be the final area of quarrying to occur before final rehabilitation. Topsoil will be stockpiled in windrows along the PM 243 northern and eastern boundary or used for direct replacement on the rehabilitation area within the eastern development.

Stage 4 Overburden Management Strategy (Eastern Pit Development)

Overburden will be transferred for backfill rehabilitation of the earlier stages of mining. Stockpiles will be created on the pit floor and then used for the final rehabilitation of the south-west section of PM 243. Additional stockpiles will be left on PM 243 that will be used for the final rehabilitation of the northern section of PM 243.

3.3.4 Stockpiles

3.3.4.1 Topsoil and Subsoil Stockpiles

Stripped topsoil will be stored in low stockpiles or windrows of up to two (2) m in height along the margins of the proposed workings, or on adjacent areas where progressive rehabilitation is being undertaken. Where possible, topsoil will also be directly placed on prepared rehabilitation areas.

3.3.4.2 Product Stockpile

In Stage 1 of proposed operations, product stockpiles will be stockpiled within EML 6035 and contained within the main floor area of the quarry, refer Drawing No. 1742.DRG.024R1 **–** Site Layout Plan. Material stockpiles vary in height but are generally five (5) m in height.

The product stockpiling area is located on the pit floor to reduce the likelihood of dust, noise and visual amenity impacts from the Site. The stockpiles are located near the mobile screening plant and at the base of the ramp to reduce hauling distances.

As the quarry progresses into Stage 2 and Stage 3, the stockpiling areas may relocate as the pit evolves, but it is anticipated that the stockpiles will remain on the pit floor to limit environmental impacts.

3.3.5 Use of Explosives

There will be no blasting used onsite.

3.3.6 Overburden Storage

Overburden ranges from six (6) to 18 m thick above the sand deposits. Overburden material generally contains high percentages of silt and ultra-fine materials, making the material unsuitable for processing. Typically, overburden will be transported directly to an area where progressive rehabilitation is taking place and used to support rehabilitation works or used in the development of a permanent screening mound around the Site.

A significant amount of overburden will be required for the final rehabilitation of the last sections of the pit to be quarried. Stockpiles will therefore be created and left centrally in the pit to ensure enough overburden is available to achieve the final landform 1V:4H slope batter specifications.

A detailed summary of strategies for managing overburden is provided in Section 3.3.3 **–** Sequence of Quarrying and Progressive Rehabilitation.

3.3.7 Modes and Hours of Operation

Operations within the Site are undertaken on a continuous 24 hour seven (7) days per week basis depending upon market demand. Typically quarry operations (inclusive of excavation, internal haulage, and screening activities) are undertaken during day light hours, however sales and external transport may be undertaken at night as outlined below.

Quarry Operations

- Monday to Friday – 6am – 6pm
- Saturday and Sunday – 7am to 4pm

- Sales and Transport – 24/7

Note – Maintenance activities may be undertaken outside of these hours

3.4 Exploration Activities

No further exploration activities are planned at this time.

3.5 Crushing, Processing and Product Transport

Processing of extracted material by mobile screening plant is undertaken to provide the quarry product to the general market. Material is screened using mobile equipment and stockpiled prior to dispatch, refer to Diagram 1 – Conceptual Onsite Screening Operations.

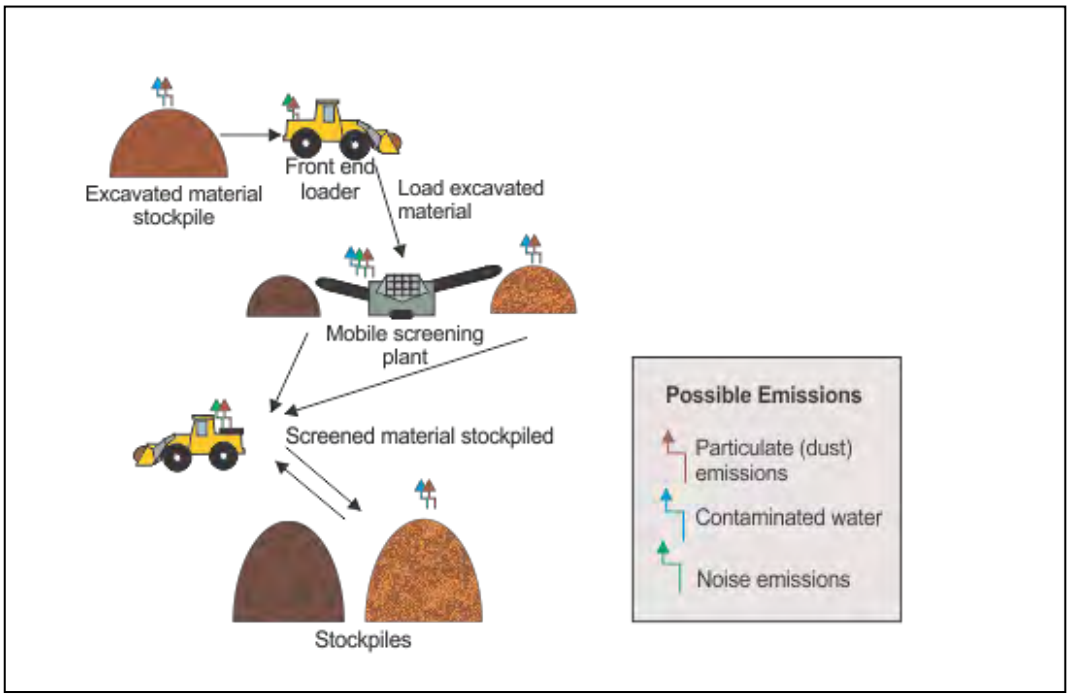


Diagram 1 – Conceptual Onsite Screening Operations

3.5.1 Fixed Plant

There is no fixed screening plant proposed onsite, however, a mobile dry screening plant will be located within the extraction area.

3.5.2 Hours of Operation

Hours of operation are outlined within Section 3.3.7 – Modes and Hours of Operation.

3.5.3 Processing Wastes

Processing waste is limited to the generation of overburden material described in Section 3.8.1 Overburden. Extraction and rehabilitation operations within the Site will not produce any other processing wastes.

3.5.4 Industrial and Domestic Wastes

General / domestic wastes will be disposed by an appropriately licenced third-party for disposal to an appropriately licenced recycling facility or waste disposal facility (landfill).

Wastes generated by servicing of Heavy Mobile Equipment (HME) will be temporarily stored within bunded facilities in accordance with EPA Guideline: EPA080/16 *Liquid storage Bunding and spill management* (EPA, 2016). Oils and other

industrial wastes generated by mobile equipment will be disposed by an appropriately licenced third-party and relevant EPA waste tracking certificates retained onsite.

Construction and Demolition (C&D) waste in the form of waste concrete from a local concrete batch plant is received onsite in accordance with the provisions of EPA Licence 2245. Waste concrete material is temporarily stored onsite as outlined within Drawing No. 1742.DRG.024R1 – Site Layout Plan and reprocessed through crushing and screening (as required) with pebble material from within the Site to produce road pavement materials. C&D Waste is not used within the establishment of the progressive rehabilitation within the Site.

3.6 Supporting Surface Infrastructure

3.6.1 Access and Roads

The Site is accessed from Cowell Road, approximately three (3) km west of the intersection with the Yorke Highway. Drawing No. 1742.DRG.024R1 – Site Layout Plan highlights the Site Entrance point, direction of travel and the road network including Cowell Road and Yorke Highway.

Vehicle movements per day is dependent on market demand and truck net approved load limits.

3.6.1.1 Dragout

Haul trucks leaving the quarry pit travel over one (1) km on an internal road prior to reaching the exit of the Site. The trucks exit the Site onto Crowell Road which is unsealed and therefore will not be impacted by fine dragout from the Site. Furthermore, haul trucks are only permitted to drive on maintained internal access road, and do not come into contact with mud that could be transported outside of the Site boundaries.

3.6.2 Accommodation and Offices

There are no accommodation and offices located onsite. The Site will be serviced by a workshop, lunchroom, weighbridge and toilet facilities located within PMA 243.

3.6.3 Public Services and Utilities used by the Operation

Public access is outlined within Section 3.7.1 Access.

Drawing No. 1742.DRG.015R2 – Proximity to Housing and Infrastructure outlined the utilities and associated infrastructure surrounding the tenement which is limited to the public road network, and a 132 kV ElectraNet transmission line that passes through the Site. The Site also has a 19 kV SAPN overhead transmission line which currently supplied power to the house located within EML 6519 which will be removed towards the end of Stage 1 of quarry development.

3.6.4 Visual Screening

The Site will be screened through the construction of an earthen screening bund in accordance with the staged QDP's. The grassed visual screen will be constructed with overburden material, with batters deigned to be geotechnically stable and covered with topsoil to support vegetation growth.

It is anticipated that the screening bund will be approximately five (5) m high and will be seeded and planted with native vegetation to create an aesthetically pleasing landform to be left in place post-mining to create a wind break for future agricultural practices in accordance with the mine closure outcomes.

A concept of the visual screen is outlined within Diagram 2 – Conceptual Screening Mound and Vegetation Buffer.

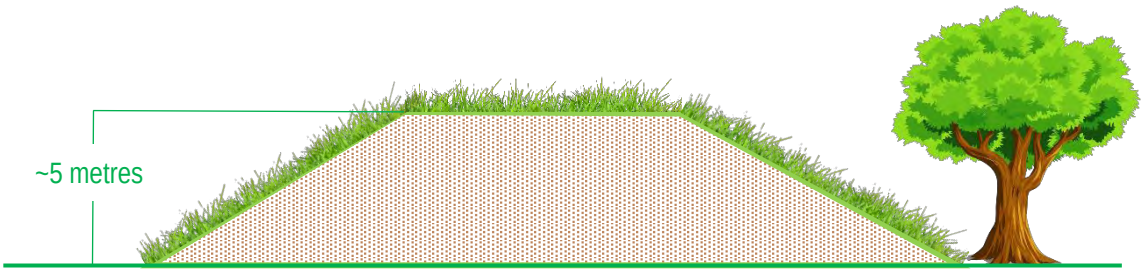


Diagram 2 – Conceptual Screening Mound and Vegetation Buffer

Standard rural farm wire fencing will be installed around the perimeter of the Site to exclude livestock. Signs will also be placed at prominent locations along the boundary to discourage public access.

3.6.5 Fuel and Chemical Storage

Diesel fuel is stored within two (2) 5,200 L tanks located adjacent to the quarry workshop, minor amounts of chemicals are also stored onsite for maintenance of equipment within designated areas of the workshop on portable palette .All fuel and hydrocarbons are stored in appropriately bunded storage areas comprised of concrete bunds or portable pallet bunds accordance with EPA Guideline: EPA080/16 *Liquid storage Bunding and spill management* (EPA, 2016), at the workshop location shown in Drawing No. 1742.DRG.024R1 – Site Layout Plan.

An appropriate number of pollution response spill kits are available for use at all times. All pollution control equipment, such as spill kits, will be maintained to ensure that pollution is minimised, and will be inspected to ensure it is in good working order, and records of the inspections will be kept in accordance with EPA Licence 2245, Condition 3.4.

3.6.6 Site Security

Security at the Site is provided by standard stock fencing around the perimeter of the Site to exclude livestock. Signs will also be placed at prominent locations along the boundary to discourage public access.

The gate over the main access will be padlocked shut when the Site is closed, and other access gates around the boundary of the tenements will remain padlocked when not in use.

3.6.7 Erosion, Sediment and Silt Control

All surface water runoff which may transport silt from exposed workings within the quarry area will be directed towards the low areas of the quarry floor and retained onsite.

Although it is anticipated that all surface water will be diverted into the pit, as the quarry continuous to develop, should it not be possible to divert surface water that travels over a disturbed area into the pit (e.g. during the development of the visual screening mound), water will be diverted into effective containment ponds to ensure that sediment does not leave the Site.

No other wastewater is generated as part of the quarry operations.

3.7 Vegetation Clearance

As outlined within Section 2.9 Vegetation, Weeds and Plant Pathogens, the Site has historically been cleared of native vegetation and impacted by grazing and cropping with planted vegetation located around the residential property on EML 6519.

Some native vegetation is present on the eastern side of PMA243 but is not anticipated to be in the path of mining at this Stage and is unlikely to be cleared.

3.8 Site Water Management

The sand processing operations within the quarry do not require water, however a water cart is used onsite to undertake dust suppression along haul roads and operational areas where sand is being extracted. Approximately 10,000 kilolitres (KL) per year is supplied by SA Water which is used predominantly for dust suppression for the Site.

3.9 Description of Quarry Site at Completion

At the completion of extraction activities and progressive rehabilitation work, it is envisaged that the Site will be returned to the historic and current use of grazing and agricultural land. For this reason, Drawing No. 1742.DRG.022 – Conceptual Final Landform, and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections have been designed to outline a Conceptual Final Landform that will ensure that the intended land use can successfully be achieved. The conceptual final landform has been designed to be sympathetic to the surrounding land uses and to blend in with the natural topography.

Upon completion of quarrying operations, all plant, equipment and materials shall be removed from the Site, to the satisfaction of the Chief Inspector of Mines.

As a general guide, the following measures may be used to prepare the final landform:

- Using earthmoving equipment to progressively shape and trim the workings to the desired design profiles and flattening the gradients of batters on reaching the terminal limits of extraction.
- Rounding or marrying the contours into the natural ground surface.
- Topsoiling of contours.
- Providing access to the terminal workings to allow maintenance of rehabilitation works.
- Designing landform and drainage to control erosion.

The following measures are to be implemented for topsoil and overburden spreading:

- Areas to be spread are to be re-profiled prior to placing of overlying materials.
- Topsoil and overburden are to be removed from stockpiles in a manner that avoids vehicles travelling over the stockpiles.
- Topsoil and overburden are to be respread in the reverse sequence to its removal where possible so that the original soil layer is returned to the surface to re-establish the entrapped seed content of the soil.
- After spreading topsoil, ensure the surface is left in a roughened state to assist moisture infiltration and inhibit soil erosion.
- Soil spreading is to be immediately followed by seeding or planting if applicable.
- If erosion occurs on treated surfaces, the area is to be re-profiled and re-spread as necessary (note: traversing tracked machinery perpendicular to the slope gradient may assist in reducing the erosion potential of the re-profiled surface).

Any roads and tracks located within areas to be rehabilitated that are no longer required for the operational functionality of the Site, or for ongoing access to rehabilitated areas, are to be removed, topsoiled, seeded and allowed to regenerate with vegetation. Ongoing access is to be prevented to these roads and tracks to avoid compaction and increase germination survival rates.

4. Consultation

Consultation undertaken during the development of the Program for the Site has been undertaken with the previously identified stakeholders consulted during the development of the MLP. A summary of the results of the consultation are discussed in further detail in Attachment 7 – Consultation Summary.

4.1 Complaints Register

A Site complaints register is prepared and maintained to register all complaints concerning environmental issues in accordance with Condition 3.2 of EPA Licence 2245.

5. Environmental Outcomes, Strategies, Criteria and Monitoring

5.1 Public Safety

5.1.1 Context

The Site is situated within a remote location surrounded by agricultural lands (cropping and grazing) and is not directly accessible to members of the public. The surrounding roads receive predominantly local traffic, and no walking trails are located near the Site.

The proximity of the nearest sensitive receptors is discussed in Section 2.12 – Proximity to Housing and Infrastructure with the closest sensitive receptor is in the northern section of PM 243 approximately 750m from the production area. Outside of the EML's and PM the closet residence occurs approximately 125m north of the PM 243 boundary. This residence is owned by Bevan and Lynette Crowell the owners of PM 243.

Site security is discussed in Section 3.6.6. Site Security.

5.1.2 Objective / Outcome

Operational
The Tenement Holder must, during construction and operation, ensure that unauthorised entry to the Site does not result in public injuries and / or death that could have been reasonably prevented.

Closure
The Tenement Holder must demonstrate that post completion, the risks to the health and safety of the public so far as they may be affected by mining operations, are as low as reasonably practicable.

5.1.3 Control and Management Strategies

Control and Management Strategies
Operational • Fencing, signage and gates around the Site perimeter is to be maintained. • Regular inspection of Site fencing and signage to ensure they are adequately maintained. • Gates closed and locked when the Site is not operational. Closure • Adherence with Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections. • Undertake progressive inspections to ensure the post-extraction landform is being constructed in accordance with approved rehabilitation plans designed to provide safe, geotechnically stable, non-polluting landform and is suitable for the desired long-term land use. • Obtain a Landowner Agreement for any quarry related infrastructure to be retained at the cessation of the quarrying activity.
Uncertainty and Assumptions of Control Strategies
Operational The combination of Site fencing and signage is assumed to be a reasonable deterrent to the public entering the Site due to the isolated location of the quarry. Closure Potential impacts associated with trespass to the Site post closure are assumed to be unlikely provided operator adheres to Site rehabilitation plans.
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.1.4 Environmental Objective / Outcome and Measurement Criteria

Public Safety	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must, during construction and operation, ensure that unauthorised entry to the land does not result in public injuries and or deaths that could have been reasonably prevented.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement All incidents involving public injury and / or deaths resulting from unauthorised access to the quarry Site are to be recorded in a quarry logbook and investigated by a suitably qualified person within one (1) calendar month (or other time as agreed with the Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder. 2. What will be Measured and the Form of Measurement Quarry management logbook shows evidence that regularly inspections of fencing, signage and locks on gates have occurred and repairs were undertaken as required. 3. Location of Measurement At the tenement boundaries. 4. Frequency Within one (1) month (or other time as agreed with Mining Regulation) after each incident. 5. Control / Baseline Data Not Applicable.	

Public Safety	
Quarry Phase	Objective / Outcome
Closure	The Tenement Holder must demonstrate that post completion, the risks to the health and safety of the public so far as they may be affected by mining operations, are as low as reasonably practicable.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement A Site inspection and report from a suitably qualified person completed once upon completion of final rehabilitation work verifies that all slopes are battered to no steeper than 1V:4H ratio, vegetated, are geotechnically stable and non-polluting, and that no hazardous infrastructure remains on the tenements. 2. What will be Measured and the Form of Measurement Batter angles and geotechnical stability of final landform will be assessed by a suitably qualified person to ensure the final landform is in alignment with the approved Final landform Plan and that all infrastructure, other than that to remain on the land as agreed with the landholders, has been removed from the land. 3. Location of Measurement Rehabilitated landform. 4. Frequency At the completion of each Stage of quarry development, and once post quarry completion prior to tenement revocation application. 5. Control / Baseline Data Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections.	

5.2 Traffic

5.2.1 Context

Site access is discussed in Section 3.6.1 - Access and Roads.

The Site is accessed from Crowell Road into the quarry operations which is serviced by an unsealed road, Crowell Road. Drawing No. 1742.DRG.024R1 – Site Layout Plan highlights the Site Entrance point.

5.2.2 Objectives / Outcome

The Tenement Holder must, during construction and operation, ensure there are no traffic accidents involving members of the public and mine-related traffic that could have been reasonably prevented by the Tenement Holder.

5.2.3 Control and Management Strategies

Control and Management Strategies
Operational • All personnel are to comply with the Site traffic management policies / procedures. • Site management must ensure that all employees operating vehicles are licenced to do so. • Site management are to ensure all personnel are aware of their responsibilities in relation to vehicle use through undertaking inductions, issuing notices, and through use of directives. • Site management must ensure road signage in accordance with *Australian Standards AS 1744:1975 and AS/NZS 1906.1:2007*. • All contractors and visitors must report to the Site office as directed upon arrival to the Site. • Two-way radios must be readily accessible in all Site vehicles. • Vehicles must be in a roadworthy condition and fit for purpose. • Quarry vehicles (light and heavy vehicles) exit via Crowell Road to the Yorke Highway.
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted are standard industry practices and are proven to be effective (low uncertainty).
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.2.4 Environmental Objective / Outcome and Measurement Criteria

Traffic	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must, during construction and operation, ensure there are no traffic accidents involving members of the public and mine-related traffic that could have been reasonably prevented by the Tenement Holder.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement All incidents involving public injury and / or deaths resulting from unauthorised access to the quarry Site are to be recorded in a quarry log book and investigated by a suitably qualified person within one (1) calendar month (or other time as agreed with the Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by the Tenement Holder. 2. What will be Measured and the Form of Measurement Quarry management logbook records of traffic accidents and investigation report. 3. Location of Measurement Site access / egress point. 4. Frequency	

Log book record within 24-hours of the accident and the investigation to be completed within one (1) month (or other time as agreed with mining regulation) after an incident. 5. Control / Baseline Data Not Applicable.

5.3 Heritage

5.3.1 Context

Previous searches of the Central Archive, the Commonwealth heritage register and the Local and State Heritage Places Database confirmed there are no known Aboriginal or European and / or geological heritage sites located within the Site. In the event that items are discovered works will stop and they will be preserved for assessment by the appropriate authorities.

5.3.2 Outcome

The Tenement Holder must, during construction and operation, ensure there is no damage, disturbance or interference to Aboriginal and non-Aboriginal heritage sites, objects or remains unless it is authorised under the relevant legislation.

5.3.3 Control and Management Strategies

Control and Management Strategies
Operational • All personnel at the Site are to be inducted and training provided on associated legislative responsibilities and on the type of sites, objects and remains that may be present on the Site. • In the event that any Aboriginal and / or European cultural heritage sites, objects or remains and / or Geological monuments are identified the following is to occur: o Immediately stop work in the vicinity of find. o Notify the relevant authority (DSD AAR), the local SA Heritage Council and DEM of the find / potential find at the Site. o No quarry operations are to recommence in the vicinity of the find until such time that liaison with the relevant authority has been undertaken and authority to operate within the area has been granted.
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted are standard industry practices and are proven to be effective and comply with the legislative requirements (uncertainty is low).
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.3.4 Environmental Objective / Outcome and Measurement Criteria

Heritage	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must, during construction and operation, ensure there is no damage, disturbance or interference to Aboriginal and non-Aboriginal heritage sites, objects or remains as a result of mining operations unless it is authorised under the relevant legislation.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Production records and quarry logbook demonstrates that, upon discovery within the tenements of any possible: • Aboriginal or European heritage sites; and / or • objects or remains; that work ceased until the relevant authorities were notified and work recommenced only once authorisation was received.	

2. What will be Measured and the Form of Measurement
    - Quarry management logbook records of discovery and evidence appropriate procedures followed upon discovery.
    - Copies of communications from the relevant agency providing authority to continue working in an area subject to a heritage site investigation.
3. Location of Measurement
   Location of heritage area of interest.
4. Frequency
   Upon discovery.
5. Control / Baseline Data
   Not Applicable.

5.4 Weeds and Pests

5.4.1 Context

Weeds and Plant Pathogens are discussed in Section 2.8.2 Weeds and Plant Pathogens.

The land has been historically used for agricultural purposes including cropping and grazing (Sheep) and is affected by weeds species that are typical of disturbed grazing land.

Pests (fauna) are discussed in Section 2.9 – Fauna. It is envisaged that cropping and grazing activities on the land within the Site will continue as per the current arrangement until the land is required for extractive operations.

5.4.2 Outcome

The Tenement Holder must, during construction and operation, ensure no introduction of new species of environmental weed, plant pathogens or pests (including feral animals), nor sustained increase in abundance of existing weed or pest species on the land.

5.4.3 Control and Management Strategies

Control and Management Strategies
Operational • Controlling weed infestations to prevent further spread of weeds. • Minimising land disturbance at any one (1) time (maintaining ground cover for as long as possible) • Annual weed spraying campaigns throughout Site and rehabilitated areas, with additional spraying campaigns (e.g. spot spray, bi-annual sprays) undertaken as necessary. • Prioritising weed management according to the status of the weed (establishing cause of infestation to prevent or minimise further introduction and spread). • Appropriate training provided to Site employees to recognise existing and potential weeds present onsite and within the surrounding areas to ensure weeds are not inadvertently brought onto the Site via items contaminated by seed (e.g. vehicles, machinery, hand tools, soil). • Site haul routes maintained in a weed-free or weed-reduced state, to lessen potential spread via vehicle movements. • Established roads and tracks are to be used whenever possible and weed-infested areas / sites are to be avoided. • Restrict vehicle traffic movement in rehabilitation area. • Implementation of progressive rehabilitation (as soon as practical). • Visual surveys to be undertaken prior to topsoil stripping and, if necessary, control mechanisms undertaken to reduce the risk of the contamination of topsoil stockpiles with seed and weed material.

• Weed control mechanisms may include separate stockpiling, herbicide spraying of stripped soils, or disposal as fill of soil materials infested with weeds. • Ensuring general waste bins are fitted with lids and closed so not to attract vermin. • Pest animal control is implemented upon discovery of hollows, burrows, nests etc.
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted are standard industry practices and are proven to be effective (low uncertainty).
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.4.4 Environmental Objective / Outcome and Measurement Criteria

Weeds and Pests	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must, during construction and operation, ensure no introduction of new species of environmental weed, plant pathogens or pests (including feral animals), nor sustained increase in abundance of existing weed or pest species on the land.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Records of inspections, are held by the operator to demonstrate no introduction of new weeds, pests or plant pathogens nor an increase in abundance of existing. 2. What will be Measured and the Form of Measurement Presence and location of declared weeds, plant pathogens and pests onsite. 3. Location of Measurement Within the tenement boundary. 4. Frequency Once annually in Spring, and additional inspections throughout the year if required for weeds, pests or plant pathogens that are active outside of Spring or following the implementation of control strategies. 5. Control / Baseline Data Not Applicable.	

5.5 Soil

5.5.1 Context

Section 2.3 – Topsoil and Subsoil provides a description of the existing topsoil within the Site.

The aim of current Site operations and practices is to manage earthworks and stripping to allow for soil conservation and appropriate management for ongoing revegetation. Topsoil and subsoil are identified as suitable or unsuitable for use in rehabilitation before works commence and good quality topsoil is stored in order to respread on finished batters.

Visual assessments of topsoil cover occur onsite to confirm that there is sufficient growth medium spread on rehabilitated areas to support revegetation.

5.5.2 Objective / Outcome

The Tenement Holder must, during construction and operation ensure that the existing (pre-mining) soil quality and quantity is maintained.

5.5.3 Control and Management Strategies

Control and Management Strategies
Operational • Visual surveys to be undertaken prior to topsoil stripping and, if necessary, control mechanisms undertaken to reduce the risk of the contamination of topsoil stockpiles with weed seed and vegetative material. • Weed control mechanisms may include separate stockpiling, herbicide spraying of stripped soils, or disposal as fill. • Soils to be stripped ahead of quarrying and temporarily stockpiled or windrowed up-gradient of the quarry development areas. • Topsoil, subsoil and overburden will be stockpiled separately where possible. • Wherever possible, soils will be used directly on areas being rehabilitated. • Stripping of soils will be limited to the minimum area necessary for planned mining operations. • Topsoil stockpiles will be limited to a height of approximately two (2) m and batters will be shaped to a gradient of 1V:2H or less. • Soil stockpiles will be allowed to grow pasture grasses and seeded if necessary to ensure there is good coverage of vegetation to effectively protect against erosion and environmental weed infestation. • Erosion and drainage controls are to be integrated into soil stockpiles where possible to prevent erosion and saturation. • Vehicle / machine operators will be instructed not to track vehicles over topsoil stockpiles to avoid compaction and loss of soil structure. • All topsoil stockpiles are to be regularly inspected and managed for weed infestation. Closure • Ensure soils are spread on rehabilitation areas to a sufficient depth to support vegetation growth. • Adherence with rehabilitation plans Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections.
Uncertainty and Assumptions of Control Strategies
Localised changes in climatic conditions may result in variations in vegetation establishment. Control and management strategies adopted are standard industry practices and are proven to be effective (uncertainty is low).
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.5.4 Environmental Objective / Outcome and Measurement Criteria

Soil	
Quarry Phase	Objective / Outcome
Operation	The Tenement Holder must, during construction and operation ensure that the existing (pre-mining) soil quality and quantity is maintained.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Annual inspection and recording of soil stockpiles at Site to confirm that: o Minimal erosion (e.g. rills, gullies) or other evidence of soil loss. o Stockpiles of topsoil do not exceed two (2) m in height. o Stockpiles of topsoil have established (or establishing) vegetation cover o Stockpiles of topsoil are free of environmental weeds. 2. What will be Measured and the Form of Measurement Records of inspection. 3. Location of Measurement Locations of topsoil stockpiles. 4. Frequency	

Annually. 5. Control / Baseline Data Not Applicable.

Soil	
Quarry Phase	Objective / Outcome
Closure	The soil profile and topography are reinstated to be free of erosion and are suitable for regenerating vegetation.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Inspection of the topsoil application is undertaken by a suitably qualified person at end of life confirming topsoil is of a suitable quality and application and sufficient to ensure long term establishment and success of vegetation. 2. What will be Measured and the Form of Measurement Site inspection records by a suitable qualified person. 3. Location of Measurement Rehabilitated areas. 4. Frequency Once, at the completion of quarrying activities at the Site. 5. Control / Baseline Data Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections.	

5.6 Waste Disposal

5.6.1 Context

Waste is discussed in Section 3.5.4 Industrial and Domestic Waste.

5.6.2 Objectives / Outcome

The Tenement Holder must, during construction and operation, ensure no adverse impacts to the environment from commercial and industrial waste produced as a result of mining operations.

5.6.3 Control and Management Strategies

Control and Management Strategies
Operational • All commercial or industrial waste generated will be collected by licenced operator and disposed of at an approved facility. • The operator shall ensure an appropriate number of pollution response spill kits are available for use at all times. • The operator shall ensure that all pollution control equipment, such as spill kits, are maintained to ensure that pollution is minimised, will be inspected to ensure it is in good working order, and records of the inspections will be kept in accordance with EPA Licence 2245, Condition 3.4. • Any spill of potential contaminants outside of a workshop area shall be cleaned up immediately. • All hydrocarbons, and materials contaminated with hydrocarbons (e.g. oily rags, oil filters etc.) will be stored in an effectively bunded area or container prior to collection. • Dispose of contaminated containment and / or absorbent material and any impacted surface soils in accordance with *EPA Guideline: EPA 378/13 Disposal of used hydrocarbon absorbent materials, August 2013*. • Maintain records and details of receipt of all C&D material including source site, volume and contractor / company.

• Undertake visual Inspections C&D loads entering the Site and refuse material which does not meet C&D criteria. • C&D Waste shall be reprocessed and used for road pavement materials and not disposed within the rehabilitation of the Site. Closure • Remove all items of quarry related infrastructure at the cessation of the operation (e.g. scrap metal, parts, tyres, bearings etc.). • Adherence with rehabilitation plans Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections.
Uncertainty and Assumptions of Control Strategies
Waste streams are well understood, and management procedures are considered adequate for wastes generated by Site activities (uncertainty is low).
Sensitivity to Change of Assumptions
General waste streams are unlikely to change as a result of the quarry activities undertaken at the Site.

5.6.4 Environmental Objectives / Outcome and Measurement Criteria

Waste Disposal	
Quarry Phase	Objective / Outcome
Operation	The Tenement Holder must, during construction and operation, ensure no adverse impacts to the environment from commercial and industrial waste produced as a result of mining operations.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement All waste tracking receipts are stored at the Site and will demonstrate that listed waste materials generated by quarrying operations have been disposed of at an EPA licenced facility. Quarry management records demonstrate that C&D materials imported to the Site are weighed, stockpiled, documented and reprocessed in accordance with the requirements of EPA Licence 2245. 2. What will be Measured and the Form of Measurement Quarry management records of waste removal and C&D receipt and reprocessing. 3. Location of Measurement Within tenements. 4. Frequency Receipt records will be kept for five (5) years at all times until the surrender / revocation of all tenements. 5. Control / Baseline Data Not Applicable.	

Waste Disposal	
Quarry Phase	Objective / Outcome
Closure	The Tenement Holder must ensure no industrial or commercial waste left onsite.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Inspection of the Site post quarry completion undertaken by the Tenement Holder confirms that no industrial or commercial waste accumulated through the course of quarrying operations is left onsite (unless otherwise approved to be retained in accordance with landowner agreement). 2. What will be Measured and the Form of Measurement Quarry management records of inspection confirming records of waste removal and a record of an inspection confirming the absence of industrial or commercial wastes left onsite. 3. Location of Measurement Within tenements. 4. Frequency Prior to the surrender/revocation of the tenements. 5. Control / Baseline Data Not Applicable.	

5.7 Visual Amenity

5.7.1 Context

A description of the visual amenity of the Site and surrounding environment is provided within Section 2.14 Amenity and outlined in Drawing No. 1742.DRG.23R2 – Visual Assessment Map and Attachment 5 – Visual Assessment Photographic Plates. A series of photos were taken from adjacent public road reserves facing the quarry to gain an appreciation of the views from the receptors within proximity to the Site.

The topography surrounding the Site gives minor to moderate views to adjacent residences of the proposed quarry operations. Stronger visual aspects of the Site will be evident for road users traveling along Crowell Road. The degree and duration of the visual aspects experienced by road users on Crowell Road will be temporary in nature and limited to passing traffic.

Quarry operations may result in visual amenity impacts upon nearby residents and passing traffic on Crowell Road if appropriate control measures are not implemented.

5.7.2 Objectives / Outcome

Operational
The Tenement Holder must ensure the form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape.

Closure
The Tenement Holder must ensure all rehabilitated landforms integrate and harmonise with the surrounding landscape.

5.7.3 Control and Management Strategies

Control and Management Strategies
Operational • Establishment of vegetation screens and perimeter earth bunds in accordance with approved QDP's. • Adherence with QDP Drawing No. 1742.DRG.019R2 – Quarry Development Plan - Stage 1, Drawing No. 1742.DRG.020R2 – Quarry Development Plan - Stage 2, Drawing No. 1742.DRG.021R2 – Quarry Development Plan - Stage 3, and Drawing No. 1742.DRG.028R1 – Quarry Development Plan - Stage 4. • Minimise the disturbance footprint and clearing of onsite vegetation to that necessary for the quarry development. Closure • Rehabilitation to be undertaken in accordance with Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections. • Ensure sufficient overburden placement and establishment of 1V:4H batters to support vegetation growth. • Quarry related infrastructure removed at cessation of quarrying (unless otherwise approved to be retained in accordance with landowner agreement).
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted are practical and commensurate with the potential impact (uncertainty is low).
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.7.4 Environmental Objectives / Outcome and Measurement Criteria

Visual Amenity	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must ensure the form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Stage 1 (Interim) – Records from annual inspections demonstrate that visual screening mounds are being progressively construction as per Drawing No. 1742.DRG.038 **–** Stage 1 - Operational sub-stages Completion of Stage 1 – Records from a visual impact assessment of the Site and surrounds at the completion of each stage of quarry development confirms that screenings mounds have been constructed as planned, and progressive rehabilitation strategies have been implemented and minimise visual amenity impacts. 2. What will be Measured and the Form of Measurement Visual assessment and photographic records of screening mound construction and progressive rehabilitation. 3. Location of Measurement Locations highlighted in Drawing No. 1742.DRG.23R2 **–** Visual Assessment Map. 4. Frequency Annually. 5. Control / Baseline Data MLP visual amenity assessment undertaken in July 2018.	
6.	

Visual Amenity	
Quarry Phase	Objective / Outcome
Closure	The Tenement Holder must ensure all rehabilitated landforms integrate and harmonise with the surrounding landscape.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Visual assessment of the Site and surrounds undertaken by a suitably qualified person post quarrying confirms the final landform integrates, and is in harmony, with the surrounding landscape, and is consistent with Drawing No. 1742.DRG.022R2 **–** Conceptual Final Landform Plan and Drawing No. 1742.DRG.022AR2 **–** Conceptual Final Landform Cross Sections. 2. What will be Measured and the Form of Measurement The final landform is to be visually assessed and measured against Drawing No. 1742.DRG.022R2 **–** Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 **–** Conceptual Final Landform Cross Sections. 3. Location of measurement Locations highlighted in Drawing No. 1742.DRG.23R2 **–** Visual Assessment Map. 4. Frequency Once prior to the revocation of the tenements. 5. Control / Baseline Data Drawing No. 1742.DRG.022R2 **–** Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 **–** Conceptual Final Landform Cross Sections.	

5.8 Dust

5.8.1 Context

The Site is located within a primary production area and sensitive receptor locations are displayed in Drawing No. 1742.DRG.015R2 **–** Proximity to Housing and Infrastructure. Potential dust generating activities from the Site

include material extraction, loading, screening, vehicle movements on unsealed roads and wind erosion of exposed areas. Local dust concentrations are also attributed to primary production activities and regional scale wind driven events.

Dust can cause adverse public health and nuisance impacts and the Site is required to take reasonable and practicable measures to manage dust impacts from Site operations.

5.8.2 Objectives / Outcome

The Tenement Holder must during construction and operation, ensure that there are no public health and / or nuisance impacts from dust generated by mining operations.

5.8.3 Control and Management Strategies

Control and Management Strategies
Operational • Dampen down cleared areas, extraction working areas, haul roads, stockpiles and other hardstand areas by water spraying. • Use of dedicated water truck to ensure emissions from open areas, haul roads and stockpiles are minimised. • Undertake ongoing visual inspections of Site operations and monitoring of wind and weather forecasts (BoM) to determine days where increased dust suppression (watering) regime or modifications of operations is required. • Topsoil stripping and screening mound works cease if dry and windy conditions are causing dust to leave a tenement boundary. • Ensure water truck operation is increased when necessary and in drier climatic conditions. • Limit the amount of exposed area and undertake progressive rehabilitation to assist in managing dust emissions on the Site. • Reduced vehicle speeds on dry and windy days.
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted are standard industry practices and are proven to be effective (low uncertainty).
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.8.4 Environmental Objectives / Outcome and Measurement Criteria

Dust	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must during construction and operation, ensure that there are no public health and / or nuisance impacts from dust generated by mining operations.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Dust related complaints acknowledged within 48 hours and actioned within seven (7) days to the satisfaction of the Mining Regulator. In the event the additional control measures do not resolve the complaint to the satisfaction of the Mining Regulator, air quality monitoring is to occur at locations as agreed with the Mining Regulator to demonstrate that dust deposition conforms with the following nuisance and/or public health criteria, • dust deposition of 4g/m2/month, when monitored in accordance with Australian Standard AS 3580.10.1 *Methods for sampling and analysis of ambient air – Determination of particulates – Deposited matter – Gravimetric method; or* • An aerodynamic diameter of less than 10 µm (PM_{10}) suspended in the atmosphere of 50 µg/m3 over a 24-hour averaging time (Air NEPM levels) when monitored in accordance with the *Australian*	

Standard AS 3580.9.6 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 high volume sampler with size-selective inlet – Gravimetric method.

2. What will be Measured and the Form of Measurement
   Records of dust complaints acknowledged and actioned with satisfactory resolution, and if required, dust indictors (deposition for nuisance, PM_{10} for public health) using appropriate equipment.
3. Location of Measurement
   Between the receptor and the operations as agreed with the Mining Regulator.
4. Frequency
   As required by the Mining Regulator.
5. Control / Baseline Data
   Not Applicable.

5.9 Noise

5.9.1 Context

The Site is situated in a remote location surrounded agricultural lands predominantly consisting of cropping and grazing.

The proximity of the nearest occupied residential properties (sensitive receptors) is discussed in Section 2.12 Proximity to Housing and Infrastructure with the nearest sensitive receptors located within or near the PM 243 boundary approximately 310 m and 510 m north or the weighbridge and 650 m east of the weighbridge. The distances between these receptors and the proposed extend of quarrying, which will be reached in Stage 1 of the quarry development, is approximately 100 m further. Another sensitive receptor is located approximately 950 m north west of the proposed extent of operations on EML 6519.

The majority of the proposed quarry development will occur below the natural ground level and will therefore use the topography as an effective noise screen. A five (5) m high earth bund will also be established along the perimeter of the extraction area and will screen noise emanating from activities occurring at or near the ground level.

No screening will be possible for the development of the perimeter earth bund, so these works will be limited to occurring between eight (8) am – five (5) pm from Monday to Friday, and in consideration of weather conditions, to control nuisance impacts.

Noise emissions from within the Site are expected to be typical of rural settings and are not considered to affect the nearest sensitive receptor (residence). Vehicle movements within the Site will be limited to a small fleet of two (2) to three (3) quarry HME such as excavators and dump trucks.

5.9.2 Objective / Outcome

The Tenement Holder must, during construction and operation, ensure that there are no public nuisance impacts from noise as a result of mining operations.

5.9.3 Control and Management Strategies

Control and Management Strategies
Operational • Operations shall adhere to approved operating hours. • Establish and maintain a lowered quarry working area and earth bund adjacent to the extraction areas in accordance with the approved QDP's as early as possible during each Stage of quarry development to form a barrier to reduce noise emanating from the Site. • Equipment is to be maintained in accordance with the original equipment manufacturer's specifications.

• Avoid unnecessary operation of plant and / or revving of engines, pumps, compressors (and shut down when not in use). • Fit broadband reversing alarms on mobile equipment where practicable. • Trucks are restricted to 40 km/hr to reduce noise of empty tray liners. • Construction of the perimeter earthen bund will be limited to occur between eight (8) am – five (5) pm, Monday to Friday. • Complaints from neighbouring residents are recorded in the complaints register, investigated and responded to in a timely manner.
Uncertainty and Assumptions of Control Strategies
Control and management strategies adopted are standard industry practices and are proven to be effective (low uncertainty). Regular community engagement will provide a feedback loop on the effectiveness of noise controls.
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.9.4 Environmental Objective / Outcome and Measurement Criteria

Noise	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must, during construction and operation, ensure that there are no public nuisance impacts from noise as a result of mining operations.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Quarry records shall demonstrate that all noise related complaints are acknowledged within 48 hours and closed out within seven (7) days to the satisfaction of the complainant or as agreed with the Mining Regulator. • In the event the additional control measures do not resolve the complaint to the satisfaction of regulators, noise measurements may be undertaken in accordance with Part 3 of the *Environment Protection (Noise) Policy 2007* at locations agreed upon by the operator and Mining Regulator to verify compliance with Part 1 Section 5 — Indicative noise levels. • Noise criteria 57 dB(A) during day period of 7.00 am - 10.00 pm, 50dB(A) night period 10.00 pm - 7.00 am. 2. What will be Measured and the Form of Measurement Acknowledgement and complaint resolution measured through review of quarry management records. If required monitoring will measure noise levels (dBA) as per Part 3 of the *Environment Protection (Noise) Policy 2007*. 3. Location of Measurement At sensitive receptors or alternative location as agreed with the Mining Regulator. 4. Frequency • Records maintained following a complaint • Monitoring as required by the Mining Regulator. 5. Control / Baseline Data Not Applicable.	

5.10 Protection of Third-Party Property

5.10.1 Context

The Site has two (2) occupied residences within the PM 243 boundary, and several residences within 1500 m of the proposed disturbance boundary at the northern and western areas of the Site as discussed in Section 2.12 Proximity to Housing and Infrastructure.

The Site is surrounded by Crowell Road on the northern boundary, and third-party cropping land on the eastern, southern and western boundaries. The south eastern corner of PM 243 extends to the Yorke Highway

Within the north western section of EML 6519, there is an above ground, mild steel concrete lined SA Water pipeline and a 19 kV SAPN overhead transmission line, a 132 kV ElectraNet overhead transmission line and an underground NBN fibre optic cable located within the ElectraNet easement, refer Drawing No. 1742.DRG.015R2 – Proximity to Housing and Infrastructure.

Due to the proximity of utility infrastructure, agricultural lands and sensitive receivers there is a potential for operational activities (i.e. excavation and hot works) to impact upon third-party property.

5.10.2 Outcome

The Tenement Holder must, during construction and operation, ensure that there are no adverse impacts to third party land use or property on or off the land as a result from mining operations.

5.10.3 Control and Management Strategies

Control and Management Strategies
Operational • Hot works activities if required onsite will be undertaken within the cleared quarry footprint away from vegetation. • Fire-fighting equipment present onsite and maintained in good working order. • Fire-fighting exercises undertaken (training use of extinguishers, emergency response and preparedness). • No hot works (welding) during total fire ban conditions. • Works within proximity to the SAPN overhead transmission line to be undertaken in accordance with SAPN guideline NICC404. • No excavations within 10 m horizontally from the base of any SAPN infrastructure. • Construction of earth bund adjacent to the ElectraNet transmission lines in accordance with approved QDP's to prevent quarry operations being undertaken within 50 m of the ElectraNet transmission lines.
Uncertainty and Assumptions of Control Strategies
Control measures are considered standard practice for the quarry industry and are proven to be effective in the prevention of potential impacts.
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.10.4 Environmental Objective / Outcome and Measurement Criteria

Protection of Third-Party Property	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must, during construction and operation, ensure that there are no adverse impacts to third party land use or property on or off the land as a result from mining operations.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement All incidents involving damage to third-party property resulting from the quarry Site are recorded in quarry management logbook and investigated by a suitably qualified person within one (1) calendar month (or other time as agreed with the Mining Regulator) and the results of the investigation show that the incident could not have reasonably been prevented by the quarrying activity. 2. What will be Measured and the Form of Measurement Quarry management logbook records for evidence of third-party incident and investigation. 3. Location of Measurement Location of incident. 4. Frequency At the time of incident.	

5. Control / Baseline Data N/A.

5.11 Surface Water

5.11.1 Context

Site hydrology is discussed in Section 2.7 Surface Water.

As described in Section 2.2 Topography and Landscape, the topography of the Site ranges in height between approximately 90 mAHD (central and north) and 44 mAHD (south east). The Site land elevations are slightly undulating across the northern and western portion, and slopes downwards to the eastern and south eastern boundaries.

Surface waters generally flow from the north towards the western boundary or the south east corner as shown in Drawing No. 1742.DRG.013R2 **–** Surface Water Drainage Map. Offsite discharges of surface waters are limited to clean surface waters derived from rainfall runoff on buffer land (not disturbed) generally draining to the west of the Site. Surface water runoff from future disturbed areas within the Site area will be directed inward and captured by the quarry pit floor.

The Final Landform has been designed to utilise all overburden material generated from Site and establish a free draining landform with a gentle 1V:4H gradient towards the south eastern corner of the Site as outlined in Drawing No. 1742.DRG.022R2 **–** Conceptual Final Landform.

5.11.2 Objective / Outcome

Operational
The Tenement Holder must ensure there is no adverse impact on surface water quantity or quality as a result of mining operations.

Closure
The Tenement Holder must ensure no contamination of surface water occurs post mine completion as a result of mining operations within the land.

5.11.3 Control and Management Strategies

Control and Management Strategies
Operational • All surface waters effected by disturbed land to be directed to quarry pit or effective containment pond. • Manage stormwater flows by use of mitigation strategies such as using a perimeter bund, diversion banks or drains, and containment ponds. • Undertake progressive rehabilitation of disturbed areas to the extent practicable. • Stabilise permanent bunds and internal drains to prevent erosion. Closure • Ensure suitable erosion and sediment control measures are in place at the completion of quarry operation. • Progressive rehabilitation of terminal faces battered to 1V:4H and appropriately vegetated.
Uncertainty and Assumptions of Control Strategies
The control strategies nominated are known to be effective and apply industry standards for the control and management of sediment laden surface water, therefore uncertainty of the effectiveness of these strategies is low.
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.11.4 Environmental Objective Outcome and Measurement Criteria

Surface Water	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must ensure there is no adverse impact on surface water quantity or quality as a result of mining operations.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Quarry records demonstrate that surface water drainage has been established and directs all water from disturbed areas of the quarry into the pit or an effective containment pond. Quarry records demonstrate that following heavy rainfall events (>30 mm over 24 hours) and on a quarterly basis, inspections occur confirming that all surface water affected by disturbed land has been directed into the pit and does not leave the Site. 2. What will be Measured and the Form of Measurement Records of inspection. 3. Location of Measurement Within the tenements. 4. Frequency Following heavy rainfall events (>30 mm over 24 hours) and quarterly basis. 5. Control / Baseline Data Not Applicable.	

Surface Water	
Quarry Phase	Objective / Outcome
Closure	The Tenement Holder must, ensure no contamination of surface water occurs post mine completion as a result of mining operations within the land.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement An inspection and report from a suitably qualified person conducted once prior to surrender application will verify that the final landform has been constructed as designed with faces battered to 14 degrees (1V:4H) and appropriately vegetated preventing contaminated water generated as a result of erosion from rehabilitated areas leaving the Site. 2. What will be Measured and the Form of Measurement Final landform construction and adherence to final approved design. 3. Location of Measurement Within the tenements and rehabilitated landform. 4. Frequency Prior to revocation of the tenement. 5. Control / Baseline Data Not Applicable.	

5.12 Groundwater

5.12.1 Context

Groundwater is discussed in Section 2.6 Groundwater.

Results of the groundwater desktop investigation undertaken by GWS indicate that the groundwater elevations beneath the Site are predicted to be at least 30 mAHD and confined within the Cambrian Bedrock underlying the targeted sand resource. Whilst the sand resource is located above the Cambrian Bedrock containing the groundwater aquifer, the depth of quarrying at the Site has been restricted to 37 mAHD to leave a conservative buffer of seven (7) m above the predicted groundwater levels.

As the groundwater is of unsuitable for human consumption or agricultural purposes and there is an absence of Groundwater Dependent Ecosystems (GDE's) in the area (no receptors), and quarrying activities are not planned to be undertaken within seven (7) m of the predicted groundwater levels (pathway), groundwater impacts from quarrying activities are the Site are not anticipated.

5.12.2 Objective / Outcome

The Tenement Holder must ensure there is no adverse change to the quantity of groundwater within aquifers available to existing users and groundwater dependent ecosystems, outside of the predicted extent of groundwater drawdown delineated by the groundwater model, as a result of mining activities.

5.12.3 Control and Management Strategies

Control and Management Strategies
Operational • Adherence with QDP's Drawing No. 1742.DRG.019R2 – Quarry Development Plan - Stage 1, Drawing No. 1742.DRG.020R2 – Quarry Development Plan - Stage 2, Drawing No. 1742.DRG.021R2 – Quarry Development Plan - Stage 3, Drawing 1742.DRG.028R1 – Quarry Development Plan - Stage 4, Drawing No. 1742.DRG.022R2 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections. • Regular review of quarry development pit floor levels to ensure operations correspond with QDP's and its commitment to remain three (3) m above groundwater. • Extraction depth to remain above 37 mAHD.
Uncertainty and Assumptions of Control Strategies
Predicted groundwater levels have been made by a qualified groundwater hydrologist based on measured regional groundwater measurements. The final pit depth has been conservatively limited to 37 mAHD to ensure a three (3) metre buffer to groundwater even if the predicted groundwater level is up to four (4) m lower than actual.
Sensitivity to Change of Assumptions
A dramatic change to the predicted groundwater levels would need to occur to affect the control strategy. Therefore, even a large change in the predicted groundwater levels of one (1) to four (4) m, would not impact the success of the control strategy.

5.12.4 Environmental Object / Outcome and Measurement Criteria

Groundwater	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must ensure there is no adverse change to the quantity of groundwater within aquifers available to existing users and groundwater dependent ecosystems, outside of the predicted extent of groundwater drawdown delineated by the groundwater model, as a result of mining activities.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Records from annual surveys demonstrate that the no areas within the pit shell are below 37 mAHD. 2. What will be Measured and the Form of Measurement The pit shell topography in mAHD using recognised surveying methods and equipment. 3. Location of Measurement Within the tenements. 4. Frequency Annually. 5. Control / Baseline Data 30 mAHD predicted groundwater levels. Groundwater salinity >10,000 mg/L.	

5.13 Post Mining Land Use

5.13.1 Context

Post Mining Land Use is discussed in Section 3.9 Description of Quarry Site at Completion.

At the completion of extraction activities and progressive rehabilitation work, it is envisaged that the Site will be returned to the historic and current use of grazing and agricultural land, as shown in Drawing No. 1742.DRG. 022 **–** Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 **–** Conceptual Final Landform Cross Sections. The conceptual final landform has been designed to be sympathetic to the surrounding land uses and to blend in with the natural topography.

The Site is to be mined in stages and the *waste management strategies for overburden* are as follows:

- Continue quarrying out open quarry faces already stripped of topsoil and overburden.
- Strip new areas to be quarried of topsoil and overburden. Topsoil will be stockpiled behind the screening mounds and overburden will be either used to build the perimeter screening mound or transported to a nearby terminal operating face and used directly as backfill.
- This process of staged quarrying and short-haul overburden backfilling will continue through Stages 1 – 4.
- A stockpile of overburden will be left in the centre of the quarry pit to be used for the rehabilitation of the final open sections of the pit.

5.13.2 Objective / Outcome

The Tenement Holder must ensure the land is progressively and finally rehabilitated to support the future land use agreed by the Director of Mines or other authorised officer.

5.13.3 Control and Management Strategies

Control and Management Strategies
Operational • Using earthmoving equipment to progressively shape and trim the workings to the desired design profiles and flattening the gradients of batters on reaching the terminal limits of extraction. • Rounding or marrying the contours into the natural ground surface. • Topsoiling of contours and seeding prior or during wetter months. • Providing access to the terminal workings to allow maintenance of rehabilitation works • Designing landform and drainage to control erosion. • Areas to be spread are to be re-profiled prior to placing of overlying materials • Topsoil and overburden are to be removed from stockpiles in a manner that avoids vehicles travelling over the stockpiles • Topsoil and overburden are to be respread in the reverse sequence to its removal where possible so that the original soil layer is returned to the surface to re-establish the entrapped seed content of the soil • After spreading topsoil, ensure the surface is left in a roughened state to assist moisture infiltration and inhibit soil erosion • Soil spreading is to be immediately followed by seeding or planting if applicable. • If erosion occurs on treated surfaces, the area is to be re-profiled and re-spread as necessary. Traversing tracked machinery perpendicular to the slope gradient may be undertaken assist in reducing the erosion potential of the re-profiled surface). • Roads and tracks located within rehabilitation areas that are no longer required to be rehabilitated (ripped if compacted), topsoiled and seeded. Ongoing access is to be prevented to these roads and tracks to avoid compaction and increase germination survival rates. • Surveys will be completed at the completion of each QDP stage to ensure that the landform has been constructed as per the related drawing. Closure • All disturbed areas remaining at the end of Stage 4 to be rehabilitated using the strategies described above. • Upon completion of quarrying operations, all plant, equipment and materials shall be removed from the Site to the satisfaction of the Chief Inspector of Mines. • Final landform is consistent with Drawing No. 1742.DRG. 022 – Conceptual Final Landform and Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections, and final batters have a slope gradient no greater than 1V:4H.
Uncertainty and Assumptions of Control Strategies
The control strategies nominated are known to be effective and apply industry standards for rehabilitation and creating landform suitable for agricultural purposes, therefore uncertainty of the effectiveness of these strategies is low.
Sensitivity to Change of Assumptions
The sensitivity of the control measures to a change of assumptions is low.

5.13.4 Environmental Objective / Outcome and Measurement Criteria

Post Mining Land Use	
Quarry Phase	Objective / Outcome
Operational	The Tenement Holder must ensure the land is progressively and finally rehabilitated to support the future land use agreed by the Director of Mines or other authorised officer.
Objective / Outcome Achievement	
1. Objective / Outcome Achievement Records from surveying and inspections undertaken by a suitably qualified person, or qualified people, at the end of each quarry development stage and at the completion of quarrying demonstrates that the rehabilitated landform is consistent with the relevant QDP Stage and final landform drawings and supports a grazing and / or agricultural land use. 2. What will be measured and the form of measurement	

Records from surveying and inspections.

3. Location of measurement
   Within the tenements and rehabilitated landform.
4. Frequency
   At completion of Stage 1 – 4, and at the completion of the final rehabilitation.
5. Control / Baseline Data
   Drawing No. 1742.DRG.019R2 – Quarry Development Plan - Stage 1
   Drawing No. 1742.DRG.020R2 – Quarry Development Plan - Stage 2
   Drawing No. 1742.DRG.021R2 – Quarry Development Plan - Stage 3
   Drawing No. 1742.DRG.028R1 – Quarry Development Plan - Stage 4
   Drawing No. 1742.DRG.022R2 – Conceptual Final Landform
   Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections

6. Operator Capability

The Price Sand Quarry is operated by Direct Screens-Holdings Pty Ltd, which is a subsidiary the ASX 100 listed Adbri Company (Adbri). At the time of submissions, Adbri holds the number four (4) position in the concrete and aggregates market in Australia with operations extending across South Australia, Victoria, Northern Territory, New South Wales and Queensland.

Adbri operate several large extractives operations within South Australia under authority of the *Mining Act 1971* and the *Environment Protection Act 1993*, and in accordance with other environmental legislation. Adbri is aware of their social and environmental regulatory obligations as a quarry operator, and over several years, have demonstrated the appropriate technical, operational and financial capabilities and resources available for carrying out proposed quarry operations.

Furthermore, Adbri have effective systems in place to achieve compliance, and these are described in further detail below.

The Site is subject to the requirements of the Adbri Concrete and Aggregates Safety Management System (SMS). The SMS provides Health, Safety and Environment policies and procedures outlining standards relating to Work, Health and Safety and Environmental matters. The SMS outlines responsibilities, procedures and actions required of employees and contractors and are certified to AS/NZS ISO 9001:2008 Quality management systems and AS/NZS 4801:2001 Occupational health and safety management systems.

Site personnel are required to report any incident, accident, injury / near miss and / or third-party complaints to their Manager / Supervisor as soon as possible after the occurrence. Incidents and complaints are submitted to management using the Adbri Incident Report form to the Quarry Manager within 24 hours of the event. The incident is then entered in to Cintellate (Online reporting system). Incidents are investigated and where necessary reported to the relevant regulating authority.

Complaints are entered into a register, acknowledged within 48 hours and closed out within seven (7) days or as soon as reasonably practicable. Outcomes of investigations are typically provided to the complainant as soon as reasonably practicable.

The Quarry Manager is responsible for operations onsite with the support of the Quarry Operations Manager, Health and Safety staff, engineers and advisors. Regular review and auditing of the SMS by the Health, Safety and Environment (HSE) Manager and Quarry Manager ensures the Site complies with relevant legislative requirements and the objectives and criteria commitments made in this document.

7. Lease / Licence Conditions

Operational management systems ensure the Site consistently complies with lease conditions and achieves operational and closure outcomes. Refer Attachment 6 – Extractive Minerals Lease 6519 and Attachment 1 – EPA Licence (No.2245) for lease and licence conditions.

Lease / Licence	Specific Conditions	Program Reference
EML 6035	First Schedule – 1. Quarrying operations may be carried out for the recovery of sand and gravel from the area of the lease.	Refer to Section 3.2.2 – Resources within this document.
	First Schedule – 4. The lessee shall ensure that land disturbed by quarrying is rehabilitated to achieve a regular landform, to minimise erosion, and return the land to a grazing and cropping after use.	Refer to following sections: • Section 3.3.3 – Sequence of Quarrying and Progressive Rehabilitation • Section 3.9 – Description of Quarry Site at Completion • Section 5.13 – Post Mining Land Use and the following drawings: • Drawing No. 1742.DRG.022 – Conceptual Final Landform • Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections within this document.
	Second Schedule – 1. The lessee shall ensure that land disturbed by quarrying operations is progressively rehabilitated to the satisfaction of the Chief Inspector of Mines.	Refer to Section 3.3.3 – Sequence of Quarrying and Progressive Rehabilitation and the following drawings: • Drawing No. 1742.DRG.019R2 – Quarry Development Plan - Stage 1 • Drawing No. 1742.DRG.020R2 – Quarry Development Plan - Stage 2 • Drawing No. 1742.DRG.021R2 – Quarry Development Plan - Stage 3 • Drawing No. 1742.DRG.028R1 – Quarry Development Plan - Stage 4 • Drawing No. 1742.DRG.022R2 – Conceptual Final Landform • Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections within this document.
	Second Schedule – 2. The lessee shall ensure that topsoil is progressively stripped ahead of mining and shall be temporarily stockpiled for use in the progressive rehabilitation of land disturbed by mining.	Refer to following sections: • Section 2.3 – Topsoil and Subsoil • Section 3.3.4.1 – Topsoil and Subsoil Stockpiles Section 5.5 – Soil within this document.
	Second Schedule – 3. The lessee shall ensure that land disturbed by mining operations is, when practicable to do so and in accordance with the appropriate seasonal conditions, progressively re-	Refer to following sections: • Section 3.3.3 – Sequence of Quarrying and Progressive Rehabilitation • Section 3.6.7 – Erosion, Sediment and Silt Control

	spread with topsoil and sown to a mixture of grasses to prevent soil erosion, to the satisfaction of the Chief Inspector of Mines.	and the following drawings: • Drawing No. 1742.DRG.019R2 – Quarry Development Plan - Stage 1 • Drawing No. 1742.DRG.020R2 – Quarry Development Plan - Stage 2 • Drawing No. 1742.DRG.021R2 – Quarry Development Plan - Stage 3 • Drawing No. 1742.DRG.028R1 – Quarry Development Plan - Stage 4 • Drawing No. 1742.DRG.022R2 – Conceptual Final Landform • Drawing No. 1742.DRG.022AR2 – Conceptual Final Landform Cross Sections within this document.
	Second Schedule – 4. The lessee shall ensure that upon completion of quarrying operations, all plant, equipment and materials shall be removed from the Site to the satisfaction of the Chief Inspector of Mines.	Refer to following sections: • Section 3.9 – Description of Quarry Site at Completion • Section 5.13 – Post Mining Land Use within this document.
EML 6519	First Schedule – Authorised Mining Operations 1. Mining operations authorised by the grant of the Mining Tenement must: 1.1. Only be for the recovery of extractive minerals including, but not limited to, sand; and 1.2. Be consistent with the mining operations described in the mining proposal document dated March 2020.	Refer to the following sections: • Section 3.2.2 – Resources • Section 3.3.3 – Sequence of Quarrying and Progressive Rehabilitation within this document.
	Sixth Schedule – Mine Closure and Rehabilitation Strategies 16. The Tenement Holder is required to address the following matters for the purposes of Regulation 65(2)(c) of the Regulations in relation to the Post Mining Land Use Outcome in Sixth Schedule Clause 15. 16.1. Provide appropriate waste management strategies for overburden.	Refer to the following sections: • Section 3.3.3 – Sequence of Quarrying and Progressive Rehabilitation • Section 5.13 – Post Mining Land Use within this document.
EPA Licence 2245	1 CONTROL OF EMISSIONS 1.1 Dust Prevention – The Licensee must take all reasonable and practicable measures to prevent dust from leaving the Premises.	Refer to following sections: • Section 2.15 – Dust and Air Quality • Section 5.8 – Dust within this document.
	2 WASTE MANAGEMENT 2.1 No Disposal of Waste – The Licensee must not dispose of any waste at the Premises. 2.2 Waste Permitted to Be Received –	Refer to following sections: • Section 3.5.3 – Processing Wastes • Section 3.5.4 – Industrial and Domestic Wastes

	The licensee must only receive construction and demolition waste (inert) at the premises.	• Section 5.6 – Waste Disposal within this document.
	3 OPERATIONAL MANAGEMENT 3.1 Bunding – The licensee must ensure that all chemicals or chemical products are stored, loaded or unloaded in an appropriately bunded area. *Notes: The EPA will assess the appropriateness of any bund against the EPA's 'Bunding and Spill Management Guidelines'.*	Refer to following sections: • Section 3.5.4 – Industrial and Domestic Wastes • Section 3.6.5 – Fuel and Chemical Storage • Section 5.6 – Waste Disposal within this document.
	3 OPERATIONAL MANAGEMENT 3.2 Complaints Register – The Licensee must: 3.2.1 prepare and maintain a register of all complaints concerning environmental issues. 3.2.2 ensure the register includes: a) the date and time that the complaint was made. b) details of the complaint including the likely cause of events giving rise to the complaint. c) the contact details of the complainant (if permitted by the complainant); and details of any action taken in response to the complaint by the Licensee.	Refer to Section 4.1 – Complaints Register within this document.
	3 OPERATIONAL MANAGEMENT 3.3 Dragout Minimisation – The Licensee must maintain all vehicles used at the Premises so as to minimise dragout outside the Premises.	Refer to Section 3.6.1.1 – Dragout within this document.
	3 OPERATIONAL MANAGEMENT 3.4 Pollution Control Equipment Register – The Licensee must: 3.4.1 maintain all Pollution Control Equipment to ensure that pollution is minimised; and 3.4.2 keep a written record of all inspections of Pollution Control Equipment, which includes: a) the name of the recording officer. b) the date of each inspection of the equipment. c) details of the equipment that was inspected. d) an assessment of whether the equipment was working effectively; and	Refer to following sections: • Section 3.6.5 – Fuel and Chemical Storage • Section 5.6 – Waste Disposal within this document.

	the action taken (if required) to rectify any faults or failures.	
	3 OPERATIONAL MANAGEMENT 3.5 Wastewater Management System – The Licensee must ensure that: 3.5.1 the Premises incorporates a wastewater management system; and 3.5.2 the system is effectively operating in respect of any wastewater generated at the Premises while the Premises are being used for the licensed activity.	Refer to following sections: • Section 3.6.7 – Erosion, Sediment and Silt Control • Section 5.11 – Surface Water within this document.

8. Reference List

The Department of Environment, Water (DEW) 2021, Yaringa Land System (YAG) Land System Report

Enviro Data SA 2018, *NatureMaps*, viewed May 2021, Government of South Australia http://spatialwebapps.environment.sa.gov.au/naturemaps/?locale=en-us&viewer=naturemaps.

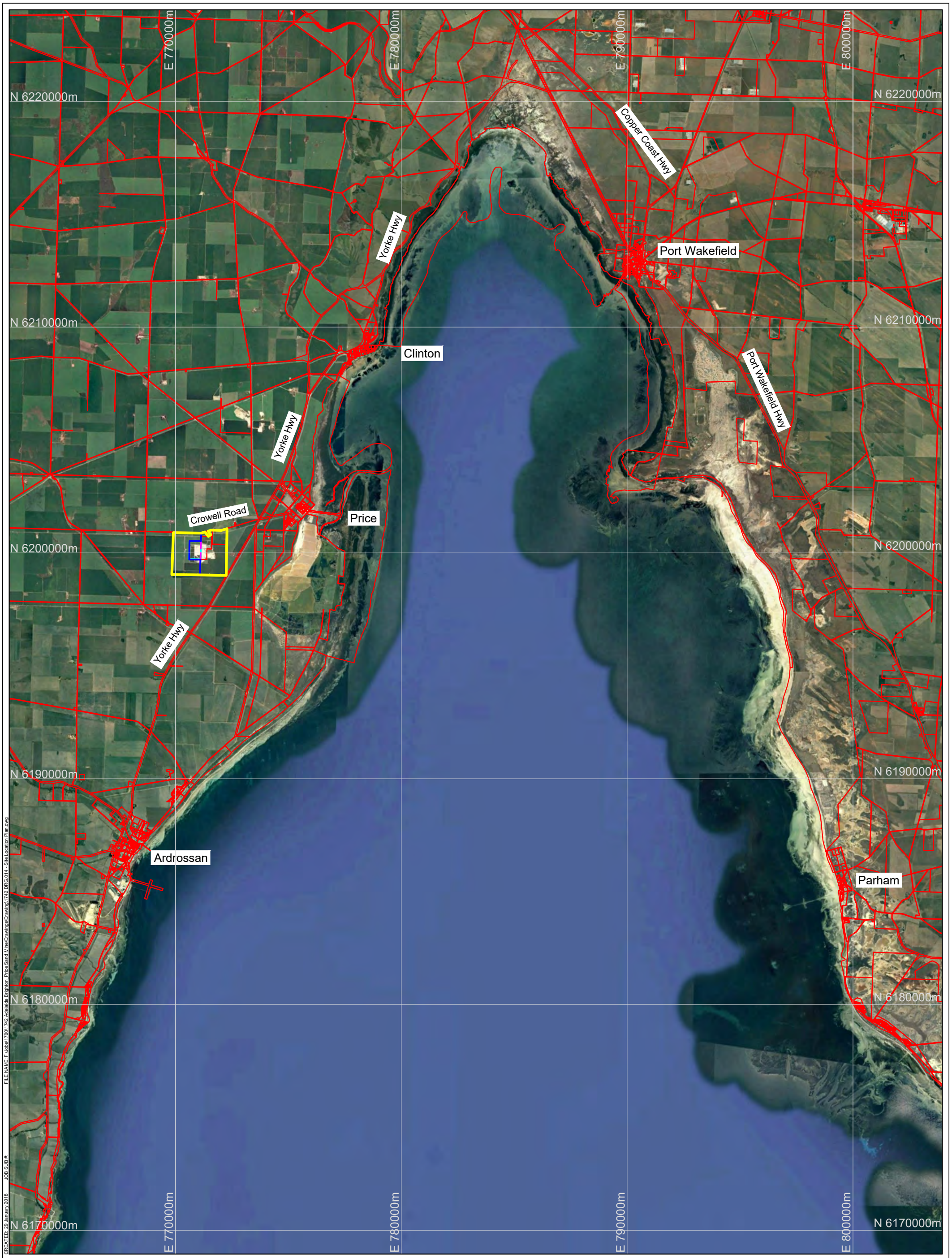
Environment Protection Authority 2016, *Liquid storage – Bunding and spill management,* Government of South Australia https://www.epa.sa.gov.au/files/47717_guide_bunding.pdf

Environment Protection Authority 2017, *Search contamination site index*, viewed February 2018 http://www.epa.sa.gov.au/data_and_publications/site_contamination_index/search-the-contamination-register

Heritage Places Database SA 2017, *Heritage Places Database Search*, viewed February 2018, Government of South Australia http://location.sa.gov.au/viewer/?map=hybrid&x=138.45735863&y=-35.25238286&z=18&uids=95,102,180

South Australian Resources Information Gateway (2018), *Department of the Premier and Cabinet,* South Australian Government, viewed February 2018, <https://map.sarig.sa.gov.au/

drawings



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CREATED: 29 January 2018 JOB SUB #:

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: 2016-05-05 CNES/Airbus
Topography:
Cadastre: Digitised SA PLB
Ecosystem:
Other:

Legend:
Cadastral Boundary
Site Boundary

PROJECT: Price Sand Mind

CLIENT: Adelaide Brighton Ltd

TITLE: Site Location Plan

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:150,000 When Printed On A3 — 0 3km
DRAWING NUMBER: 1742.DRG.014
REVISION:
DATE: 29 January 2018 DRAWN: DP
PRINTED: 29 January 2018 CHECKED:
DATUM: HORIZONTAL / VERTICAL / ZONE MGA / / 53

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E 770000m
E 770500m
E 771000m
E 771500m
E 772000m
E 772500m
E 773000m

N 6201000m
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H130300 S170
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D46412 A6
D24178 A2
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F197709 A338
D37781 A13
H130300 S145
H130300 S147E
H130300 S146
H130300 S144

Site Entry
Weighbridge & Office
Topsoil Windrow
Compound
Workshop
Fuel and Chemical Storage
Mobile Plant
Product Stockpile
C&D Stockpile

EML 6035
PMA 243
EML 6519
PM 243

FILE NAME: Z:\Shared\Data\Jobs\1700\1742 Adelaide Brighton Price Sand Mine\Drawings\Drawings\1742.DRG.024R1 - Site Layout Plan.dwg
JOB SUB #:
CREATED: 29 March 2022

REV	DESCRIPTION	DATE	BY
1	UAV updated with UAV 2021-04-08	22/07/21	MM

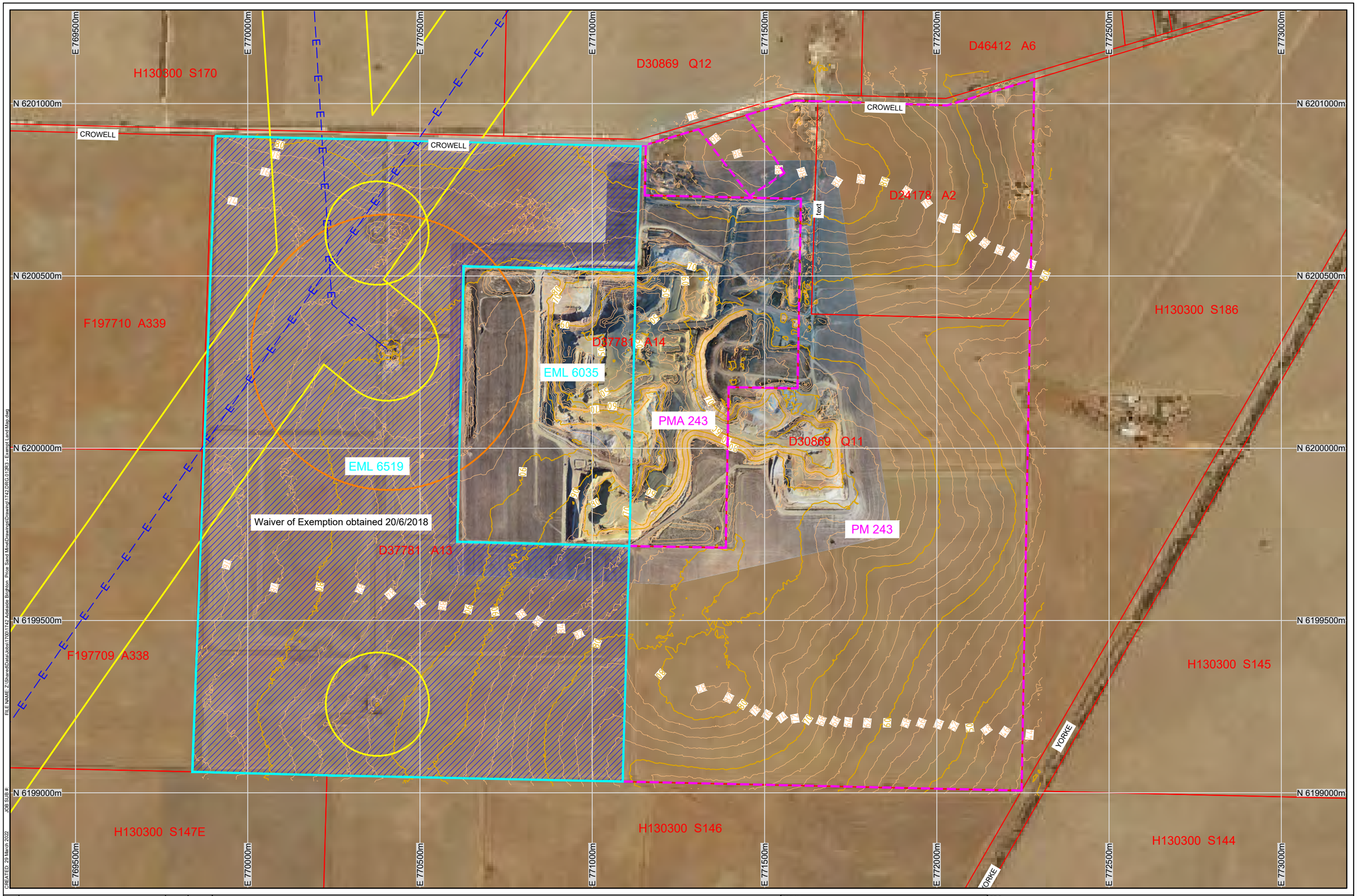
Data Sources:
Photography: UAV Survey. Captured 2021-04-08
Topography: UAV Survey. Captured 2021-04-08
Cadastre:
Ecosystem:
Other: Data.sa.gov

Legend:
- Cadastral Boundary
- Private Mines (PM)
- Mineral Claims (MC)
- Extractive Minerals Leases (EML)
- Access Route
- Directional Access

PROJECT: Price Sand Quarry
CLIENT: Adelaide Brighton Ltd
TITLE: Site Layout Plan

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m
DRAWING NUMBER: 1742.DRG.024
REVISION: 1
DATE: 4 April 2022
DRAWN: MR
PRINTED: 4 April 2022
CHECKED:
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



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JOB SUB #
CREATED: 29 March 2022

REV	DESCRIPTION	DATE	BY
1	Project Name changed	11/12/18	MR
2	EML 6519 added	22/07/21	MM
3	EML 6519 updated	02/03/22	MR

Data Sources:
Photography: UAV Survey. Captured 2021-04-08
Topography: UAV Survey. Captured 2021-04-08
Cadastre:
Ecosystem:
Other: Data.sa.gov

Legend:

- Cadastral Boundary
- Private Mines (PM)
- Extractive Minerals Leases (EML)
- Exempt Land 150m
- Exempt Land 400m
- Overhead Power lines
- Exempt Land (Crop)

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Exempt Land Map

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m
DRAWING NUMBER: 1742.DRG.012
REVISION: 3
DATE: 29 March 2022
DRAWN: MM
DATUM: HORIZONTAL / VERTICAL / ZONE
PRINTED: 29 March 2022
CHECKED: MJ
MGA / AHD / 53

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N 6200000m

N 6199500m

N 6199000m

F197710 A339

F197709 A338

D24178 A2

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D37781 A13

D30869 Q11

EML 6035

EML 6519

PMA 243

PM 243

Waiver of Exemption obtained 20/6/2018

YORKE

FILE NAME: Z:\Shared\Data\Jobs\1700\1742 Adelaide Brighton Price Sand Mine\Drawing\Drawings\1742.DRG.013R2 - Surface Water Drainage Map.dwg
JOB SUB #
CREATED: 29 March 2022

REV	DESCRIPTION	DATE	BY
1	MC and PMA added; Project name changed	14/12/18	MR
2	UAV updated with UAV 2021-04-08	22/07/21	MM

Data Sources:
Photography: UAV Survey. Captured 08-04-2021
Topography: UAV Survey. Captured 2021-04-08
Cadastre:
Ecosystem:
Other: Data.sa.gov

Legend:
- Cadastral Boundary
- Private Mines (PM)
- Mineral Claims (MC)
- Extractive Minerals Leases (EML)
- Surface Water Flow Path

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Surface Water Drainage Map

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:8,000 When Printed On A3 — 0 — 160m
DRAWING NUMBER: 1742.DRG.013
REVISION: 2
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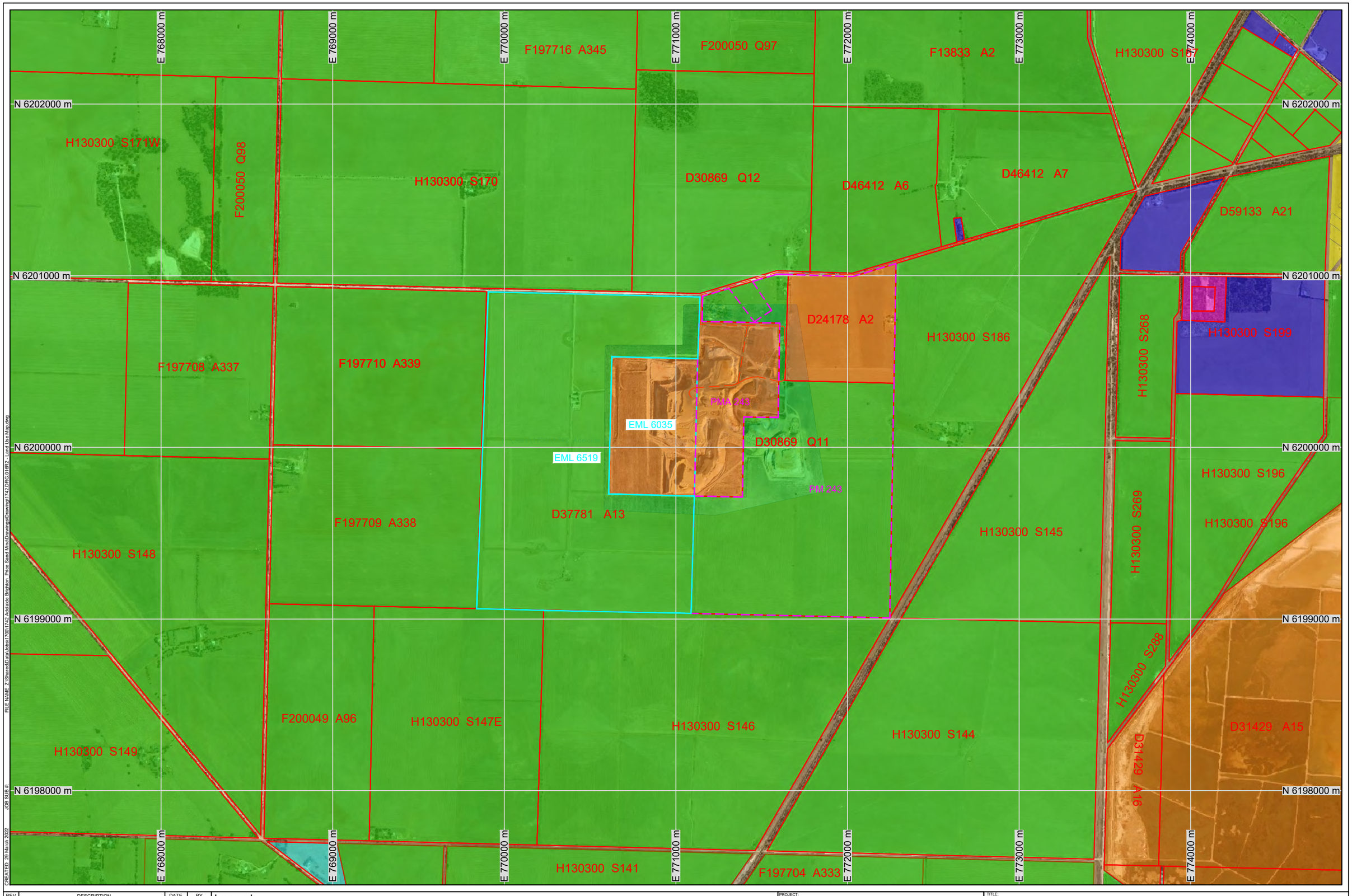
PRINTED: 29 March 2022 | CHECKED: MM
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



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JOB SUB #

CREATED: 29 March 2022

REV	DESCRIPTION	DATE	BY
1	Project Name changed	12/12/18	MR
2	EML 6519 added	29/03/22	MR

Data Sources:
Photography: UAV Survey. Captured 11-10-2017.
Topography: UAV Survey. Captured 11-10-2017.
Cadastre:
Ecosystem:
Other:

Legend:

- Cadastral Boundary
- Private Mines (PM)
- Mineral Claims (MC)
- Extractive Minerals Leases (EML)
- Agriculture
- Rural Residential
- Mine/Quarry
- Vacant
- Reserve

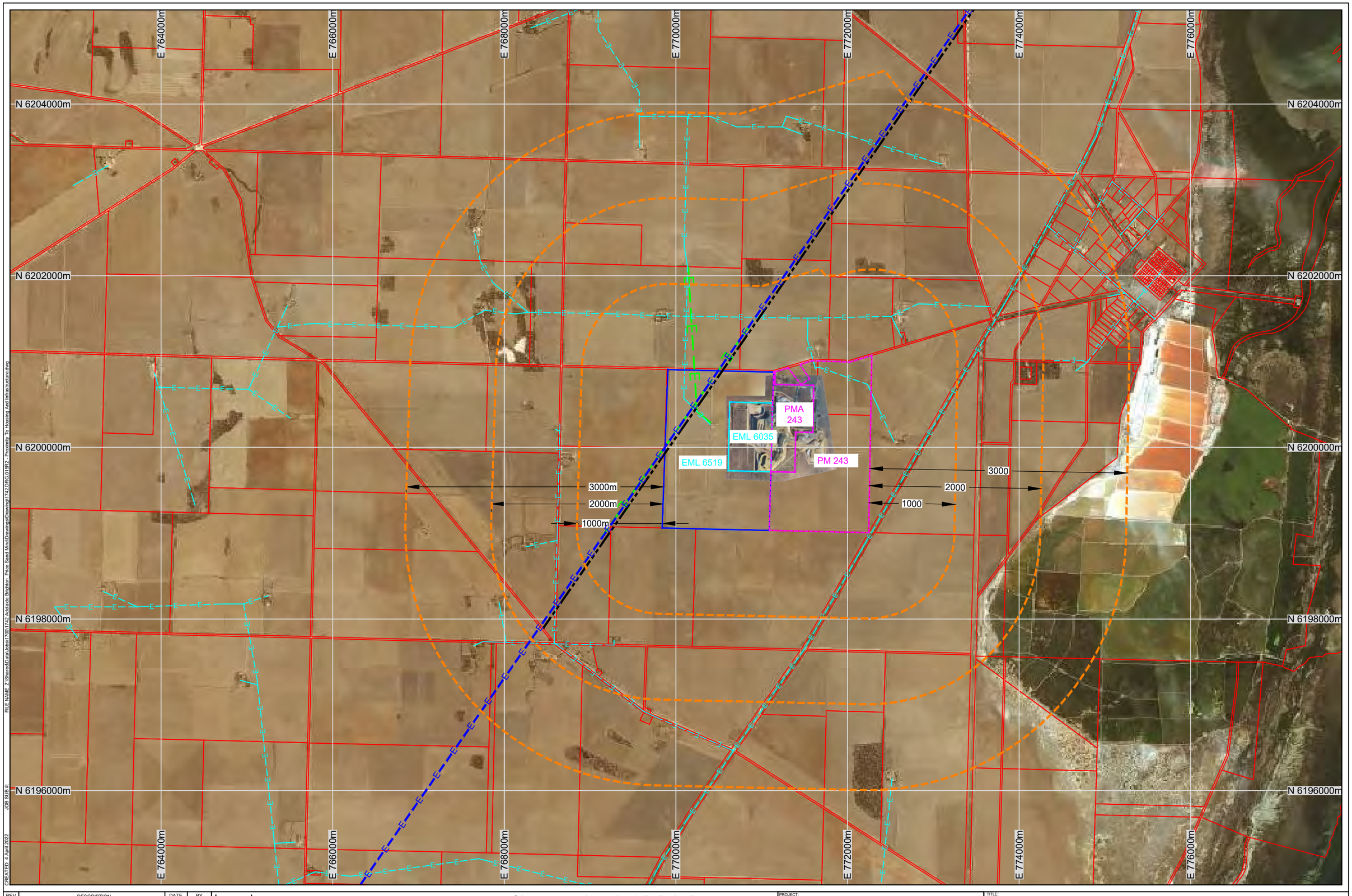
PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Land Use Map

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:20,000 When Printed On A3	0 400m	DRAWING NUMBER: 1742.DRG.016	REVISION: 2
DATE: 29 March 2022	DRAWN: MM	DATUM: HORIZONTAL / VERTICAL / ZONE	
PRINTED: 29 March 2022	CHECKED: MJ	MGA / AHD / 53	



FILE NAME: Z:\Shared\Data\Jobs\1700\1742 Adelaide Brighton Price Sand Mine\Drawings\Drawing\1742.DRG.015R2 - Proximity To Housing And Infrastructure.dwg

JOB SUB #

CREATED: 4 April 2022

REV	DESCRIPTION	DATE	BY
1	Project Name changed	12/12/18	MR
2	UAV survey 2021-04-08 added	22/07/21	MM

Data Sources:
Photography: UAV 2021-04-08, Google Earth - Image Date 2021-07-22
Topography: UAV 2021-04-08
Cadastre: Data.sa.gov
Ecosystem:
Other: Data.sa.gov

Legend:

- Cadastral Boundary
- Private Mines (PM)
- Mineral Claims (MC)
- Extractive Minerals Leases (EML)
- SA power networks overhead distribution lines
- ElectraNet Transmission Line 132KV Line
- Mineral Claim Boundary Offset
- NBN Line
- Sensitive Receptor Within 3000m

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Proximity to Housing and Infrastructure

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

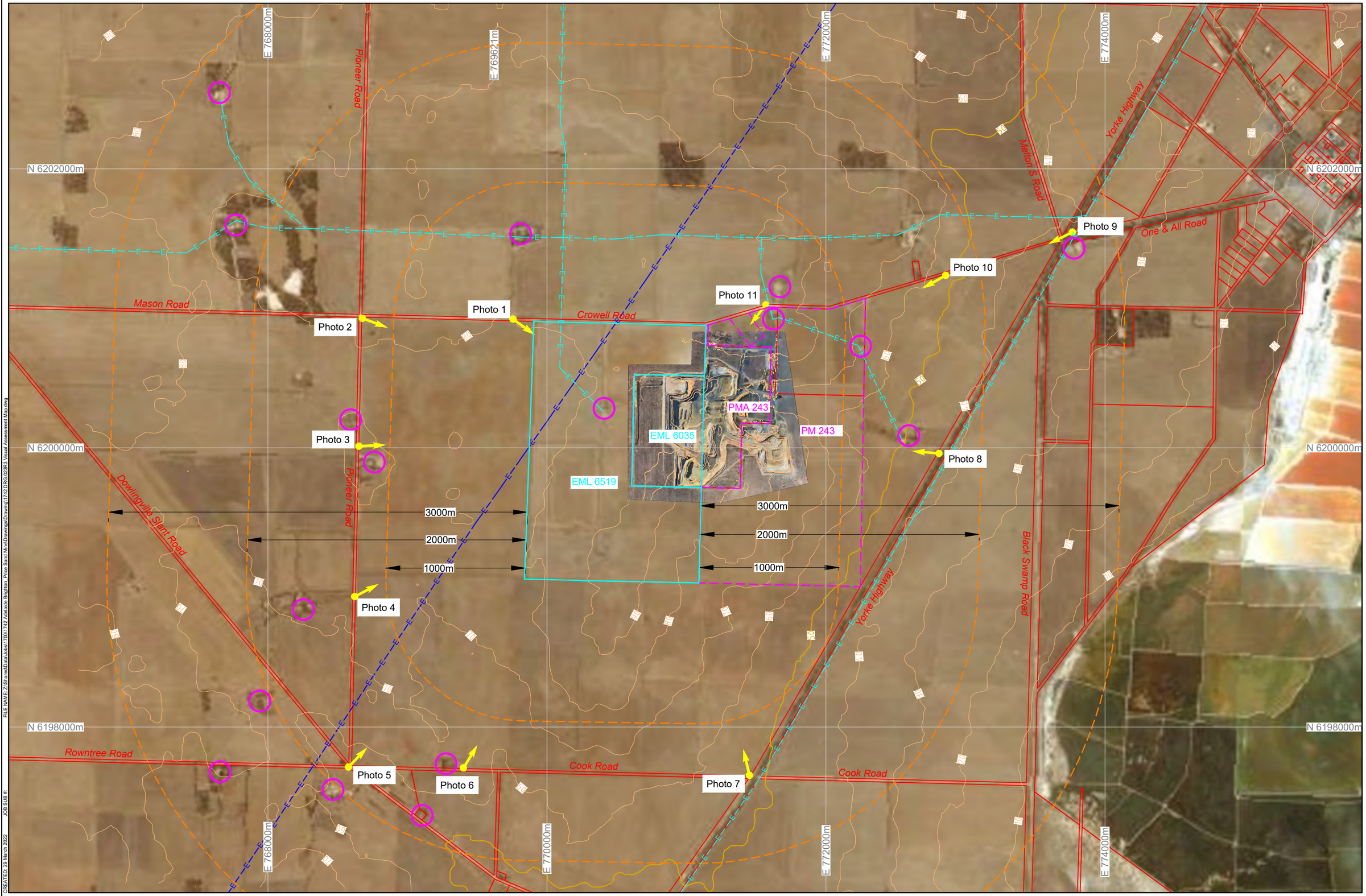
SCALE: 1:40,000 When Printed On A3 — 0 — 800m

DRAWING NUMBER: 1742.DRG.015 REVISION: 2

DATE: 4 April 2022 DRAWN: MM

PRINTED: 4 April 2022 CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



FILE NAME: Z:\Shared\Data\Jobs\1700\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawing\1742.DRG.023R3 Visual Assessment Map.dwg
JOB SUB #:
CREATED: 29 March 2022

REV	DESCRIPTION	DATE	BY
1	Map Layers Amended	30-08-18	DP
2	Project name amended & Tenements updated	17-12-18	MR
3	UAV Survey - 2021-04-08	22-07-21	MM

Data Sources:
Photography: UAV Photography 08-04-2021; Google Earth - Image Date 2021-07-22
Topography: UAV Survey 08-04-2021 (within quarry site)
Cadastre: data.gov.au
Ecosystem:
Other: SARIG

Legend:

- Cadastral Boundary
- Private Mines (PM)
- Mineral Claims (MC)
- Extractive Minerals Leases (EML)
- Sensitive Receptor Within 3000m
- Mineral Claim Boundary Offset
- SA power networks overhead distribution lines
- ElectraNet Transmission 132KV Line

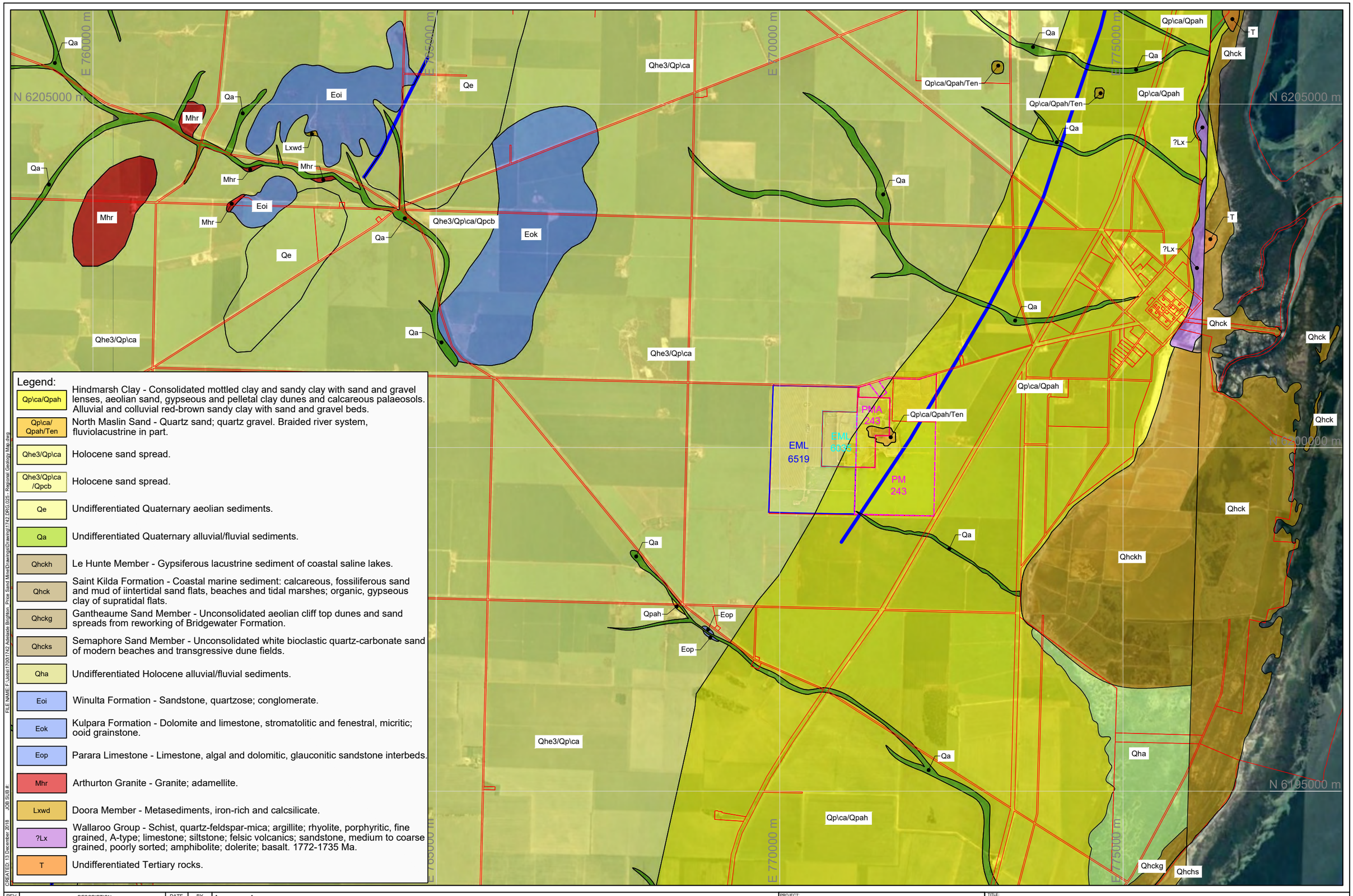
PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Visual Assessment Map

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:25,000 When Printed On A3 (0 – 500m)
DRAWING NUMBER: 1742.DRG.023
REVISION: 3
DATE: 4 April 2022
DRAWN: MR
PRINTED: 4 April 2022
CHECKED:
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



Legend:

Qp\ca/Qpah	Hindmarsh Clay - Consolidated mottled clay and sandy clay with sand and gravel lenses, aeolian sand, gypseous and pelletal clay dunes and calcareous palaeosols. Alluvial and colluvial red-brown sandy clay with sand and gravel beds.
Qp\ca/ Qpah/Ten	North Maslin Sand - Quartz sand; quartz gravel. Braided river system, fluviolacustrine in part.
Qhe3/Qp\ca	Holocene sand spread.
Qhe3/Qp\ca /Qpcb	Holocene sand spread.
Qe	Undifferentiated Quaternary aeolian sediments.
Qa	Undifferentiated Quaternary alluvial/fluvial sediments.
Qhckh	Le Hunte Member - Gypsiferous lacustrine sediment of coastal saline lakes.
Qhck	Saint Kilda Formation - Coastal marine sediment: calcareous, fossiliferous sand and mud of iintertidal sand flats, beaches and tidal marshes; organic, gypseous clay of supratidal flats.
Qhckg	Gantheaume Sand Member - Unconsolidated aeolian cliff top dunes and sand spreads from reworking of Bridgewater Formation.
Qhcks	Semaphore Sand Member - Unconsolidated white bioclastic quartz-carbonate sand of modern beaches and transgressive dune fields.
Qha	Undifferentiated Holocene alluvial/fluvial sediments.
Eoi	Winulta Formation - Sandstone, quartzose; conglomerate.
Eok	Kulpara Formation - Dolomite and limestone, stromatolitic and fenestral, micritic; ooid grainstone.
Eop	Parara Limestone - Limestone, algal and dolomitic, glauconitic sandstone interbeds.
Mhr	Arthurton Granite - Granite; adamellite.
Lxwd	Doora Member - Metasediments, iron-rich and calcsilicate.
?Lx	Wallaroo Group - Schist, quartz-feldspar-mica; argillite; rhyolite, porphyritic, fine grained, A-type; limestone; siltstone; felsic volcanics; sandstone, medium to coarse grained, poorly sorted; amphibolite; dolerite; basalt. 1772-1735 Ma.
T	Undifferentiated Tertiary rocks.

FILE NAME: F:\Jobs\17001\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawings\1742.DRG.025 - Regional Geology Map.dwg
JOB SUB #
CREATED: 13 December 2016

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: Google Earth - Image Date 2016-06-23
Topography:
Cadastre:
Ecosystem:
Other:

Legend:
- Cadastral Boundary
- Private Mines (PM)
- Extractive Minerals Leases (EML)
- Mineral Claims (MC)
- Linear Structure (Fault)

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Regional Geology

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:50,000 When Printed On A3 — 0 — 1km
DRAWING NUMBER: 1742.DRG.025
REVISION:
DATE: 13 December 2018
DRAWN: MR
DATUM: HORIZONTAL / VERTICAL / ZONE
PRINTED: 13 December 2018
CHECKED:
MGA / AHD / 53

FILE NAME: F:\Jobs\1700\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawings\1742.DRG.008R1 - Drillhole Results.dwg
JOB SUB #
CREATED: 17 December 2018

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography: UAV Survey. Captured 11-10-2017.
Topography:
Cadastre:
Ecosystem:
Other:

Legend:

- Private Mines (PM)
- Extractive Minerals Leases (EML)
- Price PQ Drillhole Location

(20m) Drillhole Depth
10 Overburden Thickness
20 Sand Thickness
* Hole Terminated in Sand

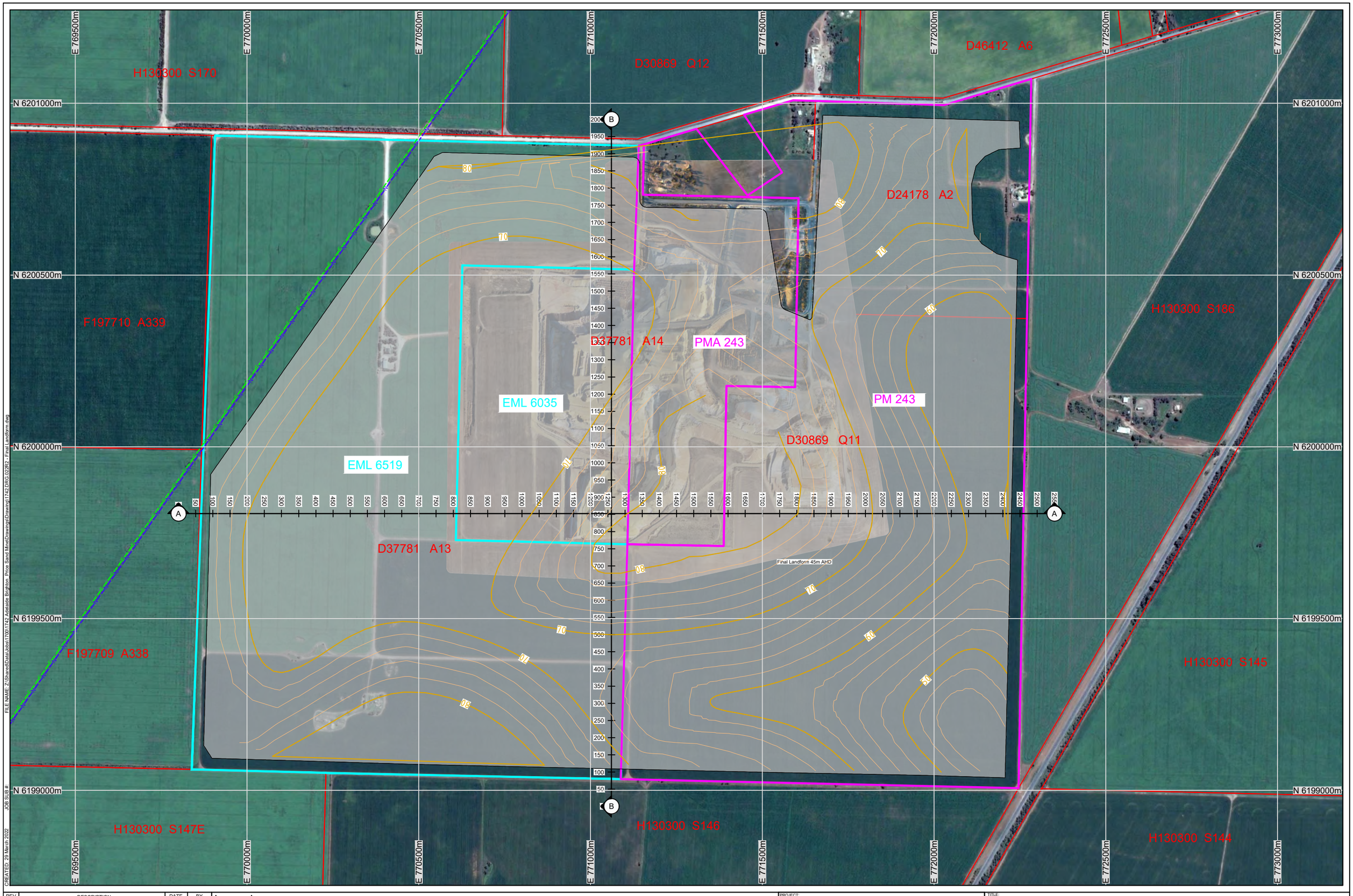
PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Drillhole Results

GROUNDWORK plus
PH: +61 7 3871 0411
www.groundwork.com.au

SCALE: 1:5,000 When Printed On A3 (0 – 100)
DRAWING NUMBER: 1742.DRG.008
REVISION: 1
DATE: 17 December 2018
DRAWN: MR
PRINTED: 17 December 2018
CHECKED:
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



REV	DESCRIPTION	DATE	BY
1	Update Landform Design. General Amendments	05-07-19	JHV
2	Update Landform Design. General Amendments	02-08-21	MM

Data Sources:
Photography: Groundwork Plus UAV Survey, Captured 2017-10-11
Topography: Groundwork Plus UAV Survey, Captured 2017-10-11
Cadastre:
Ecosystem:
Other:

Legend:

- Cadastral Boundary
- Private Mines (PM)
- Mineral Claim (MC)
- Extractive Minerals Lease (EML)
- ElectraNet Underground Fibre (N)
- Overhead Power lines (E)
- Final Landform Contours - Major
- Final Landform Contours - Minor
- Extraction Area

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Conceptual Final Landform

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m

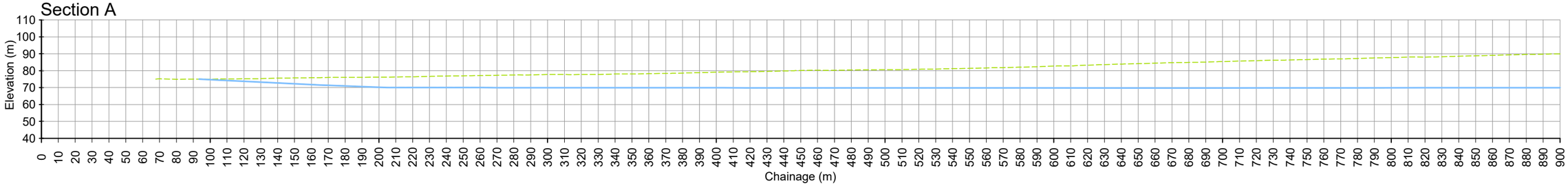
DRAWING NUMBER: 1742.DRG.022 REVISION: 2

DATE: 29 March 2022 DRAWN: JHV

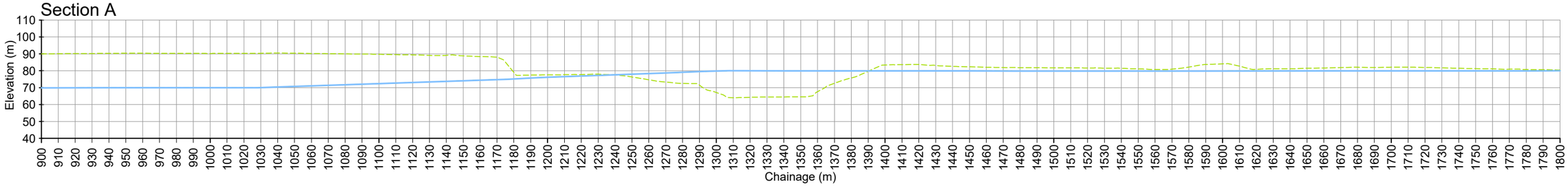
PRINTED: 29 March 2022 CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 53

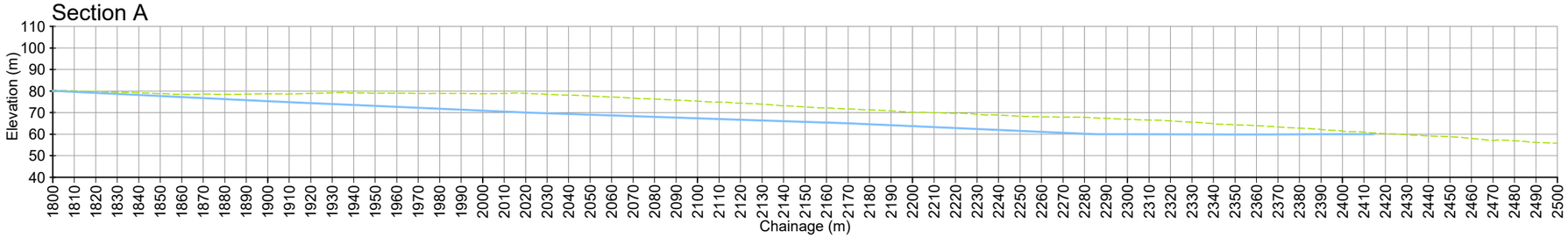
Section A



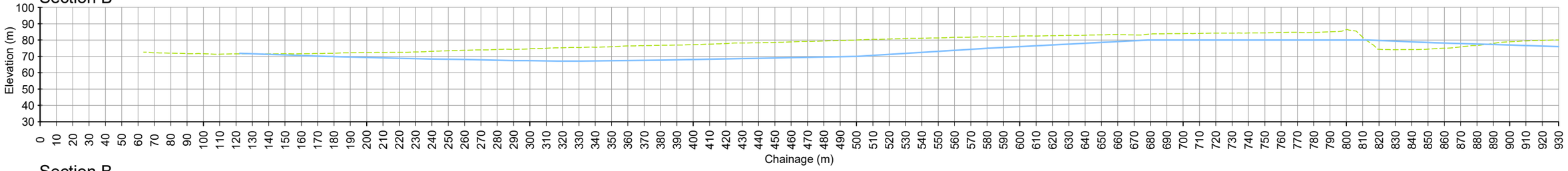
Section A



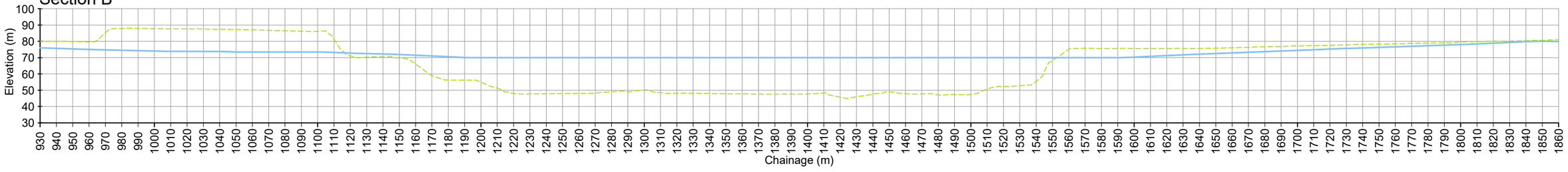
Section A



Section B



Section B



REV	DESCRIPTION	DATE	BY
1	Update Landform Design. General Amendments	05-07-19	JHV
2	Update Landform Design. General Amendments	02-08-21	MM

Data Sources:
Photography:
Topography: Groundwork Plus UAV Survey, Captured 2017-10-11
Cadastre:
Ecosystem:
Other:

Legend:
- Natural Ground Surface
- Final Landform

PROJECT: Price Sand Quarry

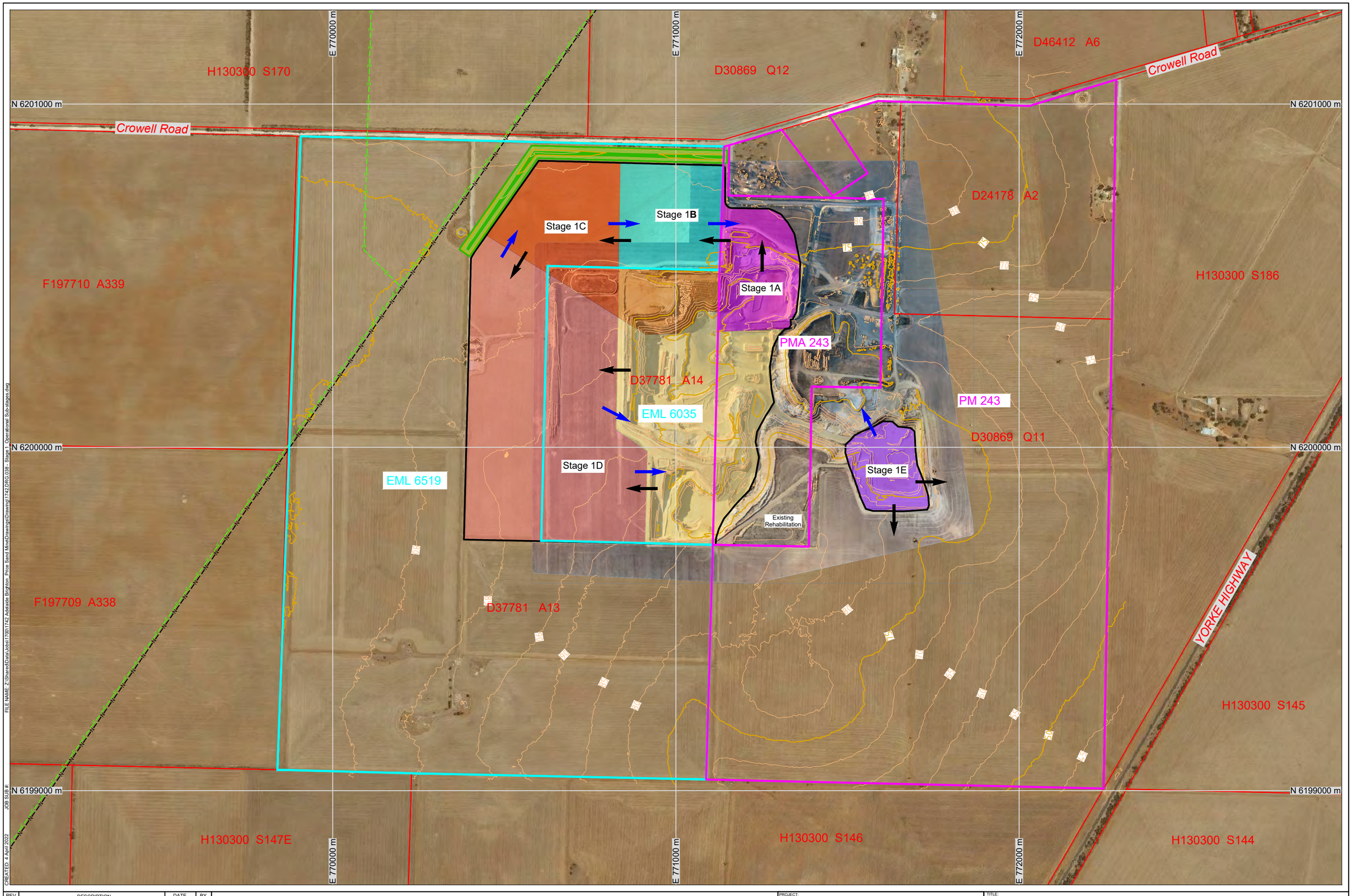
CLIENT: Adelaide Brighton Ltd

TITLE: Conceptual Final Landform Cross Sections

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:2,500 When Printed On A3 (0 — 50m)
DRAWING NUMBER: 1742.DRG.022A
REVISION: 1
DATE: 2 August 2021
DRAWN: JHV
PRINTED: 2 August 2021
CHECKED: MJ
DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 53

FILE NAME: Z:\Shared\Data\Jobs\1700\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawing\1742.DRG.022R2 - Final Landform.dwg
JOB SUB #:
CREATED: 2 August 2021



FILE NAME: Z:\Shared\Data\Jobs\1700s\1742 Adelaide Brighton Price Sand Mine\Drawings\Drawing\1742.DRG.038 - Stage 1 Operational Sub-stages.dwg
JOB SUB #
CREATED: 4 April 2022

REV	DESCRIPTION	DATE	BY
1	Update Landform & QDP Designs. General Amendments	05-07-19	JHV
2	Update Quarry Designs, Aerial Imagery and Topography	28-07-21	MR

Data Sources:
Photography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Cadastre:
Ecosystem:
Other:

Legend:
- Cadastral Boundary
- Extractive Mineral Lease
- Private Mine
- Overhead Powerlines
- Electranet Underground Fibre
- Overburden Transport
- Direction of Mining

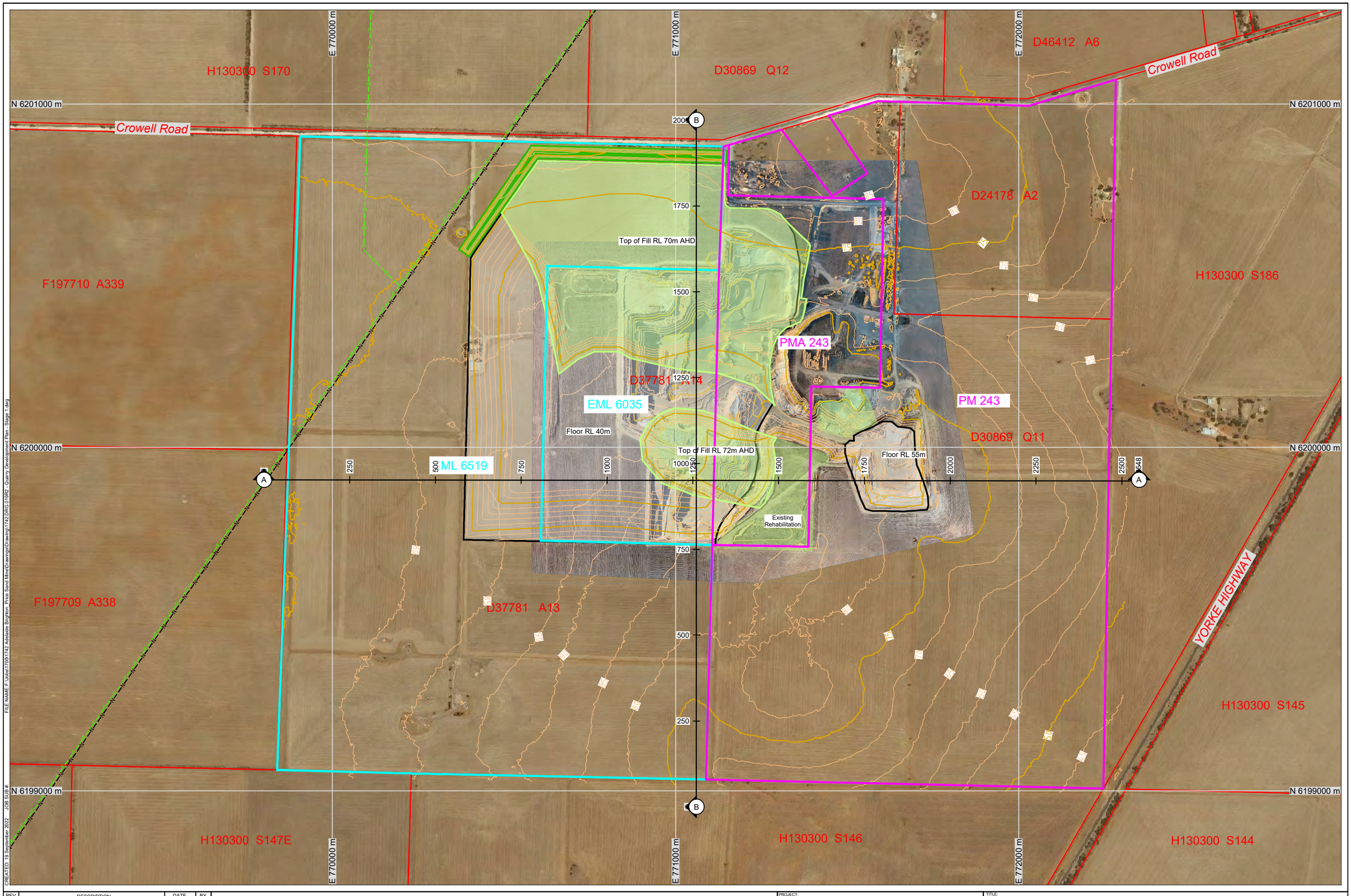
PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Stage 1 - Operational Sub-stages

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m
DRAWING NUMBER: 1742.DRG.038
REVISION:
DATE: 4 April 2022 | DRAWN: MR
PRINTED: 4 April 2022 | CHECKED: TM
DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 53



FILE NAME: F:\Jobs\1700s\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawings\1742.DRG.019R2 - Quarry Development Plan - Stage 1.dwg
JOB SUB #
CREATED: 19 September 2022

REV	DESCRIPTION	DATE	BY
1	Update Landform & QDP Designs, General Amendments	05-07-19	JHV
2	Update Quarry Designs, Aerial Imagery and Topography	28-07-21	MR

Data Sources:
Photography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Cadastre:
Ecosystem:
Other:

Legend:
- Cadastral Boundary
- Extractive Mineral Lease
- Private Mine
- Overhead Powerlines
- Electranet Underground Fibre
- Stage 2 Extraction Area
- Stage 2 Visual Screen
- Stage 2 Progressive Rehabilitation

PROJECT: Price Sand Quarry

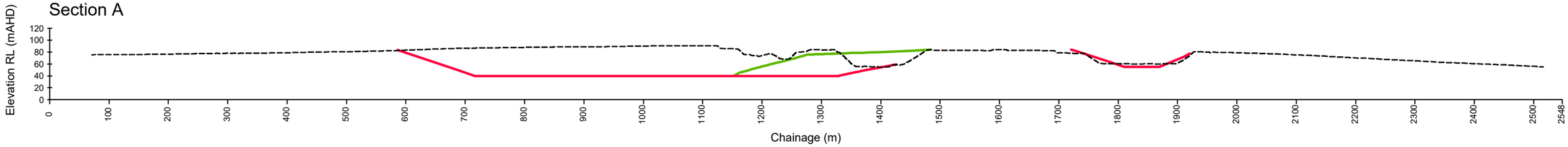
CLIENT: Adelaide Brighton Ltd

TITLE: Quarry Development Plan - Stage 1

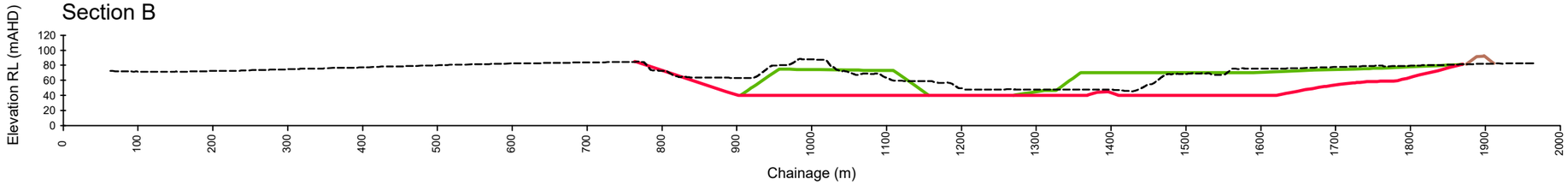
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m
DRAWING NUMBER: 1742.DRG.019
REVISION: 2
DATE: 19 September 2022 | DRAWN: MR
PRINTED: 19 September 2022 | CHECKED: MJ
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53

Section A



Section B



CREATED: 19 September 2022 JOB SUB #: FILE NAME:F:\Jobs\17\0\1742 Adelaide Brighton_Price Sand Mine\Drawing\Drawing\1742.DRG.019R2 - Quarry Development Plan - Stage 1.dwg

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography:
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-09-15
Cadastre:
Ecosystem:
Other:

Legend:
- Existing Ground Surface
- Pit Design Surface
- Progressive Rehabilitation
- Visual Screen

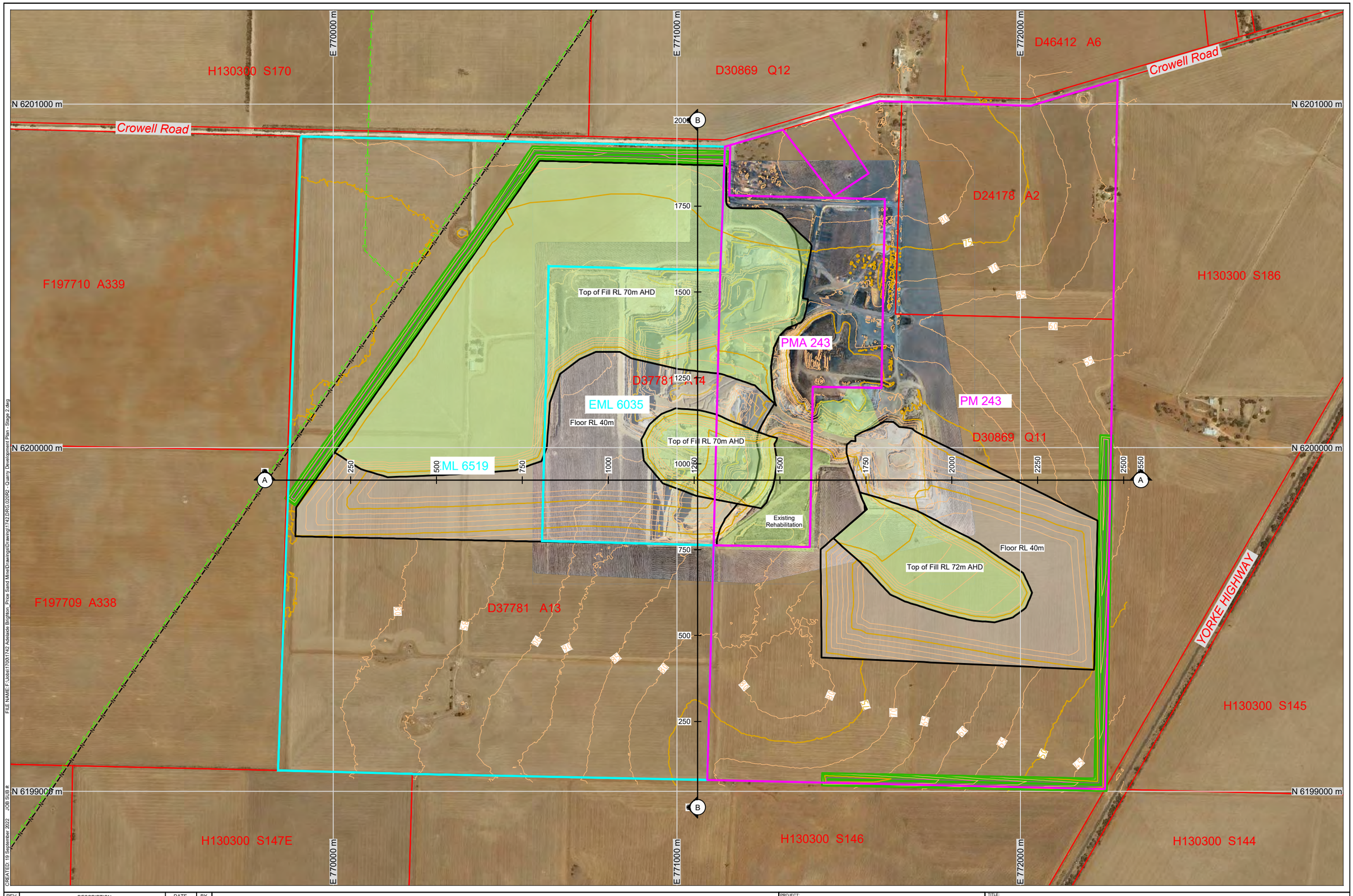
PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Cross Sections - Stage 1

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:7,000 When Printed On A3 — 0 — 140m
DRAWING NUMBER: 1742.DRG.019A
REVISION:
DATE: 19 September 2022 DRAWN: JHV
PRINTED: 19 September 2022 CHECKED: MJ
DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 53



FILE NAME: F:\Jobs\1700\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawings\1742.DRG.020R2 - Quarry Development Plan - Stage 2.dwg
JOB SUB #
CREATED: 19 September 2022

REV	DESCRIPTION	DATE	BY
1	Update Landform & QDP Designs, General Amendments	05-07-19	JHV
2	Update Quarry Designs, Aerial Imagery and Topography	28-07-21	MR

Data Sources:
Photography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Cadastre:
Ecosystem:
Other:

Legend:
- Cadastral Boundary
- Extractive Mineral Lease
- Private Mine
- Overhead Powerlines
- Electranet Underground Fibre
- Stage 2 Extraction Area
- Stage 2 Visual Screen
- Stage 2 Progressive Rehabilitation

PROJECT: Price Sand Quarry

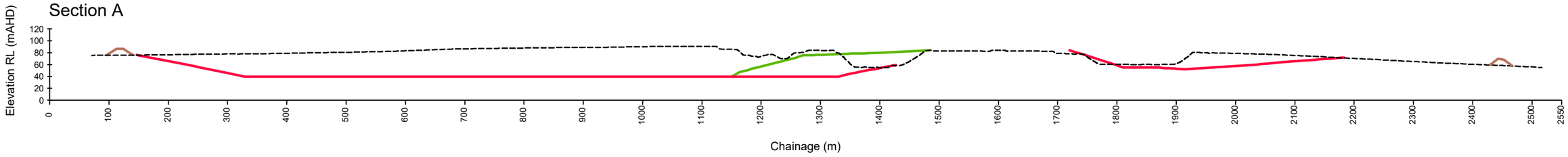
CLIENT: Adelaide Brighton Ltd

TITLE: Quarry Development Plan - Stage 2

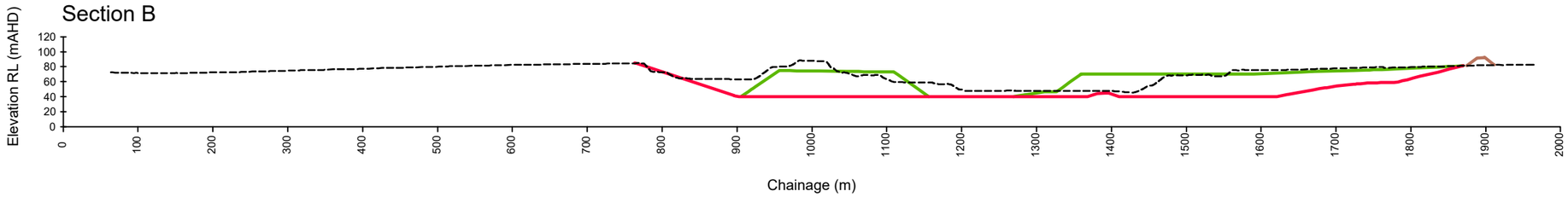
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m
DRAWING NUMBER: 1742.DRG.020
REVISION: 2
DATE: 19 September 2022 | DRAWN: MR
PRINTED: 19 September 2022 | CHECKED: MJ
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53

Section A



Section B



CREATED: 19 September 2022 JOB SUB # FILE NAME: F:\Jobs\1700\1742 Adelaide Brighton_Price Sand Mine\Drawings\Drawing\1742.DRG.020R2 - Quarry Development Plan - Stage 2.dwg

REV	DESCRIPTION	DATE	BY

Data Sources:
Photography:
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-09-15
Cadastre:
Ecosystem:
Other:

Legend:
- Existing Ground Surface
- Pit Design Surface
- Progressive Rehabilitation
- Visual Screen

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Cross Sections - Stage 2

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:7,000 When Printed On A3 (0 — 140m)

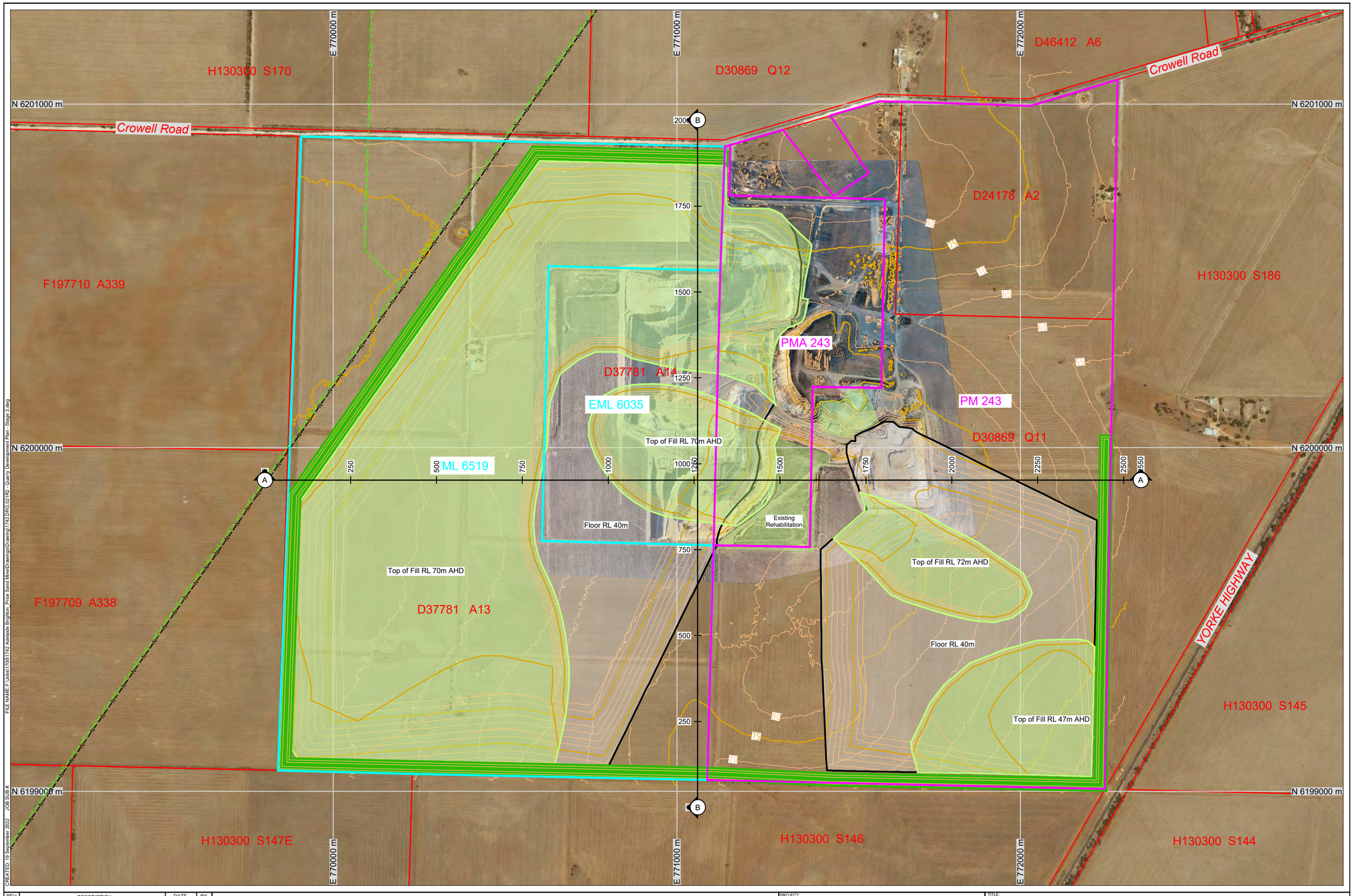
DRAWING NUMBER: 1742.DRG.020A

REVISION:

DATE: 19 September 2022 DRAWN: JHV

PRINTED: 19 September 2022 CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



FILE NAME: F:\Jobs\1700\1742 Adelaide Brighton - Price Sand Mine\Drawings\Drawings\1742.DRG.021R2 - Quarry Development Plan - Stage 3.dwg
JOB SUB #
CREATED: 19 September 2022

REV	DESCRIPTION	DATE	BY
1	Update Landform & QDP Designs, General Amendments	05-07-19	JHV
2	Update Quarry Designs, Aerial Imagery and Topography	28-07-21	MR

Data Sources:
Photography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Cadastre:
Ecosystem:
Other:

Legend:

- Cadastral Boundary
- Extractive Mineral Lease
- Private Mine
- Overhead Powerlines
- Electranet Underground Fibre
- Stage 2 Extraction Area
- Stage 2 Visual Screen
- Stage 2 Progressive Rehabilitation

PROJECT: Price Sand Quarry

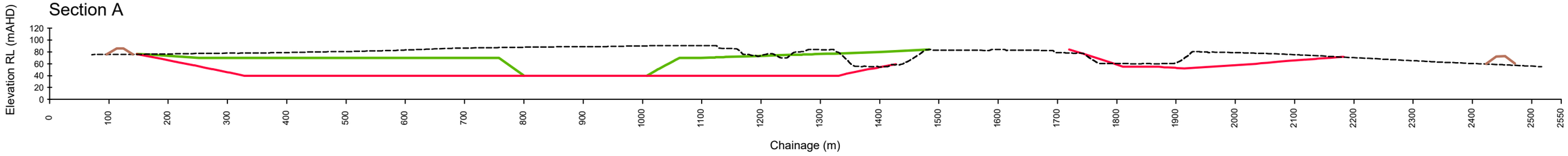
CLIENT: Adelaide Brighton Ltd

TITLE: Quarry Development Plan - Stage 3

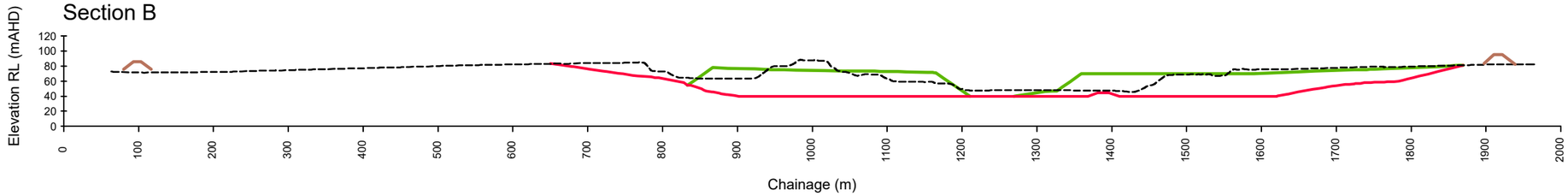
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 — 0 — 200m
DRAWING NUMBER: 1742.DRG.021
REVISION: 2
DATE: 19 September 2022 | DRAWN: MR
PRINTED: 19 September 2022 | CHECKED: MJ
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53

Section A



Section B



REV	DESCRIPTION	DATE	BY

Data Sources:
Photography:
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-09-15
Cadastre:
Ecosystem:
Other:

Legend:
- Existing Ground Surface
- Pit Design Surface
- Progressive Rehabilitation
- Visual Screen

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Cross Sections - Stage 3

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:7,000 When Printed On A3 — 0 — 140m

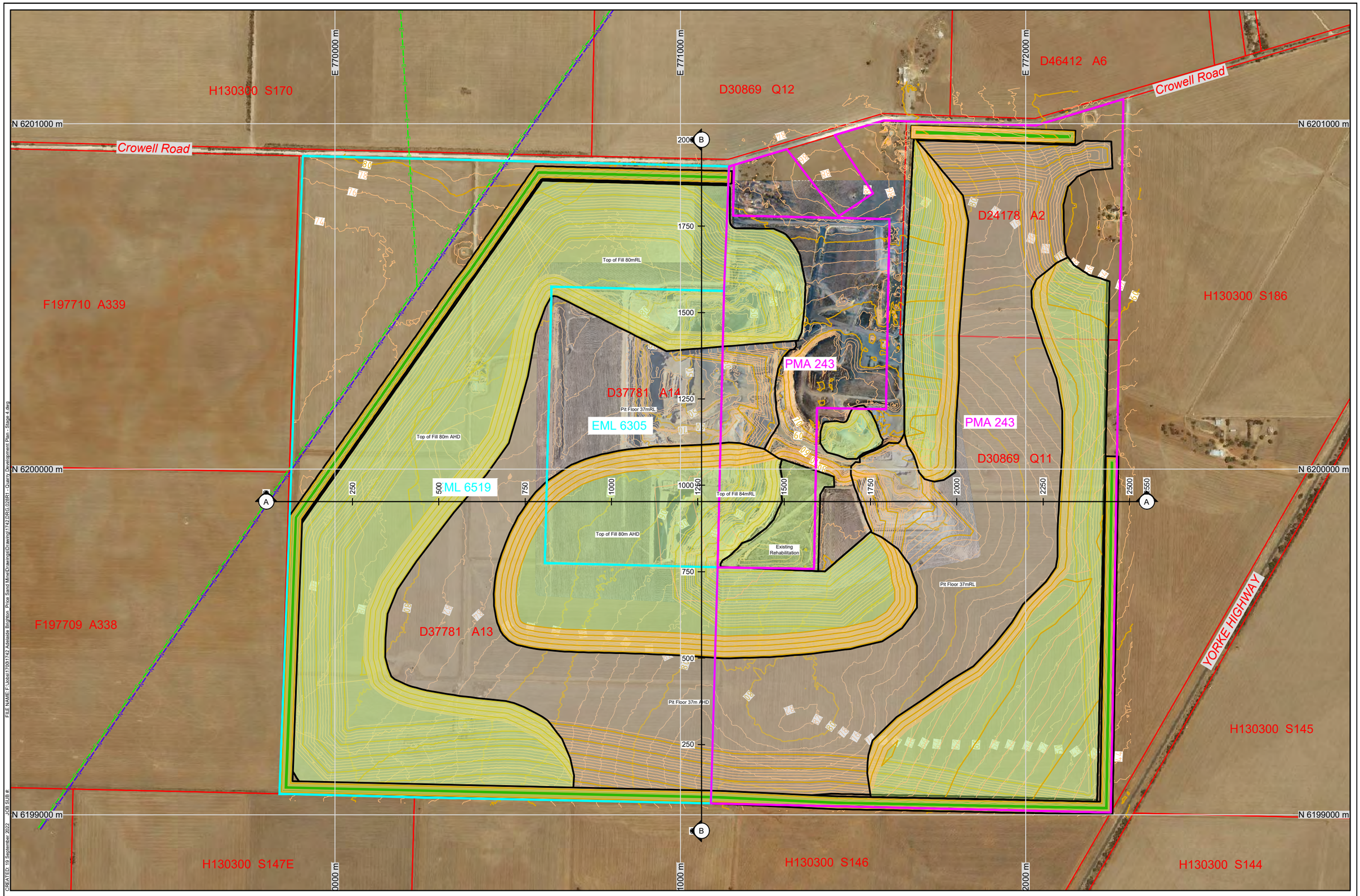
DRAWING NUMBER: 1742.DRG.021A

REVISION:

DATE: 19 September 2022 DRAWN: JHV

PRINTED: 19 September 2022 CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE MGA / AHD / 53



FILE NAME:P:\Jobs\17001742 Adelaide Brighton Price Sand Mine\Drawings\Drawings\1742.DRG.028R1 - Quarry Development Plan - Stage 4.dwg
JOB SUB #:
CREATED: 19 September 2022

REV	DESCRIPTION	DATE	BY
1	Update Quarry Designs, Aerial Imagery and Topography	28-07-21	MR

Data Sources:
Photography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-04-06
Cadastre:
Ecosystem:
Other:

Legend:
- Cadastral Boundary
- Private Mines (PM)
- Extractive Minerals Lease (EML)
- ElectraNet Underground Fibre
- Overhead Power lines
- Mineral Claim (MC)
- Stage 2 Extraction Area
- Stage 2 Visual Screen
- Stage 2 Progressive Rehabilitation

PROJECT: Price Sand Quarry

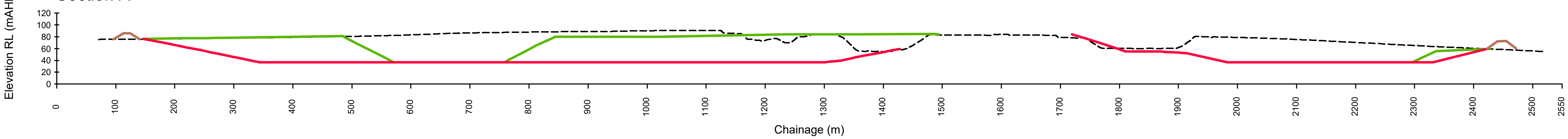
CLIENT: Adelaide Brighton Ltd

TITLE: Quarry Development Plan - Stage 4

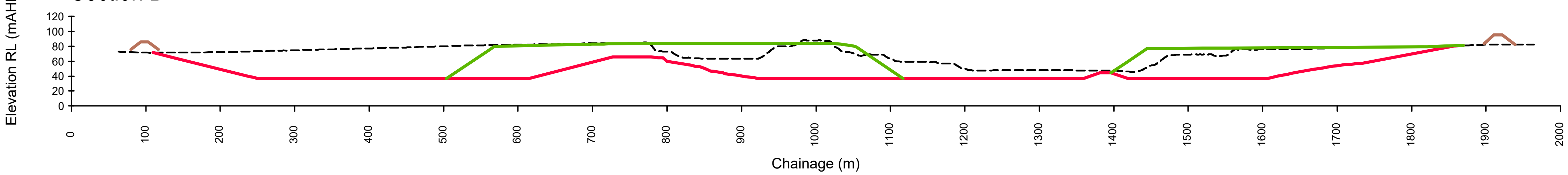
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:10,000 When Printed On A3 (0 – 200m)
DRAWING NUMBER: 1742.DRG.028
REVISION: 1
DATE: 19 September 2022
DRAWN: MR
PRINTED: 19 September 2022
CHECKED: MJ
DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 53

Section A



Section B



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REV	DESCRIPTION	DATE	BY

Data Sources:
Photography:
Topography: Groundwork Plus Pty Ltd UAV Photogrammetry Survey, Captured 2021-09-15
Cadastre:
Ecosystem:
Other:

Legend:
- - - - - Existing Ground Surface
Pit Design Surface
Progressive Rehabilitation
Visual Screen

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Cross Sections - Stage 4

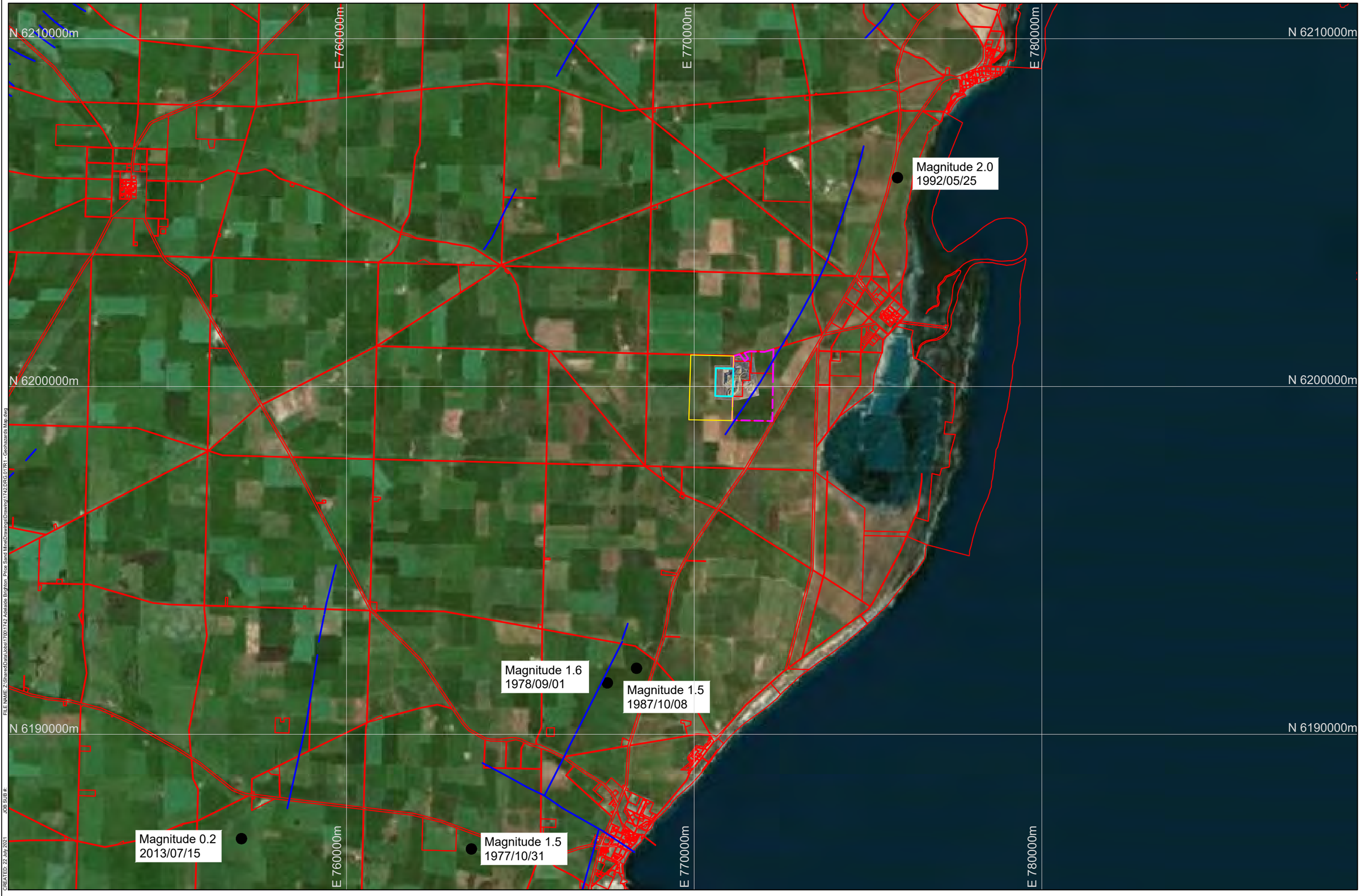
GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:7,000 When Printed On A3 | 0 140m

DRAWING NUMBER: 1742.DRG.028A | REVISION:

DATE: 19 September 2022 | DRAWN: JHV
PRINTED: 19 September 2022 | CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53



FILE NAME: Z:\Shared\Data\Jobs\17001\1742 Adelaide Brighton Price Sand Mine\Drawings\Drawing\1742.DRG.017R1 - Geohazards Map.dwg
JOB SUB #
CREATED: 22 July 2021

REV	DESCRIPTION	DATE	BY
1	Drawing Name Change and UAV updated	22/07/2021	MM

Data Sources:
Photography: UAV 2021-04-08 and Google Earth Map 2021-07-21
Topography: UAV 2021-04-08
Cadastre: Data.sa.gov
Ecosystem:
Other: Data.sa.gov

Legend:
- Cadastral Boundary
- Private Mines (PM)
- Extractive Minerals Leases (EML)
- Site
- Seismic Event
- Linear Structure (Fault)

PROJECT: Price Sand Quarry

CLIENT: Adelaide Brighton Ltd

TITLE: Geotechnical Hazards

GROUNDWORK plus
PH: +61 7 3871 0411
WWW.GROUNDWORK.COM.AU

SCALE: 1:100,000 When Printed On A3 — 0 — 2km
DRAWING NUMBER: 1742.DRG.017
REVISION: 1
DATE: 22 July 2021
DRAWN: DP
PRINTED: 22 July 2021
CHECKED:
DATUM: HORIZONTAL / VERTICAL / ZONE
MGA / AHD / 53

attachments

Attachment 1

Environment Protection Licence (No.2245)

Licence No. 2245

ISSUED:
01 Dec 2021

EXPIRY:
30 Nov 2026

ACN:
007 765 371

DIRECT-SCREENS HOLDINGS PTY. LTD.

Environmental Authorisation
under Part 6 of the
Environment Protection Act 1993

South Australian Environment Protection Authority
GPO Box 2607
Adelaide SA 5001
Tel: 08 8204 2004

Environment Protection Authority

LICENCE NUMBER 2245

LICENSEE DETAILS

Licence Holder: DIRECT-SCREENS HOLDINGS PTY. LTD.

ACN: 007 765 371

Registered Address: 16 Phiilips Street, THEBARTON SA 5031

LICENSED ACTIVITIES

The Licensee is authorised to undertake, at the location(s) shown above, the following prescribed activities of environmental significance under Schedule 1 Part A of the Act, subject to the conditions in this Licence.

3(2)(e)	Any other waste reprocessing facility
7(7)	Extractive industries

TERMS OF LICENCE

Commencement Date: 01 Dec 2021

Expiry Date: 30 Nov 2026

PREMISES ADDRESS

Crowells Road, PRICE SA 5570

Table of Contents

Licence Explanatory Notes – Do Not Form Part of the Licence

Compliance with this licence

The EPA seeks to ensure that all reasonable and practicable measures are taken to protect, restore and enhance the quality of the environment according to the principles of ecologically sustainable development. To achieve this objective, the EPA uses a number of regulatory decision making principles and actions outlined in the 'Compliance and enforcement regulatory options and tools' document available on the EPA website.

Notification – serious or material environmental harm caused or threatened

If serious or material environmental harm from pollution is caused or threatened in the course of an activity, the licence holder must, as soon as reasonably practicable after becoming aware of the harm or threatened harm, notify the EPA (preferably on EPA emergency phone number 1800 100 833) of the harm or threatened harm, its nature, the circumstances in which it occurred and the action taken to deal with it in accordance with section 83 of the *Environment Protection Act 1993* (the Act). In the event that the primary emergency phone number is out of order, the licence holder should phone (08) 8204 2004.

Variations, transfers and surrender of a licence

The EPA may impose or vary the conditions of a licence by notice in writing to the licence holder in accordance with sections 45 and 46 of the Act. Public notice may be required where the variation of licence conditions results in a relaxation of the requirements imposed for the protection or restoration of the environment and results in an adverse effect on any adjoining land or its amenity.

If a licence holder wishes to vary the conditions of a licence, transfer a licence to another entity, or surrender a licence, the licence holder must submit an application to the EPA in accordance with the applicable provisions of the Act (sections 45, 49 and 56, respectively). A licence remains in effect and in its original form until such time as any proposed variation, application for surrender, or transfer has been made and approved in writing by the EPA.

Suspension or cancellation of a licence

The EPA may suspend or cancel a licence by notice in writing to the licence holder in accordance with section 55 of the Act if satisfied the licence holder has either obtained the licence improperly, contravened a requirement under the Act or if the holder is a body corporate, a director of the body corporate has been guilty of misconduct of a prescribed kind (whether in this State or elsewhere).

Responsibilities under Environment Protection legislation

In addition to the conditions of any licence, a licence holder must comply with their obligations under all State and Federal legislation (as amended from time to time) including: the *Environment Protection Act 1993;* the *Environment Protection Regulations 2009;* all Environment Protection Policies made under the *Environment Protection Act 1993;* and any National Environment Protection Measures not operating as an Environment Protection Policy under the *Environment Protection Act 1993*

Public Register Information

The EPA maintains and makes available a Public Register of details related to its determinations and other information it considers appropriate (i.e. excluding trade processes or financial information) in accordance with section 109 of the Act. These details include, but are not limited to:

- licensing and beverage container applications and approvals
- enforcement actions
- site contamination
- serious or material environmental harm caused or threatened in the course of an activity
- environment improvement programmes and environment performance agreements
- environment assessment reports; results of testing, monitoring or evaluation required by a licence
- EPA advice or direction regarding development approvals referred to the EPA by a planning authority

Definitions

Unless the contrary intention appears, terms used in this licence that are defined in the Act (including any regulations or environment protection policies made pursuant to the Act) have the respective meanings assigned to those terms by the Act.

THE ACT: The *Environment Protection Act 1993*

PREMISES: The whole of the land comprised in Titles Register - Certificate of Title, Crown Lease and Crown Record.

CT5277/994	CT5382/420
CT5433/993	/

AUTHORISATION FEE PAYMENT DATE: means the anniversary of the grant or renewal of this authorisation.

CONSTRUCTION AND DEMOLITION WASTE (INERT): means the solid inert component of the waste stream arising from the construction, demolition or refurbishment of buildings or infrastructure but does not contain Municipal Solid Waste, Commercial and Industrial Waste (General), Listed Waste, Hazardous Waste or Radioactive Waste. NOTES. C&D waste (Inert) should be such that the entire composition of the C&D materials is Inert Waste with no contamination by foreign material. As such it is acknowledged that, with the aim of no contamination, there may be some negligible components of foreign material contained in the waste (as a guide, 0 to 5% maximum by volume per load). C&D waste (Inert) includes bricks, concrete, tiles and ceramics, steel and inert soils. Foreign material includes green waste, plastics, electrical wiring, timber, paper, insulation, tins, packaging and other waste associated with construction or demolition of a building or other infrastructure. Foreign material must not be Municipal Solid Waste, Liquid, Listed, Hazardous or Radioactive Waste.

DRAG-OUT: means the depositing of material from vehicle movement.

ENVIRONMENTAL HARM: means the same as is defined in section 5 of the Environment Protection Act 1993.

POLLUTION CONTROL EQUIPMENT: means 'control equipment' as defined in the Environment Protection (Air Quality) Policy: any device that controls, limits, measures, records or indicates air pollution.

WASTE: means -

1. As defined under the Environment Protection Act 1993,

1(a) any discarded, dumped, rejected, abandoned, unwanted or surplus matter, whether or not intended for sale or for purification or resource recovery by a separate operation from that which produced the matter; or

1(b) any matter declared by regulation to be waste for the purposes of this Act (following consultation by the Minister on the regulation with prescribed bodies in accordance with the regulations); or

1(c) any matter declared by an environment protection policy to be waste for the purposes of this Act,

whether or not of value.

2. However, waste does not include—

2(a) an approved recovered resource whilst it is being dealt with in accordance with the declaration of that resource—see section 4A; or

2(b) anything declared by regulation or an environment protection policy not to be waste for

the purposes of this Act,

even though the resource or the thing so declared might otherwise, but for the declaration, fall within the definition of waste in subsection (1).

WASTEWATER: as defined in the Environment Protection (Water Quality) Policy 2015.

WASTEWATER MANAGEMENT SYSTEM: as defined in the Environment Protection (Water Quality) Policy 2015.

Acronyms

EPA: means Environment Protection Authority

Conditions of Licence

The Licensee is authorised to conduct the prescribed activities as described in this Licence at the Premises nominated, subject to the following conditions:

1 CONTROL OF EMISSIONS

1.1 DUST PREVENTION (S - 7)

The Licensee must take all reasonable and practicable measures to prevent dust from leaving the Premises.

2 WASTE MANAGEMENT

2.1 NO DISPOSAL OF WASTE (S - 33)

The Licensee must not dispose of any waste at the Premises.

2.2 WASTE PERMITTED TO BE RECEIVED (S - 222)

The Licensee must only receive Construction and Demolition Waste (Inert) at the Premises.

3 OPERATIONAL MANAGEMENT

3.1 BUNDING (S - 5)

The licensee must ensure that all chemicals or chemical products are stored, loaded or unloaded in an appropriately bunded area.

NOTES

The EPA will assess the appropriateness of any bund against the EPA's 'Bunding and Spill Management Guidelines'.

3.2 COMPLAINTS REGISTER (S - 1)

The Licensee must:

3.2.1 prepare and maintain a register of all complaints concerning environmental issues.

3.2.2 ensure the register includes:

a the date and time that the complaint was made;

b details of the complaint including the likely cause of events giving rise to the complaint;

c the contact details of the complainant (if permitted by the complainant); and

d details of any action taken in response to the complaint by the Licensee.

3.3 DRAGOUT MINIMISATION (S - 31)

The Licensee must maintain all vehicles used at the Premises so as to minimise dragout outside the Premises.

3.4 POLLUTION CONTROL EQUIPMENT REGISTER (S - 2)

The Licensee must:

3.4.1 maintain all Pollution Control Equipment to ensure that pollution is minimised; and

3.4.2 keep a written record of all inspections of Pollution Control Equipment, which includes:

a the name of the recording officer;

b the date of each inspection of the equipment;

c details of the equipment that was inspected;

d an assessment of whether the equipment was working effectively; and

e the action taken (if required) to rectify any faults or failures.

3.5 WASTEWATER MANAGEMENT SYSTEM (S - 54)

The Licensee must ensure that:

3.5.1 the Premises incorporates a wastewater management system; and

3.5.2 the system is effectively operating in respect of any wastewater generated at the Premises while the Premises are being used for the licensed activity.

4 ADMINISTRATION

4.1 ANNUAL RETURN AND PAYMENT OF ANNUAL FEES (A - 4)

For the purposes of section 48(2)(a) of the Act, the date in each year for the lodgement of the Annual Return is no later than 90 days before the anniversary of the grant or renewal of the Licence; and

4.1.1 For the purposes of section 48(2)(b) of the Act, the date in each year for the payment of Annual Authorisation Fee is the anniversary of the grant of the Licence.

4.2 APPROVAL OF OPERATING PROCESSES (A - 6)

The Licensee must not undertake changes to operating processes conducted pursuant to the Licence at the Premises without written approval from the EPA, where such changes:

4.2.1 have the potential to increase emissions or alter the nature of pollutants or waste currently generated by, or from the licensed activity; or

4.2.2 have the potential to increase the risk of environmental harm; or

4.2.3 would relocate the point of discharge of pollution or waste at the Premises.

4.3 APPROVAL OF WORKS (A - 5)

The Licensee must not construct or alter a building or structure, or install or alter any plant or equipment, for use of an activity undertaken pursuant to the Licence at the Premises without written approval from the EPA, where such changes:

4.3.1 have the potential to increase the emissions or alter the nature of pollutants or waste currently generated by, or from the licensed activity; or

4.3.2 have the potential to increase the risk of environmental harm; or

4.3.3 would relocate the point of discharge of pollution or waste at the Premises.

4.4 CHANGE OF LICENSEE DETAILS (A - 3)

If the Licensee's name or postal address (or both) changes, the Licensee must inform the EPA within 28 days of the change occurring.

4.5 LICENCE RENEWAL (A - 2)

For the purposes of section 43(3) of the Act, an application for Renewal of the Licence must be made no later than 90 days before the expiry date of the Licence.

4.6 OBLIGATIONS TO EMPLOYEES, AGENTS AND CONTRACTORS (A - 1)

The Licensee must ensure that every employee, agent or contractor responsible for undertaking any activity regulated by the Licence, is informed as to the conditions of the Licence.

Attachments

There are no documents attached to this licence.

Attachment 2

Wind Rose Data Price Station (Site No. 022015)

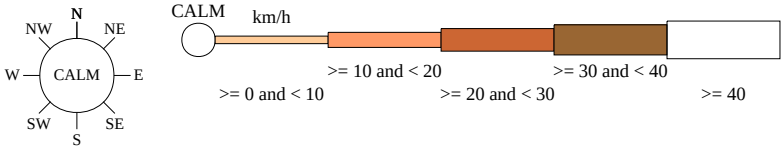
Rose of Wind direction versus Wind speed in km/h (05 Jan 1965 to 11 Aug 2017)

Custom times selected, refer to attached note for details

PRICE

Site No: 022015 • Opened Jan 1944 • Still Open • Latitude: -34.2971° • Longitude: 138.0014° • Elevation 2m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



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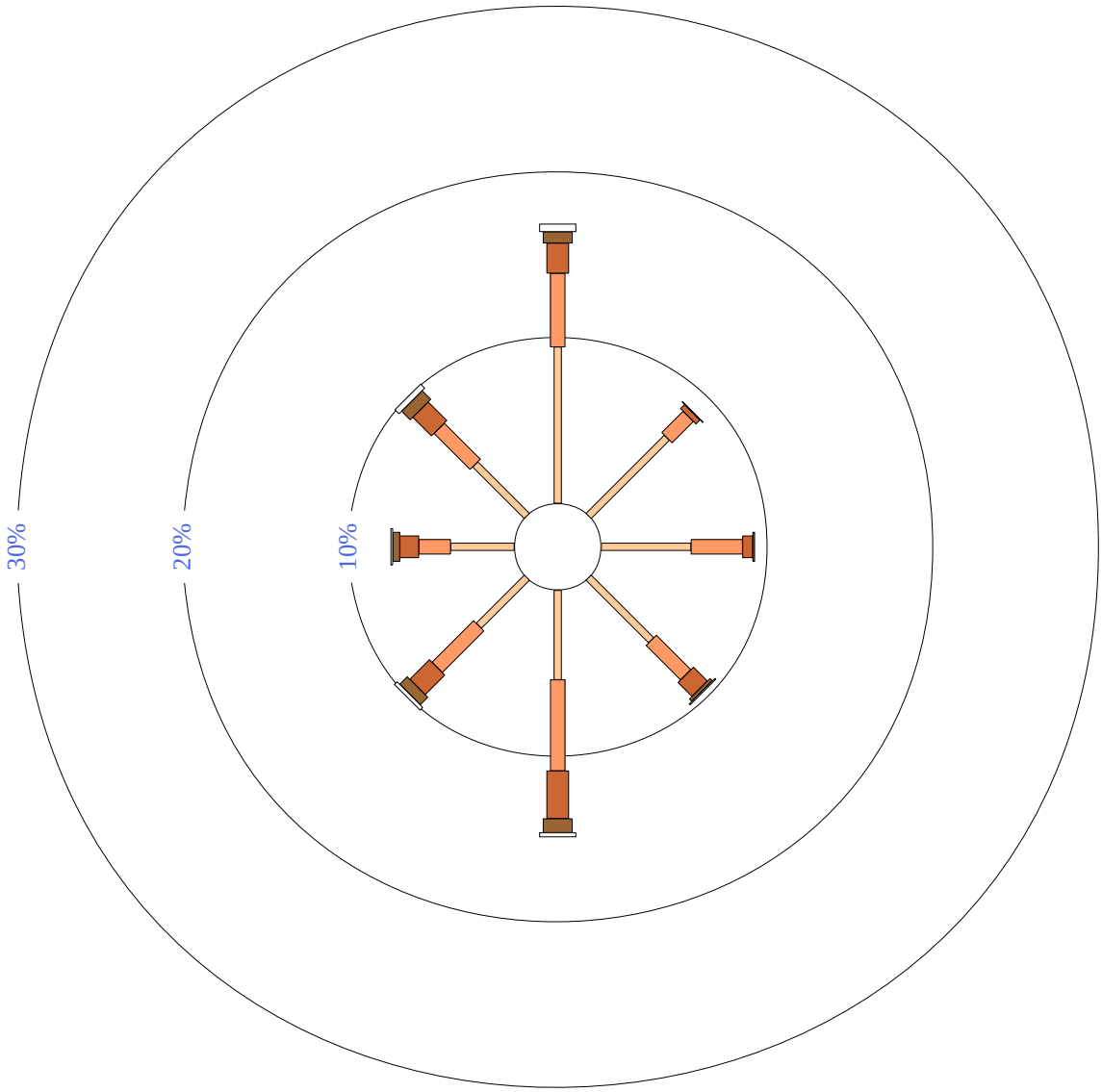
Calm 13%



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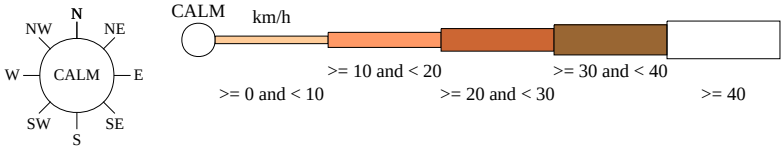

3 pm
6454 Total Observations

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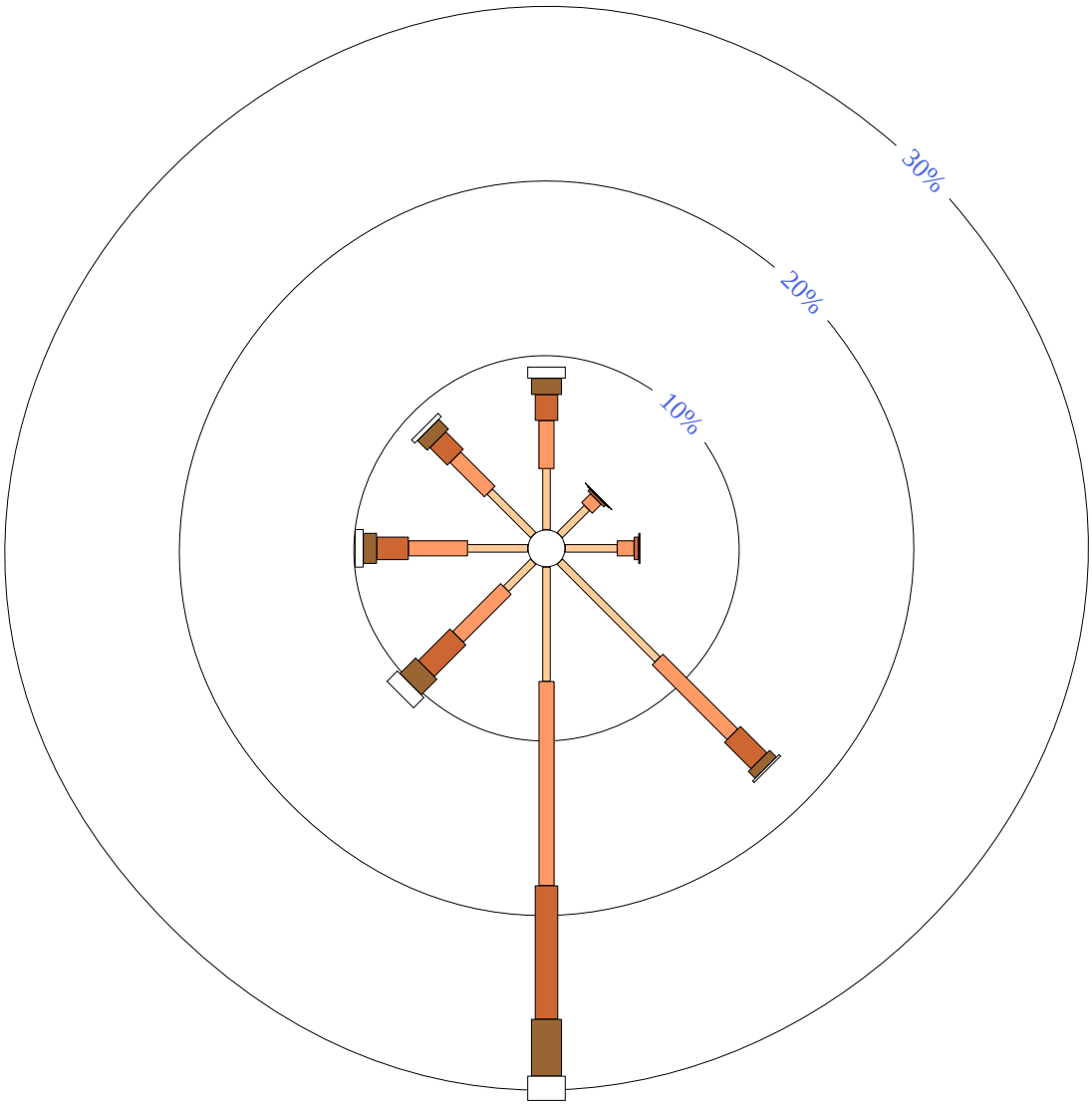


Attachment 3

Groundwater Desktop Study

GROUNDWATER SCIENCE

James Rowe
SA Manager
Groundwork Plus

07 February 2018

Dear James

RE: Price Quarry – Groundwater Desktop Study.

Please find the following report that details baseline groundwater conditions near Adelaide Brighton Limited (ABL) Price Quarry, Dowlingville, Yorke Peninsula ("the Site"). The work was commissioned to support the quarry plan and Program for Environmental Protection and Rehabilitation (PEPR). Key findings from the work confirm that:

- Groundwater elevation in the area generally decrease from inland Yorke Peninsula (West of the Site) to the Eastern coast of the Yorke Peninsula (East of the Site);
- Groundwater at the Site is predicted to be at approximately 30mAHD. This correlates to the Cambrian Basement which is found beneath the target resource (sand);
- Quarrying activities are not expected to intersect groundwater;
- Groundwater is typically highly saline (>10,000mg/L), and no groundwater dependant ecosystems (GDE's) are found at or near the Site;
- The Site is not within a prescribed wells area (PWA) and no licenses are required to extract water;
- Proposed quarrying activities are expected to pose minimal risk to regional groundwater.

1 Introduction

Groundwater Science (GWS) have been engaged by Groundwork Plus Pty Ltd (Groundwork Plus) to undertake a groundwater desktop study for the Price Sand Quarry located on the Yorke Peninsula. It is understood that ABL are seeking to gain tenure of a new Mineral Claim (MC) on a parcel of land (CT 5277/933) immediately West of the current Extractive Mineral Lease (EML) 6035 and Private Mine (PM) 243 (Figure 1). The Site is located at Crowell Road, Dowlingville, Upper Yorke Peninsula.

To support this activity GWS have reviewed available hydrogeological information to:

- Outline baseline groundwater conditions in proximity to the Site;
- Assess levels to which quarrying can be conducted to avoid groundwater interaction. Avoiding groundwater is preferred to prevent pit inflows and intensive water management.

The following report provides a summary of results. Data has principally been sourced from the Department for Environment, Water and Natural Resources (DEWNR) Groundwater Data application with downloads available at:

https://www.waterconnect.sa.gov.au/Systems/GD/Pages/Default.aspx.

Additional information has been sourced from the South Australian Resources Information Gateway (SARIG), the Bureau of Meteorology (BoM) Groundwater Dependent Ecosystems Atlas and other technical / online data sources.

T: 08 7078 3515 F: 08 8121 1839
Level 2, 70 Pirie Street, Adelaide, SA, 5000
www.groundwaterscience.com.au

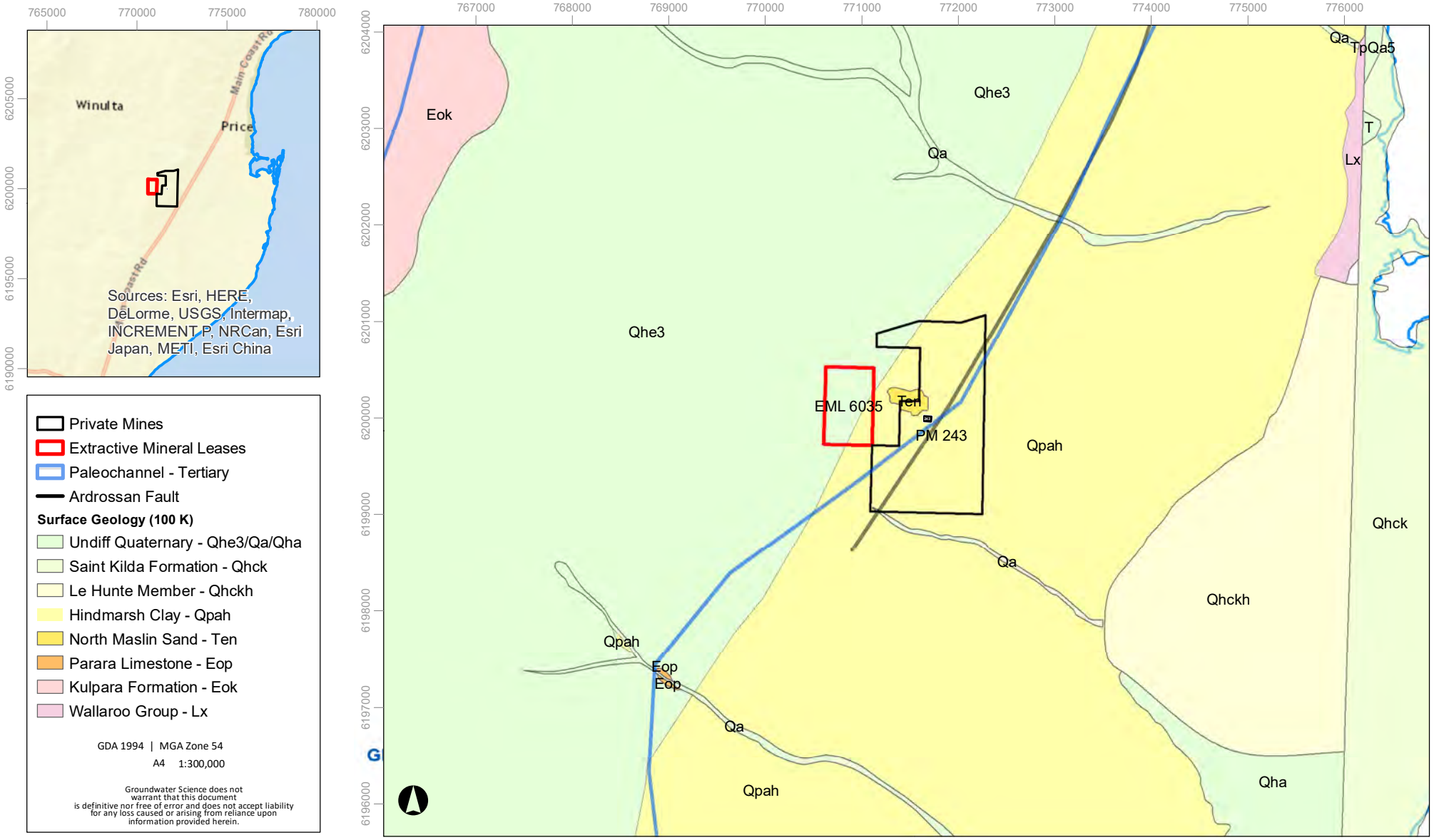


Figure 1: Location Map and Surface Geology - Price Quarry.

2 Geology

The surface geology of the Site and surrounding area can be seen in Figure 1 with a summary provided in Table 1. The Site is situated within a Neogene to Paleogene aged paleochannel adjacent to the Ardrossan Thrust Zone. This Zone (Fault) has upthrown basement and the overlying paleochannel sediments to the West of the coastal plain. Figure 2 displays a South-North cross section of the regional geology (Bluck 1983). It can be seen in Figure 2 that the underlying geology is dominated by various sand formations with Cambrian basement being found approximately 50m below ground level.

Generally however surface geology comprises:

- Holocene sand;
- Undifferentiated Holocene to Pleistocene alluvial and fluvial sediments;
- Gypsiferous lacustrine sediment, Eocene sand as well as Cambrian aged limestone .

Table 1: Summary Table – Sub-surface Geology.

Map Unit	Name / Formation	Epoch	Age (Approx. Million years))	Description	Aquifer Potential
Qhe3/Qp\ca	Unnamed unit	Holocene	0-0.01	Holocene sand spread	Permeable – unsaturated at site
Qhckh	Le Hunte Member (Saint Kilda Formation)	Holocene	0-0.01	Gypsiferous lacustrine sediment of coastal saline lakes	Aquitard
Qa	Unnamed unit	Holocene / Pleistocene	0.01-1.8	Undifferentiated Quaternary alluvial/fluvial sediments	Permeable – unsaturated at site
QP/ca\Qpah	Hindmarsh Clay	Pleistocene	0.01-2.6	Consolidated mottled clay and sandy clay with sand and gravel lenses, aeolian sand. Alluvial and colluvial red-brown sandy clay with sand and gravel beds	Aquitard
QP/ca\Qpah/Ten	North Maslin Sand	Eocene	34-56	Braided river system, fluviolacustrine in part. Comprised of quartz sand and gravel	Permeable – unsaturated at site
Eok	Kulpara Formation	Cambrian	485-541	Dolomite and limestone, stromotolitic and fenestral, micritic; ooid grainstone	Regional Fractured rock aquifer (where saturated)

Data sources: Australian Stratigraphic Units Database (Geoscience Australia) 2018; SARIG (2018).

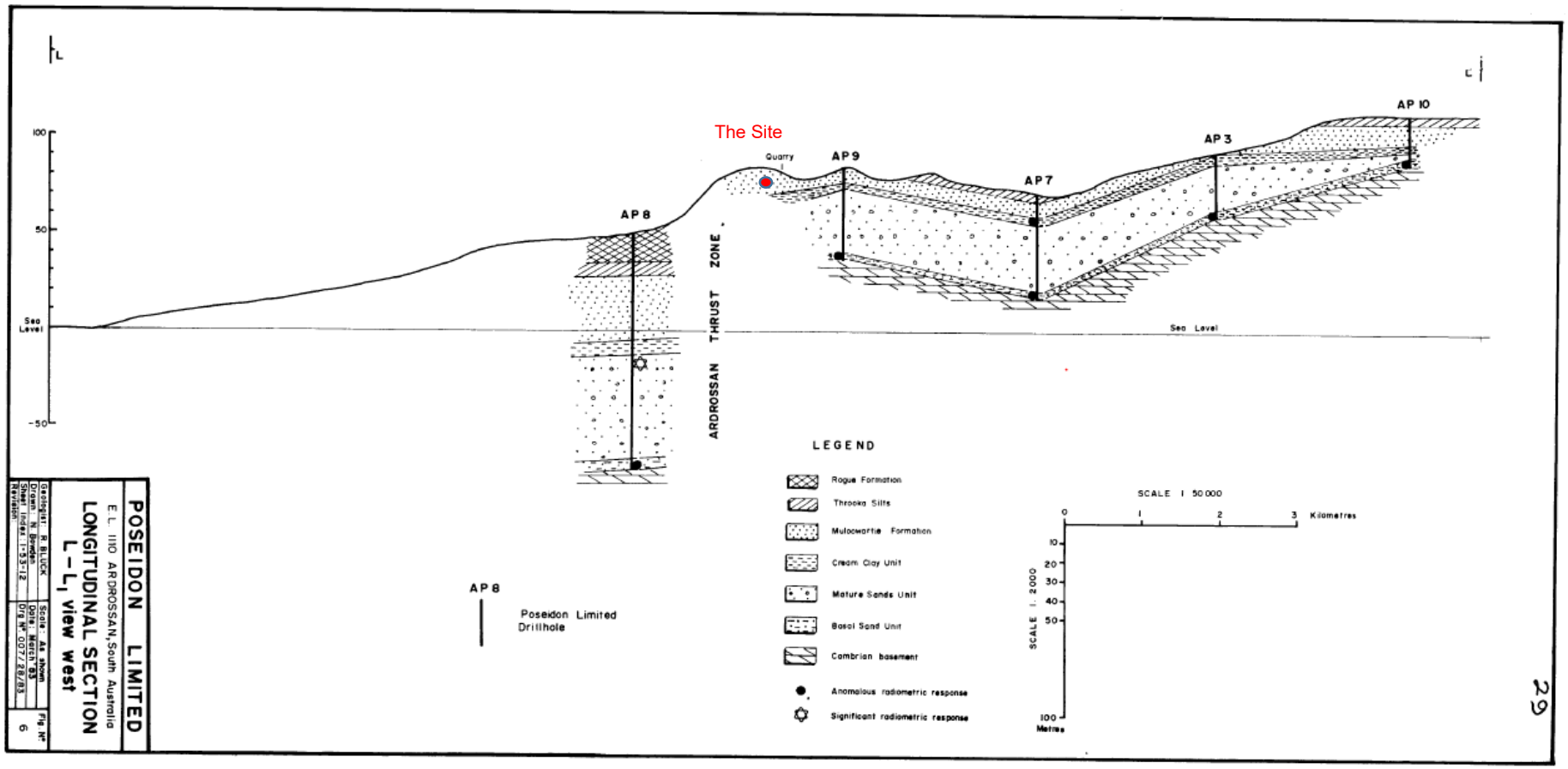


Figure 2: South-North Cross Section L-L' (Bluck, 1983). See Figure 4 for cross section location.

T: 08 7078 3515 F: 08 8121 1839
Level 2, 70 Pirie Street, Adelaide, SA, 5000
www.groundwaterscience.com.au

3 Hydrogeology and Well Data

To assess groundwater conditions of the nearby area, well data in proximity to the quarry was obtained from DEWNR's groundwater database (WaterConnect, 2017). Data was manipulated in ArcGIS to produce the following figures:

- Figure 3. Nearby wells categorised by class, labelled by unit number;
- Figure 4. Groundwater Elevations referenced to m Australian Height Datum (mAHD);
- Figure 5. West to East hydrogeological cross section.
- Figure 6. Groundwater Salinity in milligrams per litre (mg/L) total dissolved solids.
- Figure 7. Well yield in litres per second (L/s);
- Figure 8. Groundwater hydrographs for nearby wells

The following provides a summary of results.

3.1 Well Classes

Figure 3 displays wells classed by purpose, and includes those drilled for water, exploration and petroleum investigations. The Figure also displays "water points" that indicate shallow seeps or pooled water derived from surface runoff, soil moisture or on occasions spring discharge.

There are three (3) documented water wells located approximately 4 to 5km North-East of the Site. Well 6429-480 is believed to be abandoned and was previously an irrigation well to a drill depth of 24.3m below ground level. Well 6429-139 is labelled as a domestic well with a maximum depth of 6.1m below ground level. Lastly, Well 6429-138 is marked as a stock/irrigation well with a maximum depth of 122.53m below ground level. The generally high salinities at these locations questions whether wells are currently operational as they are above thresholds for irrigation, stock and domestic use.

Another water well is located approximately 4km South of the Site, but no data is available. Approximately 12-20km West of the Site are several other water wells, including two (2) monitoring wells (6429-1458 and 6429-1459). Both wells are listed as monitoring Cape Jervis Formation (Permian in Age) and have a maximum depth of 10 m below ground. Most other wells in the area are exploration wells which contain little to no groundwater information. The water point located east of the Site is found within a salt pan and is not indicative of the groundwater at the Site.

On the Upper Yorke Peninsula it appears that there is fair variety of water well purposes including domestic, monitoring, irrigation and stock. Groundwater usage is believed to be relatively minimal compared to other parts of the state due to the relatively high salinity.

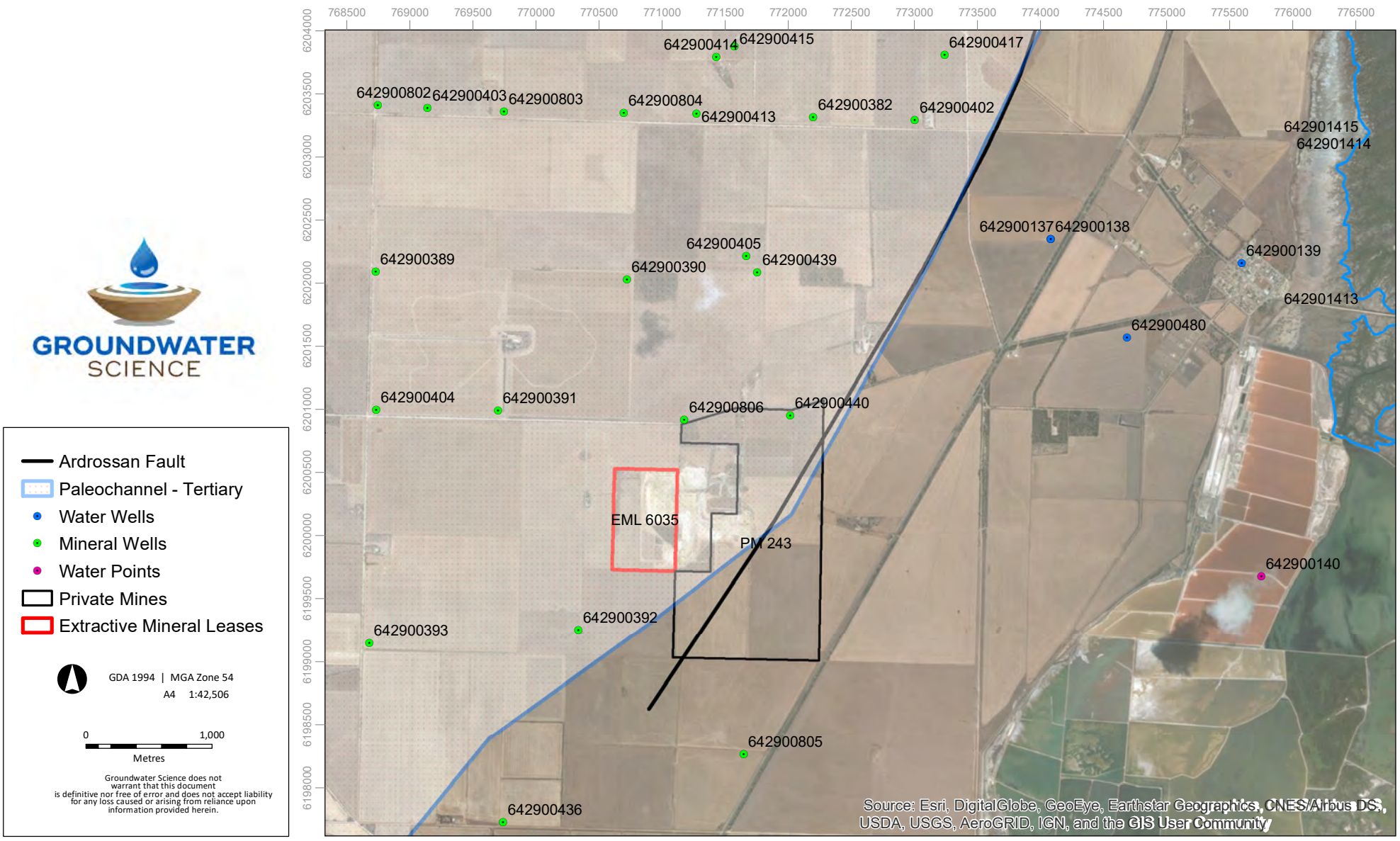


Figure 3. Price Quarry - Wells in the Study Area categorised by class. Labels denote unit number.

3.2 Groundwater Elevations (mAHD).

Figure 4 displays groundwater elevations (mAHD) at available water wells. These were obtained by geo-referencing groundwater levels using the Geoscience Australia Digital Elevation Model (Geoscience Australia, 2011). This model allows comparison of groundwater levels to a common reference point to determine hydraulic gradients and groundwater flow paths.

Based on Figure 4:

- Groundwater elevations on the coastal plain are approx. 0-10 mAHD
- The nearest groundwater elevation West of the Site is well 6429-1458 and is approx. 12 km away. This well reports an elevation of 140 mAHD.

The above two (2) data points are summarised in Table 2 and are the best available information near to Site. The wells have been used to develop a West-East hydrogeological cross section (Figure 5) that predicts groundwater elevations near the quarry Site. Results from the cross section (Figure 5) suggest that groundwater levels decrease from inland (West) to the coast (East), reporting at approximately 30 mAHD below the Site. Figure 5 shows adds further validation to this prediction as ground elevations decreases from the inland to the coast in this region and it is logical that groundwater levels would mimic this trend.

Table 2: Wells used in the cross section (Figure 5).

Unit number	Well Depth (m below ground)	Distance from Site (m)	Ground RL (mAHD)	Groundwater Elevation (mAHD)
6429-1458	10.72	12,000	144	138
6429-480	122.53	4500	55	10

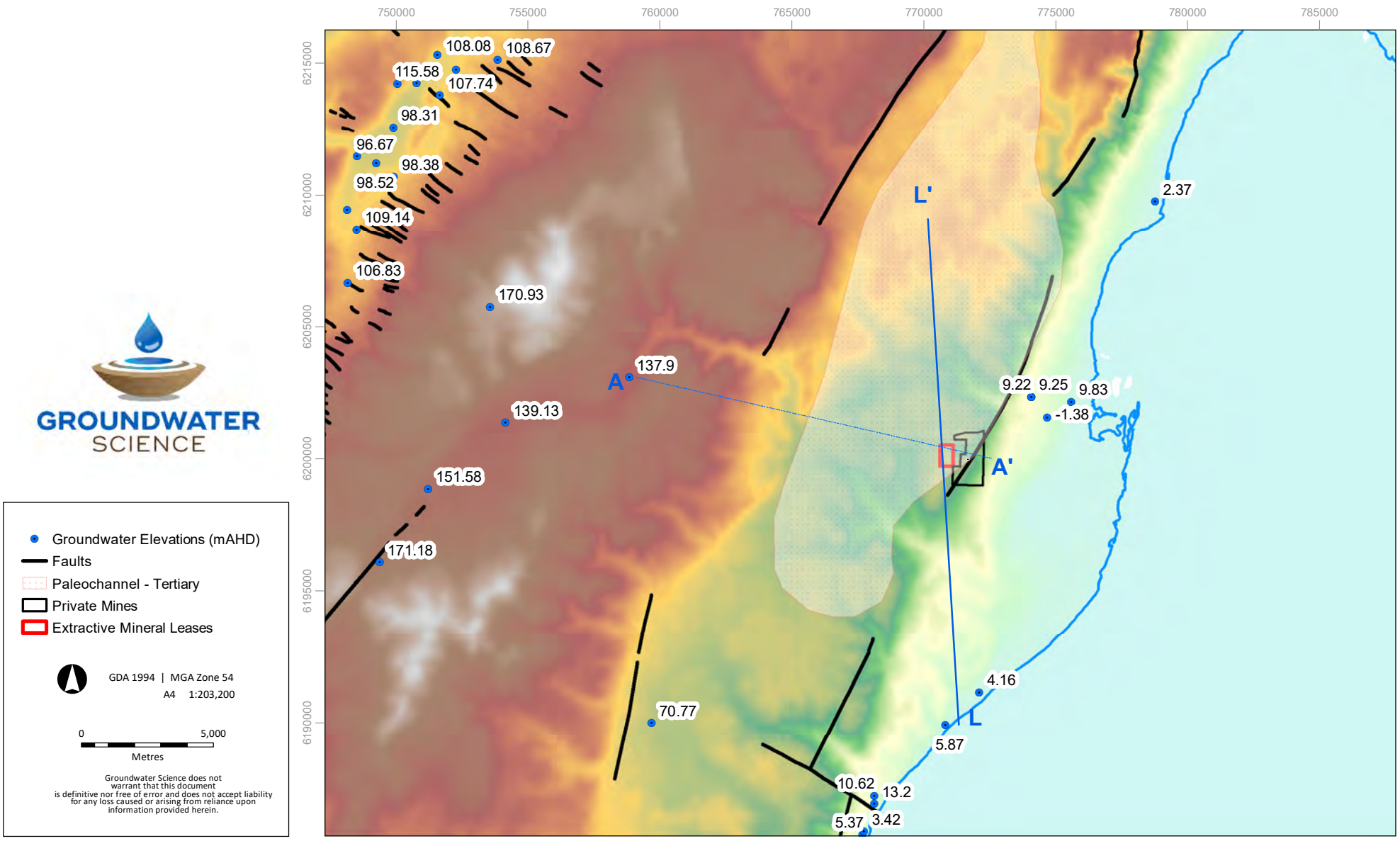


Figure 4. Groundwater Elevations referenced to metres Australian Height Datum. Ground RL's taken from the 1s digital elevation model (Geoscience Australia, 2011).

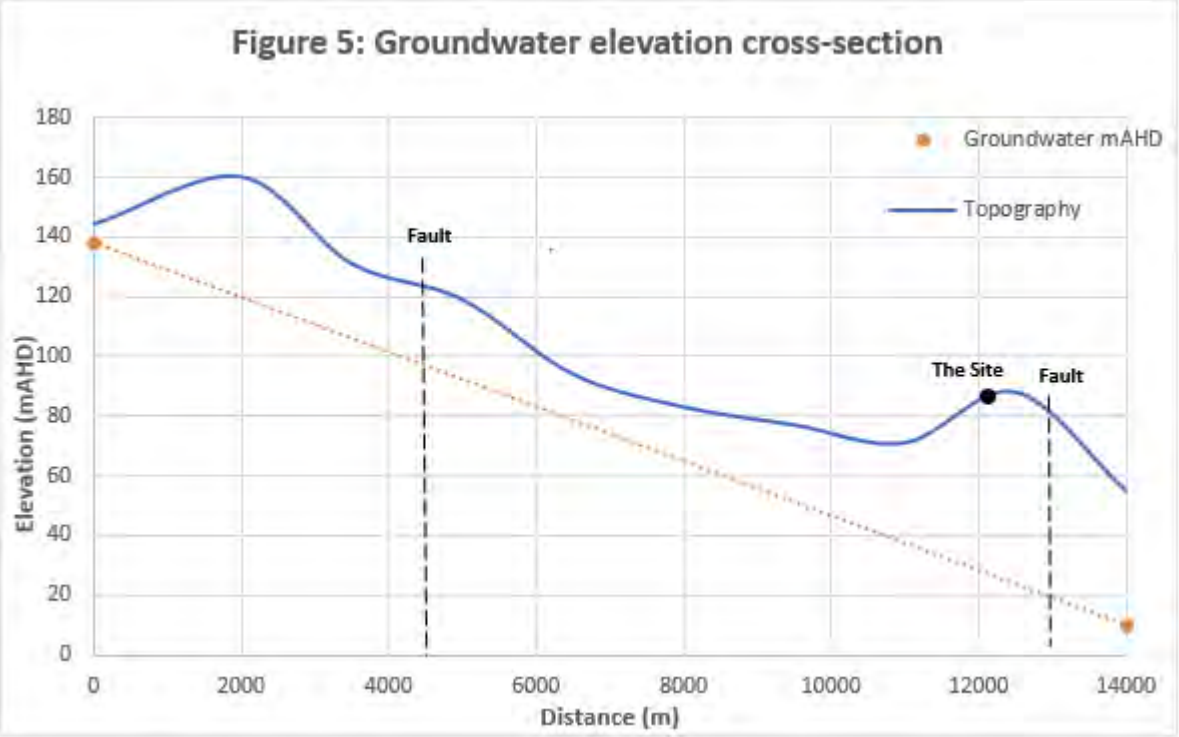


Figure 5: West-East hydrogeological cross-section A-A'. see Figure 4 for cross section location.

3.3 Groundwater Salinity

Figure 6 Displays groundwater salinity in milligrams per litre total dissolved solids (mg/L TDS). Groundwater is generally highly saline and above 10,000 mg/L. These values are generally only suitable for industrial purposes. Furthermore it also explains the limited number of wells in the region that would typically prefer fresh supplies for domestic, stock or irrigation needs.

3.4 Well Yields

Figure 7 displays well yield reported in Litres per second (L/s). Yield data is only available for two (2) water wells in the general vicinity of the Site; Well 6429-480 (1 L/sec) and 6429-137 (0.63 L/sec). The low yields are either associated with the well completion diameter being relatively small or the general low permeability of the targeted sediments. However, there are too few wells to draw accurate conclusions about near site yield characteristics.

3.5 Groundwater Monitoring – DEWNR Observation Wells.

To gauge seasonal groundwater variation water level data was downloaded from DEWNR's WaterConnect Database. Two (2) monitoring wells (6429-1458 and 6429-1459), are located approximately 12km and 16km West of the Site. Both wells target the Cape Jervis Formation and contain over a decades worth of groundwater level data. Hydrographs for the two wells can be seen in Figure 8.

Both wells show a general increase in groundwater elevations from 2009 to 2017. In September 2013 there was sharp increase in groundwater levels, followed by a relatively rapid decrease in the beginning of 2014. Since then there has been a relatively quick increase in groundwater levels for Well 6429-1458 whilst the increase is even more pronounced in well 6429-1459. The groundwater level fluctuations can mostly be explained by rainfall, with rising groundwater levels following higher, particularly in 2016.

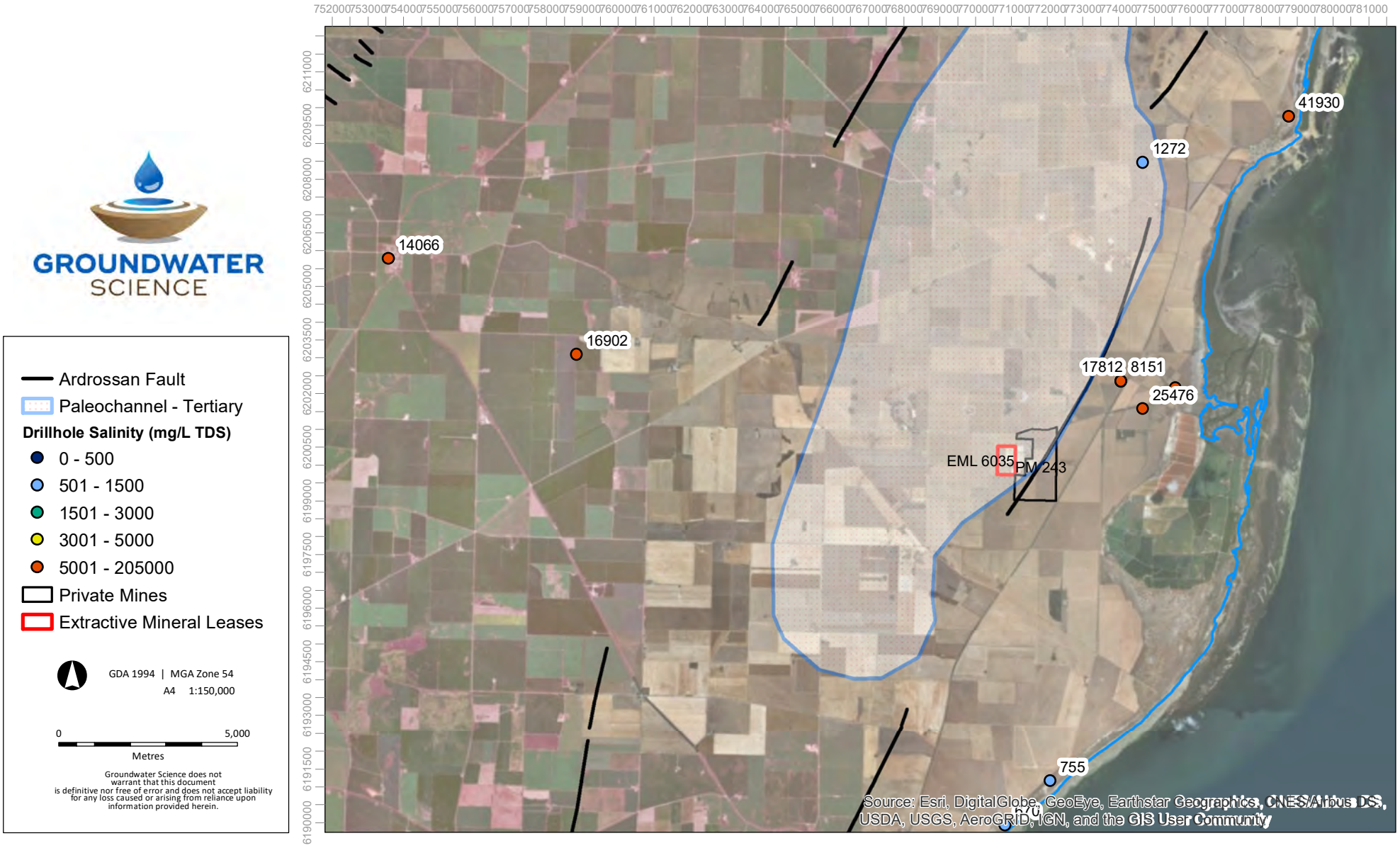


Figure 6. Price Quarry - well salinities at available drillholes (mg/L TDS).

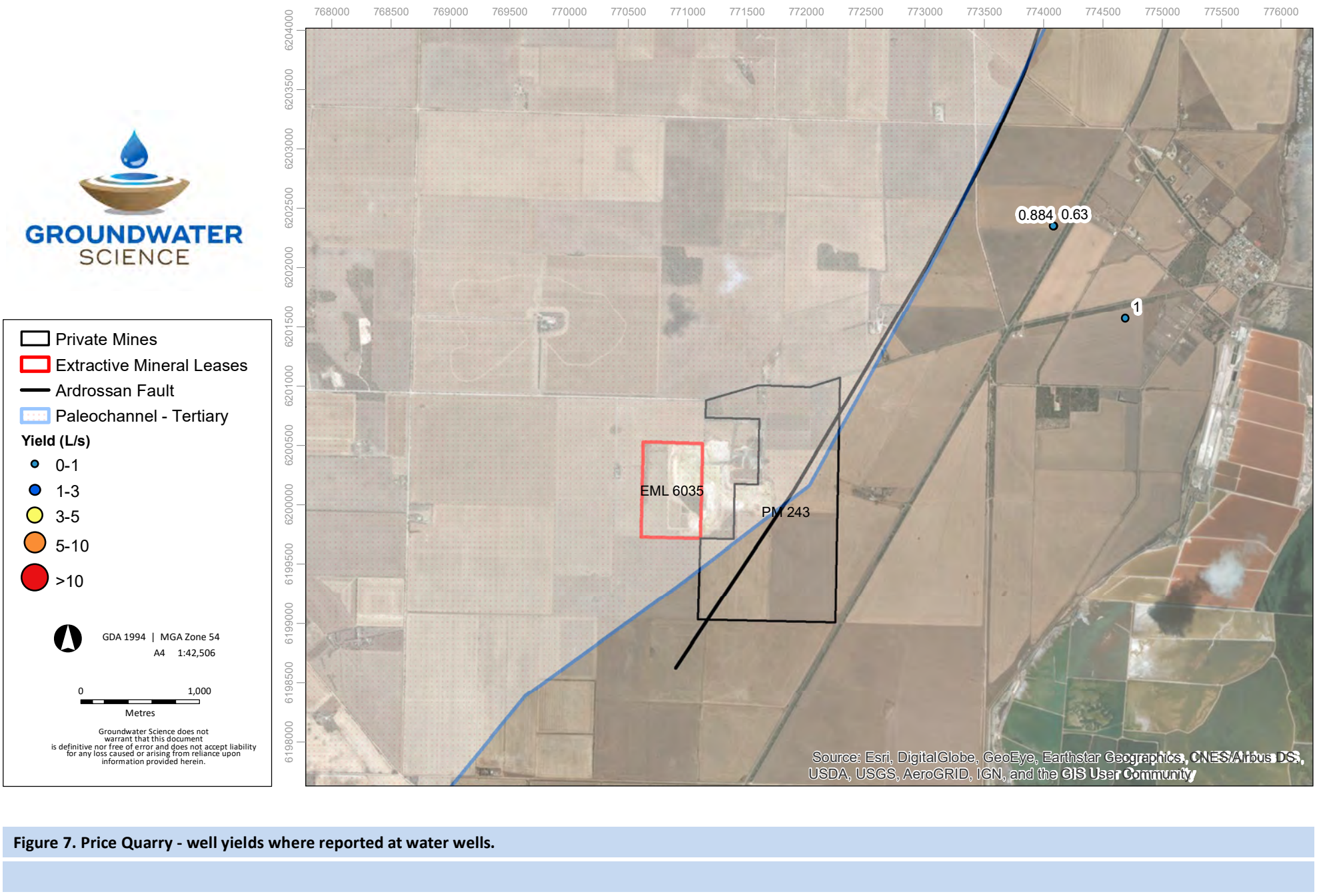


Figure 7. Price Quarry - well yields where reported at water wells.

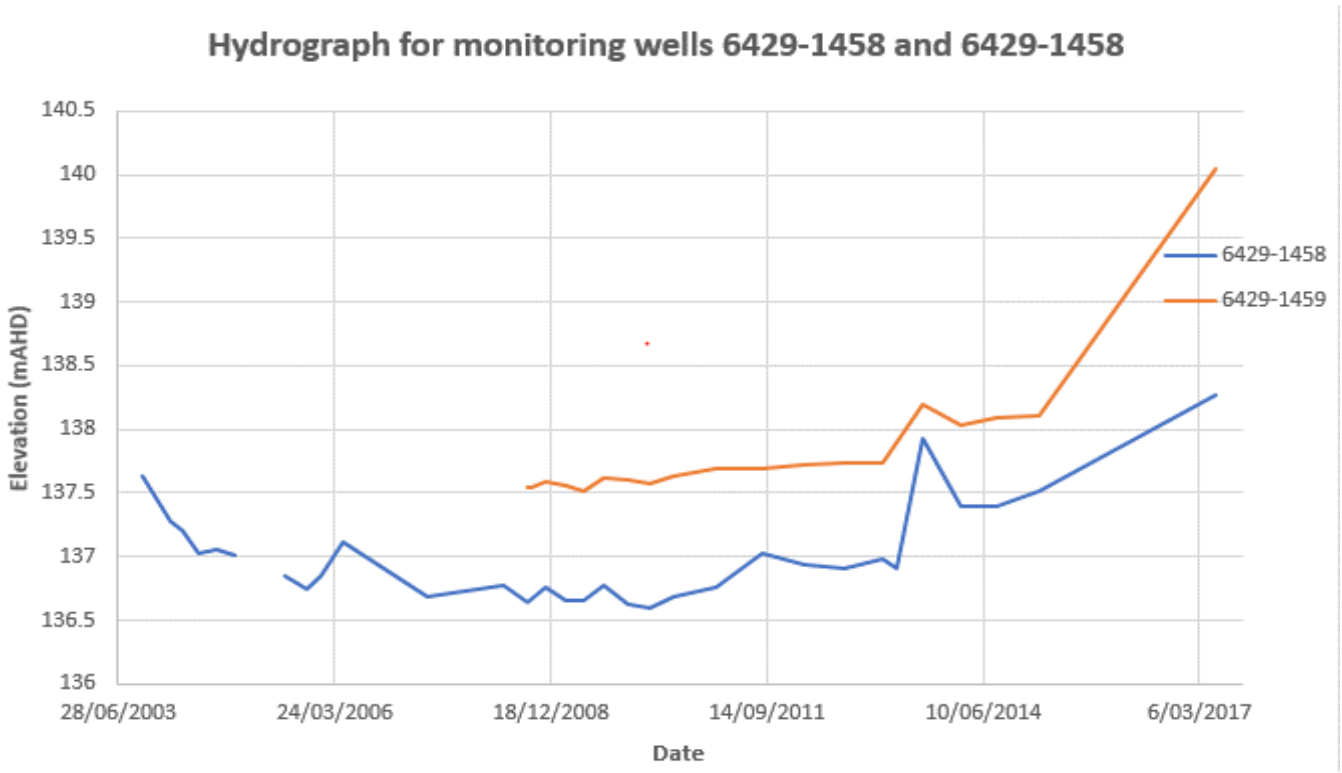


Figure 8: Groundwater level hydrograph for Well Units 6429-1459 and 6429-1458

4 Groundwater Licensing

The Site resides within the Northern & Yorke Non-Prescribed Area and therefore no licenses are required to extract groundwater, however a well construction permit would be required for the drilling of any water wells.

5 Groundwater Dependent Ecosystems

To determine the presence of any groundwater dependent ecosystems (GDE) near to the Site, the BoM Groundwater Dependant Ecosystem Atlas was utilized. This webpage can be viewed electronically at:

http://www.bom.gov.au/water/groundwater/gde/map.shtml

Based on the Atlas no GDE's were found within the Site or the surrounding area. Given this, and the fact that quarrying operations are to remain above regional groundwater there is a very minimal risk to GDE's.

6 Recommended Quarry Depths to Avoid Groundwater Interaction.

Groundwater elevation data and the hydrogeological cross section (Figure 5) suggests:

- Groundwater elevation generally decreases from the inland of Yorke Peninsula (West of the Site) to the coast (East of the Site).
- Groundwater on the Site resides at approximately 30 mAHD which is likely in Cambrian Bedrock.

Based on topography of 75-95 m on the Site, there is greater than 45 m of sediments/rock before intersection of groundwater. The tertiary sediments (target for quarrying) are likely to be dry. As sand extends to approximately 50 mAHD (Figure 2), there is a low likelihood that groundwater will be intercepted during operations.

7 Discussion and Conclusions

The review has outlined baseline groundwater conditions in proximity to the Site using publicly available data sources (e.g. DEWNR; WaterConnect). Findings from the review confirm that groundwater elevations generally decrease from inland Yorke Peninsula (West of the Site) to the Eastern coast of the Yorke Peninsula (East of the Site). Groundwater in the region is saline (>10,000 mg/L) and is only suitable for certain industrial activities. Monitoring wells proximal to the Site suggest that groundwater levels in the area have been generally rising since 2009.The Site is not within a PWA and therefore no licensing is required to extract groundwater. There are no GDE's found on or nearby the Site.

Groundwater on the Site is predicted to be at approximately 30m AHD. Sand at the Site (targeted resource) is believed to extend to approximately 50 mAHD. As groundwater is expected to be found below the sand in the Cambrian Bedrock, quarrying activities will likely avoid intersecting groundwater. Nevertheless, quarrying operations should remain above 35mAHD to prevent groundwater intersection.

Available well data for the Site and surrounding area is relatively limited. Further information from any resource drilling investigations and / or the installation of a groundwater monitoring well would help validate these predictions.

Regards

Matt Williams
Hydrogeologist

Paul Magarey
Senior Hydrogeologist

8 References

Bureau of Meteorology (2018), Groundwater Dependent Ecosystems Atlas, accessed 29th January 2018. Federal Government of Australia.

Geoscience Australia (2018). Australian Stratigraphic Units Database. Electronically accessed January 2018. Federal Government of Australia.

Geoscience Australia (2011). *1s Digital Elevation Model*.

Bluck, R G (1983), Quarterly Report for the Period Ended 15th May, 1983, Poseidon Limited

SARIG (2018). South Australian Resource Information Gateway. Electronic Database Accessed January 2018. Government of South Australia.

Water Connect (2018). DEWNR Groundwater Data Application. Electronic Access January 2018. Government of South Australia.

Attachment 4

EPBC Act 1999 Protected Matters Search Report

Australian Government
Department of the Environment and Energy

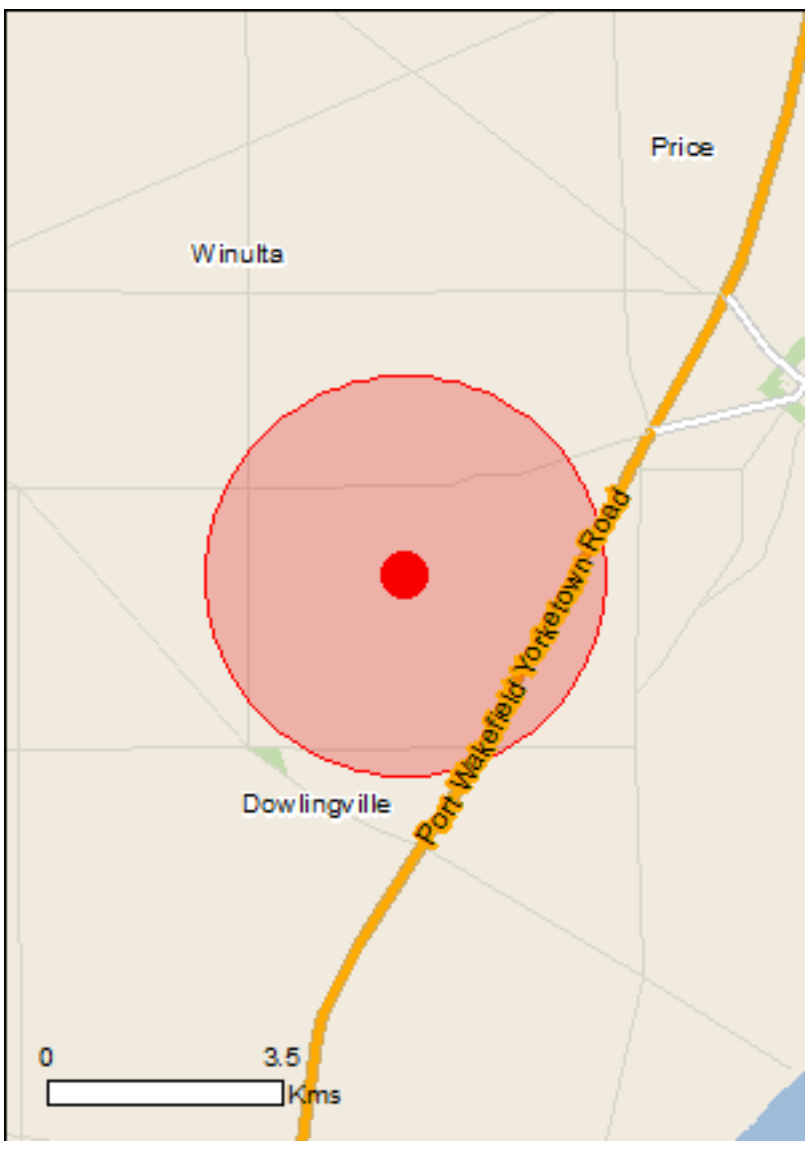
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

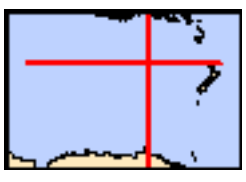
Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/02/18 11:14:00



Coordinates

Buffer: 3.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	11
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	19
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Plants		
Caladenia intuta Ghost Spider-orchid [82821]	Critically Endangered	Species or species habitat may occur within area
Caladenia tensa Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area
Olearia pannosa subsp. pannosa Silver Daisy-bush, Silver-leaved Daisy, Velvet Daisy-bush [12348]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		

Name	Threatened	Type of Presence
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-34.30783 137.9407

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of the Environment
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

Attachment 5

Visual Assessment Photographic Plates

Photo Plate 1: View from 406 Crowell Road to quarry overburden mound, vegetation covers majority of view just a minor view of overburden mounds.

Photo Plate 2: View from corner of Pioneer Road / Crowell Road and Mason Road minor view of overburden mounds.

Photo Plate 3: View from corner of 815 Pioneer Road looking north to overburden quarry and Mineral Claim area.

Photo Plate 4: Distant view of quarry from driveway of 924 Pioneer Road with very minor view of overburden mound.

Adelaide Brighton Ltd	**Visual Assessment Photographic Plates – Sheet 1**		
	GROUNDWORK p l u s	Date: 5 July 2018	Ref. 1742_PRJ1_003

Photo Plate 5: No view from 323 Dowlingville Slant Road due to natural rise of topography.

Photo Plate 6: Intersection of Pioneer Road / Dowlingville Slant Road / Rowntree Road and Cook Road. No view of quarry due to natural topography.

Photo Plate 7: View from residence at 65 Cook Road, distant view of the existing quarry and possible very minor view of Mineral Claim along the ridgeline.

Photo Plate 8: View from Corner of Cook Road and Yorke Highway. Shows views of existing quarry. Mineral Claim has no view due to natural topography.

Adelaide Brighton Ltd	**Visual Assessment Photographic Plates – Sheet 2**		
	GROUNDWORK p l u s	Date: 5 July 2018	Ref. 1742_PRJ1_003

Photo Plate 9: View from 2860 Yorke Highway, minor views of existing operations (vehicle and plant driving along top of quarry). Minor view of top of stockpile within PM 243.

Photo Plate 10: View from corner of Yorke Highway / Crowell Road and One and All Road. View of existing quarry stockpiles / overburden. No view of Mineral Claim area due to natural topography.

Photo Plate 11: View from 68 Crowell Road – minor views of existing operations.

Photo Plate 12: View from driveway of 151 Crowell Road - minor views of existing quarry / stockpile and overburden mounds. Minor views of Mineral Claim area with some relief from local topography.

Adelaide Brighton Ltd	**Visual Assessment Photographic Plates – Sheet 3**		
	GROUNDWORK p l u s	Date: 5 July 2018	Ref. 1742_PRJ1_003

Photo Plate 13: View from 251 Crowell Road (Crowell Holdings). No view of operations or Mineral Claim area due to natural topography.

Attachment 6

Extractive Minerals Lease 6519

Government of South Australia

Mining Act 1971

TENEMENT DOCUMENT

EXTRACTIVE MINERALS LEASE

TENEMENT HOLDER	Direct-Screens Holdings Pty Ltd (ACN 007 765 371)
CLASS OF LEASE	Extractive Minerals Lease (EML)
EXTRACTIVE MINERALS LEASE NUMBER	6519
COMMENCEMENT DATE	03 December 2020
TERM OF LEASE	Twenty one (21) years
EXPIRY DATE	02 December 2041
MINERAL(S)	Extractive Minerals (Sand)
AREA OF LEASE	189.74 hectares

DATE BY WHICH THE PROPOSED PEPR MUST BE SUBMITTED: 02 December 2021

TABLE OF CONTENTS **Page No.**

Details of Grant of a Mining Tenement

1. On 03 December 2020, pursuant to Part 6 of the Act, the Minister made a statutory grant of an Extractive Minerals Lease (the Mining Tenement) described in this Tenement Document.

2. The Mining Tenement is granted:

   2.1. To Direct-Screens Holdings Pty Ltd (ACN 007 765 371);

   2.2. For the purpose of recovering the Mineral(s) described in the First Schedule of this Tenement Document.

3. The Mining Tenement is numbered EML 6519.

4. The Mining Tenement is:

   4.1. Subject to the Terms and Conditions prescribed by the Act and Regulations and specified in this Tenement Document; and

   4.2. Subject to the Additional Terms and Conditions specified in the First and Second Schedules (respectively) of this Tenement Document.

Terms and conditions required by the Act to be specified in the Tenement Document

Description of the Land

5. The Mining Tenement is granted over an area of 189.74 hectares and is located in the Dowlingville area, approximately 10km southwest of Port Clinton.

6. The location of the Mining Tenement is more specifically defined in the map and coordinates specified in the Third Schedule of this Tenement Document.

Term, Commencement and Expiration

7. The Mining Tenement is granted for the term of twenty one (21) years. The term of the Mining Tenement commenced on 03 December 2020, and, unless it is earlier renewed, surrendered or cancelled, the Mining Tenement will cease on 02 December 2041.

Rental

8. The Tenement Holder shall pay, by way of rental, such sums as may be prescribed and in accordance with section 40 of the Act and regulation 42 of the Regulations.

Compensation

9. The Minister may, at any time, require the Tenement Holder to pay to any person an amount of compensation stipulated by the Minister, to which that person is, in the opinion of the Minister, entitled in consequence of mining operations in pursuance of the rights granted and the obligations imposed by the grant of the Mining Tenement.

Suspension and Cancellation: Stipulation of Process

10. Pursuant to subsection 41(1) of the Act, the Minister may suspend or cancel the Mining Tenement if the Tenement Holder contravenes or fails to comply with a term or condition of this Tenement Document or a provision of the Act (which includes the Regulations).

11. Pursuant to subsection 41(2) of the Act, the Minister may stipulate in the tenement document a process for suspension or cancellation that must be followed before the powers in subsection 41(1) may be exercised.

12. The process for suspension of the Mining Tenement shall be as stipulated in the Fourth Schedule of this Tenement Document.

13. The process for cancellation of the Mining Tenement shall be as stipulated in the Fifth Schedule of this Tenement Document.

Environmental outcomes specified pursuant to Regulation 65 of the Regulations

14. The Sixth Schedule of this Tenement Document sets out outcomes contemplated in regulation 65(2) of the Regulations that the Tenement Holder is required to address in any program submitted in accordance with Part 10A of the Act.

Explanatory note: The Sixth Schedule may also contain strategies and criteria which the Department has formed the view would address the outcomes set out in that Schedule.

Restatement of selected provisions from the Act

Explanation of Restatements

15. All of the restatements in this portion of this Tenement Document are included for guidance only and do not replace the substantive provisions of the Act or the Regulations.

16. If any restatement is inconsistent with the substantive provisions of the Act or the Regulations, the restatement will be invalid and the substantive provision of the Act or the Regulations will prevail and the Tenement Holder is required to comply with the substantive provision of the Act or the Regulations.

17. The Tenement Holder is still required to comply with any provision of the Act or Regulations that is not restated in this Tenement Document.

Restatement of rights conferred on Tenement Holder

18. The grant of the Mining Tenement confers an exclusive right upon the Tenement Holder including officers, employee(s), contractor(s) or duly authorised agent(s) of the Tenement Holder, to conduct mining operations on the Land, for the Mineral(s), subject to the provisions of the Act and the Regulations, and the terms and conditions of this Tenement Document.

19. The grant of the Mining Tenement authorises the Tenement Holder, including officers, employee(s), contractor(s) or duly authorised agent(s) of the Tenement Holder, to sell, or dispose of, the Mineral(s) recovered in the course of mining operations conducted in pursuance of the grant or to utilise any such mineral(s) for any commercial or industrial purpose, subject to the payment of royalty.

Restatement of rights and powers not conferred on the Tenement Holder

20. The grant of the Mining Tenement does not confer any right on the Tenement Holder:

    20.1. To use the Land for any purpose other than the authorised mining operations.

    20.2. To confer any rights on any other person in relation to the Mining Tenement.

    Explanatory note: For example, the Tenement Holder cannot grant rights to a party under a Joint Venture Agreement (or other agreement however described), to conduct mining operations on the Land in that party's own right. The Tenement Holder may engage employees, contractors or agents to perform work on the tenement on the Tenement Holder's behalf).

Restatement of obligations imposed on Tenement Holder: Program for environment protection and rehabilitation

21. The Tenement Holder must not carry out mining operations unless there is an approved program for environment protection and rehabilitation (an Approved PEPR).

22. A Proposed PEPR will only be approved when it complies with the requirements of Part 10A of the Act and the Regulations.

23. To comply with Part 10A of the Act, the Proposed PEPR must:

    23.1. Contain the information specified in section 70B(2) of the Act and regulation 65(2),(5),(6) of the Regulations and determinations made by the Minister under regulation 65(7) of the Regulations (if any);

    23.2. Comply with any applicable conditions specified in this Tenement Document (if any);

    23.3. Address any relevant environmental outcomes listed in the Sixth Schedule of this Tenement Document.

    Explanatory note: At the date of grant, the determinations are available at: http://energymining.sa.gov.au/minerals/knowledge_centre/ministerial_determinations

24. In accordance with regulation 65(10) of the Regulations, the Tenement Holder must submit to the Department for Energy and Mining (DEM) for ministerial approval a Proposed PEPR that fully complies with the Act and Regulations within twelve (12) months after the grant of the Mining Tenement unless the Tenement Holder has been granted an extension of time for such submission.

Explanatory note: Until otherwise notified, the Tenement Holder may apply for an extension of time in writing to the Director of Mines, GPO Box 320, Adelaide, SA 5001, setting out the reasons why the Tenement Holder seeks an extension and the date when the Tenement Holder estimates that the document will be ready for submission to the Minister.

Restatement of obligations imposed on Tenement Holder: Working conditions

25. In accordance with regulation 35 of the Regulations, unless otherwise determined or agreed by the Minister, the Tenement Holder must:

    25.1. Commence mining operations in accordance with the Approved PEPR within twelve (12) months after its approval; and

    25.2. Thereafter continue mining operations in accordance with the requirements of the program in the Approved PEPR.

Explanatory note: Until otherwise notified, the Tenement Holder may apply for an extension of time in writing to the Director of Mines, GPO Box 320, Adelaide, SA 5001, setting out the reasons why the Tenement Holder seeks an extension and the date when the Tenement Holder estimates that the document will be ready for submission to the Minister.

Restatement of obligations imposed on Tenement Holder: Other

26. In addition to obligations about the conduct of mining operations and rehabilitation, the Act and Regulations impose other obligations on the Tenement Holder including obligations to:

    26.1. Comply with Part 3 of the Act (royalties).

    26.2. Comply with the applicable provisions of Part 9 of the Act (entry onto land and use of declared equipment).

    26.3. Comply with the applicable provisions of Part 9B of the Act (native title).

    26.4. Comply with the provisions of section 76 of the Act (mining returns) to the extent relevant to an extractive minerals lease.

    26.5. Comply with section 77 of the Act (records and geological samples) and regulation 84 of the Regulations.

    26.6. Comply, as necessary, with section 83 of the Act (ministerial consent for dealings in relation to the Tenement) and regulations 44 and 70 of the Regulations.

    26.7. Comply, insofar as applicable to an extractive minerals lease, with regulation 86 of the Regulations (compliance reports).

    26.8. Comply with the requirement in regulation 43 of the Regulations to maintain all posts, boundary indicator markers and notices in the positions required by the Regulations as applicable.

    26.9. Permit the pastoral lessee (if any) of the Land to have free access and use at all times for domestic purposes, and for the purposes of watering stock from any surface water on the land which shall not have been provided or stored by artificial means by the Tenement Holder.

Restatement of Exempt Land

27. In accordance with section 9 of the Act, the grant of the Mining Tenement does not authorise prospecting, exploring or mining upon any exempt land unless or until the benefit of the exemption is waived under section 9AA.

Restatement of Bond

28. In accordance with section 62 of the Act, the Minister may by written notice require the Tenement Holder to pay a bond in such sum and subject to such terms and conditions as ensure, in the opinion of the Minister, that the following will be satisfied:

    28.1. Any civil or statutory liability likely to be incurred by the Tenement Holder in the course of carrying out mining operations;

    28.2. The present and future obligations of the Tenement Holder in relation to the rehabilitation of land disturbed by mining operations.

    Explanatory note: The terms and conditions referred to in this paragraph will be imposed in the written notice given by the Minister. The Minister may include a term or condition that the bond may be increased if circumstances arise during the term of this Mining Tenement which increases the rehabilitation liability or increases the cost of civil or statutory liability.

Restatement of Fees

29. The Tenement Holder shall pay all fees imposed by the Act and Regulations from time to time.

Restatement of Renewal

30. This Mineral Tenement shall be renewed in accordance with the Act.

Restatement of Surrender

31. The Tenement Holder may apply to surrender the Mining Tenement during its term in accordance with the Act and the Regulations.

Restatement of Forfeiture

32. The Mining Tenement is subject to the forfeiture provision of the Act being sections 70 and 85.

Restatement of Notices

33. Notices under the Act will be served in accordance with regulation 106 of the Regulations.

Restatement of Mining Register

34. Section 15A of the Act requires the Mining Registrar to keep a register of, amongst other things, mineral leases. Upon payment of the prescribed fee, the public may inspect the Mining Register.

Restatement of Mining Operations

35. As defined by section 6 of the Act "mining operations" means:

    35.1. Operations carried out in the course of prospecting, exploring or mining for minerals; or

    35.2. Without limiting paragraph 35.1, any operations by which minerals are recovered from any place or situation, including by recovering minerals from the sea or a natural water supply; or

    35.3. On-site operations undertaken to make minerals recovered from the site a commercially viable product, other operations involving such minerals, or other operations involving minerals brought on to the site of a mine for processing; or

    35.4. Operations for the rehabilitation of land on account of the impact of any operations under a preceding paragraph; or

    35.5. Operations that are directly related to any operations under a preceding paragraph;

    but does not include –

    35.5.1. An investigation or survey under section 15 of the Act; or

    35.5.2. Fossicking; or

    35.5.3. The surface removal of loose rock material disturbed by agricultural operations.

36. This definition applies to operations that occur during all phases of the mine's life.

Restatement of requirement to notify change in status

37. The Tenement Holder must comply with regulation 98(1)(c) and 98(2).

    37.1. If the Tenement Holder is a natural person, he or she is required to notify the Mining Registrar of a declaration of bankruptcy within fourteen (14) days of the declaration.

37.2. If the Tenement Holder is a company, it is required to notify the Mining Registrar of its being placed under official management, or in liquidation or receivership within fourteen (14) days of any of those events.

Restatement of Public Liability Insurance

38. The Tenement Holder must comply with regulation 90, which concerns public liability insurance

Definitions

39. In this Tenement Document, the following words have the following meanings:

39.1. **"the Act"** means the *Mining Act 1971* of South Australia;

39.2. **"Additional Terms and Conditions"** means the Additional Terms and Conditions authorised by section 34(4) of the Act and set out in the First and Second Schedule of this Tenement Document respectively;

39.3. **"Applicant"** means the person or persons who applied for the Mining Tenement;

39.4. **"Approved PEPR"** means the document contemplated by section 70B(5) of the Act i.e. a Proposed PEPR that has received ministerial approval;

39.5. **"Business Day"** means any day that is not a Saturday, Sunday or a public holiday in South Australia;

39.6. "**EPA**" means the Environment Protection Authority under the *Environment Protection Act 1993* of South Australia;

39.7. **"extractive minerals lease**" means the Mining Tenement granted to the Tenement Holder as referred to in paragraph 1 of this Tenement Document;

39.8. **"the Land"** means the land over which this Mining Tenement is granted and which is described in paragraphs 5 and 6 of this Tenement Document and in the Third Schedule of this Tenement Document;

39.9. "**Mine completion**" means the Land has been rehabilitated to an extent that the Minister could approve an application for surrender of the Mining Tenement on the basis that the Tenement holder has complied with sub-regulation 45(1) of the Regulations and there is no obstacle under sub-regulation 45(3) of the Regulations;

39.10. **"Mineral(s)"** means the Mineral(s) referred to on the front page of this Mineral Lease and in the First Schedule;

39.11. **"Mining Tenement"** means the extractive minerals lease granted to the Tenement Holder as referred to in paragraph 1 of this Tenement Document;

39.12. **"the Minister"** means the Minister for Energy and Mining (or any substituted Minister);

39.13. **"PEPR"** means Program for Environment Protection and Rehabilitation;

39.14. **"the Program"** means the Approved PEPR as defined above;

39.15. **"Proposed PEPR"** means the document required by regulation 65(10) of the Regulations to be submitted for ministerial approval within twelve (12) months of the date of grant of the Mining Tenement;

39.16. **"Regulations"** means the Mining Regulations 2011 of South Australia;

39.17. **"Tenement Document"** means this document;

39.18. **"Tenement Holder"** means the person, or persons to whom the mining tenement was granted and includes:

39.18.1. in the case of a natural person, the executors, administrators and assigns of that person;

39.18.2. in the case of a body corporate, the successors, administrators or permitted assigns thereof.

Explanatory Note: "The Tenement Holder" has the same meaning as "the mining operator" as defined by section 6 of the Act.

39.19. "**third party land users**" means the owner of land (as defined by the Act) and any persons lawfully occupying land with the licence of the owner, or the consent of the owner and "**third party land use**" has a corresponding meaning;

39.20. **"Weeds"** means any invasive plant that threatens native vegetation in the local area or any species recognised as invasive in South Australia.

Interpretation

40. For the purposes of interpreting this Tenement Document the following will apply:

40.1. Unless otherwise stated, any term which is used in this Tenement Document which has a specific meaning in the Act or the Regulations, has that same meaning in this Tenement Document;

40.2. The masculine shall include the feminine, words importing persons shall include corporations, and the singular shall include the plural when the context or circumstances require and unless inconsistent with or repugnant to the context the following words shall have the meanings set opposite to them respectively

40.2.1. "amendment" includes an addition, excision or substitution;

40.2.2. "the Land" includes any part thereof; and

40.2.3. "the term" includes any renewal or extension thereof.

40.3. If the Mining Tenement is granted to more than one person, all of the persons to whom it is granted are all jointly and severally liable for compliance with the Act, the Regulations and this Tenement Document, including the Additional Terms and Conditions in the First and Second Schedules of this Tenement Document respectively;

40.4. If, by virtue of a dealing under section 83 of the Act, the Mining Tenement comes to be held by more than one person, they will all be jointly and severally liable for compliance with the Act, the Regulations and this Tenement Document including the Additional Terms and Conditions in the First and Second Schedules of this Tenement Document respectively;

40.5. If any act pursuant to the Tenement Document would otherwise be required to be done on a day which is not a Business Day, then that act may be done on the next Business Day;

40.6. To the extent that there is any inconsistency, on the one hand, between a term of this Tenement Document or any Additional Term or Condition, and, on the other hand, the Act or Regulations, the Act or Regulations shall prevail;

40.7. Subject to the transitional provisions in any amendment to the Act or the Regulations, all provisions referred to in this Tenement Document shall be taken to include any such amendment;

40.8. Subject to the transitional provisions in any amendment to the Act or the Regulations, to the extent that there is any inconsistency, on the one hand, between a term of this Tenement Document or any Additional Term or

Condition, and, on the other hand, any amendments to the Act or Regulations, the amended Act or Regulations shall prevail;

40.9. Footnotes and Explanatory notes do not form part of this Tenement Document;

40.10. The contents page does not form part of this Tenement Document;

40.11. The front page and all of the Schedules form part of this Tenement Document.

Executed by the Tenement Holder(s) in accordance with regulation 41

SIGNED by Direct-Screens Holdings Pty Ltd (ACN 007 765 371))
in accordance with section 127 of the)
Corporations Act 2001 and its Constitution)

……	……
Signature of Director	Signature of Director/Secretary
……	……
Print Name of Director	Print Name of Director/Secretary
……	……
Date	Date

When executed, the Tenement Document will be entered into the Mining Register and will be available through the Mining Register Search Tool on the South Australian Resources Information Gateway (SARIG) at https://tenementregister.sarig.sa.gov.au/

Entered in the Mining Register on 03 December 2020
In accordance with section 15A(1)(c) of the Act.

Signed by ……..
Junesse Martin
Mining Registrar

……
Date

FIRST SCHEDULE

ADDITIONAL TERMS

Explanatory note: A term is a clause that gives a right to a Mining Tenement.

Authorised Mining Operations

1. Mining operations authorised by the grant of the Mining Tenement must:
   1.1. Only be for the recovery of extractive minerals including, but not limited to, sand; and
   1.2. Be consistent with the mining operations described in the mining proposal document dated March 2020.

SECOND SCHEDULE

ADDITIONAL CONDITIONS

Explanatory note: A condition is a clause that imposes a restriction on a Mining Tenement.

INDEX TO SECOND SCHEDULE (ADDITIONAL CONDITIONS) Condition No.

Transparency

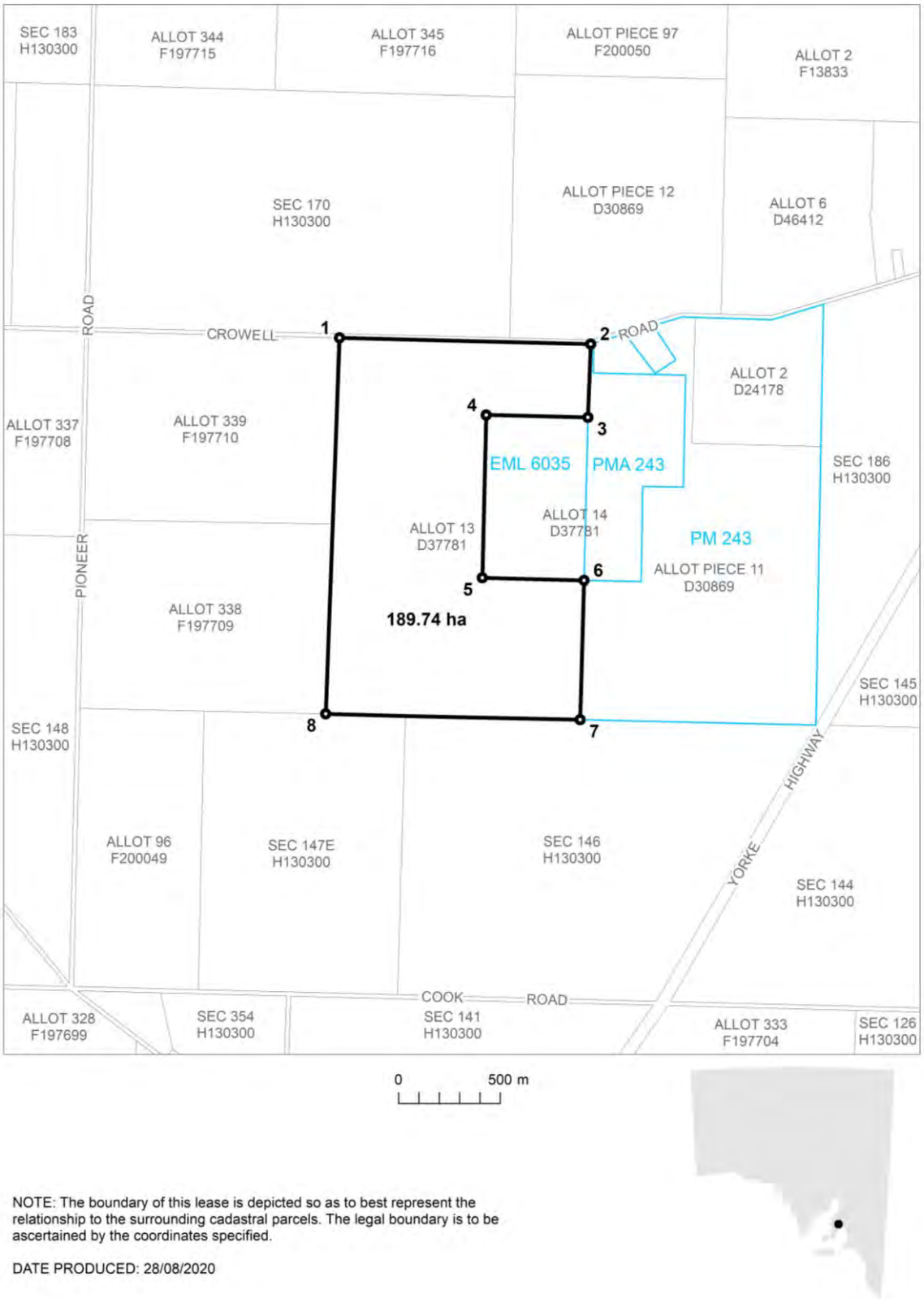
1. The Tenement Holder agrees to the Approved PEPR and any compliance reports and reportable incident reports, submitted in accordance with the Regulations, being made available for public inspection.

Other Legislation

2. The Tenement Holder must comply with all State and Commonwealth legislation and regulations applicable to the activities undertaken pursuant the grant of the Mining Tenement including (but not limited to) the:
   - 2.1. *Development Act 1993;*
   - 2.2. *Planning, Development and Infrastructure Act 2016;*
   - 2.3. *Dangerous Substances Act 1979;*
   - 2.4. *National Parks and Wildlife Act 1972;*
   - 2.5. *Landscape South Australia Act 2019;*
   - 2.6. *Public and Environmental Health Act 1987;*
   - 2.7. *Radiation Protection and Control Act 1982;*
   - 2.8. *Aboriginal Heritage Act 1988;*
   - 2.9. *Heritage Places Act 1993;*
   - 2.10. *Work Health and Safety Act 2012;*
   - 2.11. *Environment Protection Act 1993;*
   - 2.12. *Native Vegetation Act 1991;*
   - 2.13. *Mines and Works Inspection Act 1920; and*
   - 2.14. *Road Traffic Act 1961.*

THIRD SCHEDULE

MAP



NOTE: The boundary of this lease is depicted so as to best represent the relationship to the surrounding cadastral parcels. The legal boundary is to be ascertained by the coordinates specified.

DATE PRODUCED: 28/08/2020

THIRD SCHEDULE

DESCRIPTION OF AREAS

All that part of the State of South Australia, bounded by a line joining the points of coordinates set out in the following table:

Map Grid of Australia 2020 Zone 53

Point	Easting	Northing
1	769907.70mE	6200903.87mN
2	771152.95mE	6200873.51mN
3	771144.22mE	6200515.42mN
4	770644.14mE	6200528.03mN
5	770624.63mE	6199727.89mN
6	771124.72mE	6199715.27mN
7	771107.99mE	6199028.71mN
8	769860.99mE	6199059.90mN

Area: 189.74 ha

Based on information provided by the applicant.

FOURTH SCHEDULE

PROCESS FOR SUSPENSION

Issuance of Suspension Show Cause Notice

1. Where the Minister is of the view that there may be grounds to consider whether to suspend the grant of the Mining Tenement, the Minister shall give written notice to the Tenement Holder, which shall:

    1.1. Specify the provision of the Act or the Regulations, or the term or condition of the grant of the Mining Tenement, that the Minister believes the Tenement Holder has contravened or failed to comply with; and

    1.2. Give the Tenement Holder thirty (30) Business Days from the date of the written notice to show cause why the grant of the Mining Tenement should not be suspended ("the Suspension Show Cause Notice").

Minister's action if Tenement Holder does not respond

2. If the Tenement Holder does not respond to the Suspension Show Cause Notice within thirty (30) Business Days, the Minister may suspend the grant of the Mining Tenement without further notice (in accordance with the process outlined below).

Minister's action if Tenement Holder does respond

3. If the Tenement Holder responds to the Suspension Show Cause Notice within thirty (30) Business Days, the Minister will consider the Tenement Holder's submission and decide whether to suspend the grant of the Mining Tenement (in accordance with the process outlined below).

Written Notice of Minister's decision

4. The Minister shall give written notice to the Tenement Holder of the Minister's decision;

    4.1. If the decision is to suspend the grant of the Mining Tenement, the written notice shall be called "Notice of Decision: Suspended".

    4.2. If the decision is to not suspend the grant of the Mining Tenement, the written notice shall be called "Notice of Decision: Not Suspended".

5. A Notice of Decision: Not Suspended, may contain any information that the Minister considers relevant.

6. A Notice of Decision: Suspended, shall:

   6.1. Specify the reason for suspension;

   6.2. Specify the period of suspension;

   6.3. Specify the action (if any) the Tenement Holder may be required to take for the Minister to consider revoking the suspension, and the time frame for taking that action; and

   6.4. Inform the Tenement Holder of their right of appeal to the Environment, Resources and Development Court in accordance with subsection 41(3) of the Act.

Minister's action if Tenement Holder takes action as specified in Notice of Decision

7. If the Tenement Holder takes the action specified by the Minister under paragraph 6.3, the Minister will consider revoking the suspension.

8. If the Minister revokes the suspension, the Minister will, within a reasonable time write to the Tenement Holder informing the Tenement Holder of the revocation.

Minister's action if Tenement Holder appeals

9. If the Tenement Holder appeals to the Environment, Resources and Development Court, the Minister will consider exercising the discretion under section 41(4) of the Act, to stay the operation of the suspension until the appeal is finally disposed of.

10. If the Environment, Resources and Development Court, or a court of further appeal finally determines it is satisfied that there is no proper ground for the suspension, and so orders, the Minister will reinstate the grant of the Mining Tenement in accordance with section 41(5) of the Act.

The Mining Register

11. All of the stages in the suspension process shall be recorded on the Mining Register by way of appropriate memoranda, for example:

   11.1. A memorandum Notice of Decision: Suspended;

   11.2. A memorandum Notice of Decision: Not Suspended;

   11.3. A memorandum of Minister's Decision to Revoke the Suspension;

   11.4. A memorandum of Appeal;

   11.5. A memorandum of Stay of Suspension by the Minister;

11.6. Memoranda of all of the courts' orders (whether the Environment, Resources and Development Court or subsequent appeal courts).

FIFTH SCHEDULE

PROCESS FOR CANCELLATION

Issuance of Cancellation Show Cause Notice

1. Where the Minister is of the view that there may be grounds to consider whether to cancel the grant of the Mining Tenement, the Minister shall give written notice to the Tenement Holder, which shall:

    1.1. Specify the provision of the Act or the Regulations, or the term or condition of the grant of the Mining Tenement, that the Minister believes the Tenement Holder has contravened or failed to comply with; and

    1.2. Give the Tenement Holder sixty (60) Business Days from the date of written notice to show cause why the grant of the Mining Tenement should not be cancelled ("the Cancellation Show Cause Notice").

Minister's action if the Tenement Holder does not respond

2. If the Tenement Holder does not respond to the Cancellation Show Cause Notice within sixty (60) Business Days, the Minister may cancel the grant of the Mining Tenement without further notice (in accordance with the process outlined below).

Minister's action if the Tenement Holder does respond

3. If the Tenement Holder responds to the Cancellation Show Cause Notice within sixty (60) Business Days, the Minister will consider the Tenement Holder's submission and decide whether to cancel the grant of the Mining Tenement (in accordance with the process outlined below).

Written notice of Minister's decision

4. The Minister shall give written notice to the Tenement Holder of the decision.

    4.1. If the decision is to cancel the grant of the Mining Tenement, the written notice shall be called "the Notice of Decision: Cancelled".

    4.2. If the decision is not to cancel the grant of the Mining Tenement, the written notice shall be called "the Notice of Decision: Not Cancelled".

5. A Notice of Decision: Not Cancelled may contain any information that the Minister considers relevant.

6. A Notice of Decision: Cancelled shall:

   6.1. Specify the reason for cancellation;

   6.2. Specify the date from which cancellation is effective; and

   6.3. Inform the Tenement Holder of their right of appeal to the Environment, Resources and Development Court in accordance with subsection 41(3) of the Act.

Minister's action if Tenement Holder appeals

7. If the Tenement Holder appeals to the Environment, Resources and Development Court, the Minister will consider exercising his discretion under section 41(4) of the Act, to stay the operation of the cancellation until the appeal is finally disposed of.

8. If the Environment, Resources and Development Court, or a court of further appeal finally determines that it is satisfied that there is no proper ground for the cancellation, and so orders, and the cancellation has not been stayed by the Minister under section 41(4) of the Act, or by order of the Environment, Resources and Development Court, the Minister will reinstate the grant of the Mining Tenement in accordance with section 41(5) of the Act.

The Mining Register

9. All stages in the suspension process shall be recorded on the Mining Register by way of appropriate memoranda, for example:

   9.1. A memorandum Notice of Decision: Cancelled;

   9.2. A memorandum of Notice of Decision: Not Cancelled;

   9.3. A memorandum of Minister's Decision to Revoke the Cancellation;

   9.4. A memorandum of Appeal;

   9.5. A memorandum of Stay of Cancellation by the Minister;

   9.6. Memoranda of all of the courts' orders (whether the Environment, Resources and Development Court or subsequent appeal courts).

SIXTH SCHEDULE

ENVIRONMENTAL OUTCOMES

AND ASSOCIATED CRITERIA AND STRATEGIES PURSUANT TO
REGULATION 65 OF THE MINING REGULATIONS 2011

Explanatory note: The Sixth Schedule of this Tenement Document sets out outcomes contemplated in regulation 65(2) of the Regulations, that the Tenement Holder is required to address in any program submitted in accordance with Part 10A of the Act. The Sixth Schedule may also specify requirements for strategies and criteria relevant to the outcomes set out in that Schedule.

INDEX TO SIXTH SCHEDULE **Clause No.**

Air Quality Outcome

1. The Tenement Holder must, during construction and operation, ensure that there are no public health and/or nuisance impacts from dust generated by mining operations.

Noise Outcome

2. The Tenement Holder must, during construction and operation, ensure that there are no public nuisance impacts from noise as a result of mining operations.

Visual Amenity Outcomes

3. The Tenement Holder must ensure the form, contrasting aspects and reflective aspects of mining operations are visually softened to blend in with the surrounding landscape.

4. The Tenement Holder must ensure all rehabilitated landforms integrate and harmonise with the surrounding landscape

Soil Quality Outcome

5. The Tenement Holder must, during construction and operation ensure that the existing (pre-mining) soil quality and quantity is maintained.

Public Safety Outcomes

6. The Tenement Holder must, during construction and operation, ensure that unauthorised entry to the land does not result in public injuries and or deaths that could have been reasonably prevented.

7. The Tenement Holder must demonstrate that post completion, the risks to the health and safety of the public so far as they may be affected by mining operations, are as low as reasonably practicable.

Traffic Outcome

8. The Tenement Holder must, during construction and operation, ensure there are no traffic accidents involving members of the public and mine-related traffic that could have been reasonably prevented by the Tenement Holder.

Protection of Third-Party Property Outcome

9. The Tenement Holder must, during construction and operation, ensure that there are no adverse impacts to third party land use or property on or off the land as a result of mining operations.

Heritage Outcome

10. The Tenement Holder must, during construction and operation, ensure there is no damage, disturbance or interference to Aboriginal and non-Aboriginal heritage sites, objects or remains as a result of mining operations unless it is authorised under the relevant legislation.

Weeds and Pests Outcome

11. The Tenement Holder must, during construction and operation, ensure no introduction of new species of environmental weed, plant pathogens or pests (including feral animals), nor sustained increase in abundance of existing weed or pest species on the land.

Surface Water Outcomes

12. The Tenement Holder must ensure there is no adverse impact on surface water quantity or quality as a result of mining operations.

13. The Tenement Holder must, ensure no contamination of surface water occurs post mine completion as a result of mining operations within the land.

Waste Outcome

14. The Tenement Holder must, during construction and operation, ensure no adverse impacts to the environment from commercial or industrial waste produced as a result of mining operations.

Post Mining Land Use Outcome

15. The Tenement Holder must ensure the land is progressively and finally rehabilitated to support the future land use agreed by the Director of Mines or other authorised officer.

Mine Closure and Rehabilitation Strategies

16. The Tenement Holder is required to address the following matters for the purposes of Regulation 65(2)(c) of the Regulations in relation to the Post Mining Land Use Outcome in Sixth Schedule Clause 15.

    16.1. Provide appropriate waste management strategies for overburden.

Attachment 7

Consultation Summary

Stakeholder: Bevan Crowell (Adjacent Landowner)

Date of consultation: 8 July 2019 (In person)

Issue(s) raised: Bevan currently owns PM 243 located east of the MC area which is currently leased to ABL. No issues were raised with respect to the current operations of the Site and the proposed expansion into the MC area.

It was acknowledged that the progressive rehabilitation strategy proposed for the MC area will be similar to what is currently occurring within the existing EML and PM areas. The proposed QDP's have been designed based upon consistent sand quality throughout the Site. The proposed Conceptual Final Landform has been designed to support an ongoing final land use of grazing and cropping. Earth bunding with a vegetation screen and access track is proposed around the perimeter of the extraction area, during the operation of the Site. The earth bunding will be removed during the final earthworks establishing the proposed final landform. If the MLP is approved, it is proposed that a combined MOP / PEPR will be established for the whole Site.

Stakeholder Name: Nick and Kylie Correll (Adjacent landowner)

Date of consultation: 14 September 2021

Issue(s) raised:
Noise: Nick and Kylie were concerned of the night operations with the 'beeping' noise of machines within the quarry. They suggested if there was a quieter alternative that does not exceed further than the pit, especially at night.

Vegetation: Nick and Kylie expressed interest in the progressive rehabilitation that will be occurring in the north-western section of the quarry. They were hoping that there would be no grasses but rather taller trees (MJ please double check).

Traffic: Nick and Kylie were concerned about the safety of commuters on Crowell Road, especially around harvest season (November / December each year). The road is unsealed and raised a number of safety concerns, especially with large trucks that are not familiar with the road. It was suggested that sealing of the road will improve the safety of commuters into the quarry and nearby farms.

Community Engagement: Kylie brought up the opportunity for the Price Sand Quarry to be involved with the Price 140th Community Day in August 2022 as a direct employer of Price residents.

Date of consultation: 5 July 2018 (In person)

Issue(s) raised: Nick and Kylie reside in the closest property adjacent the MC, with their house located approximately 570 m north of the north western corner of the MC. Their property is slightly elevated in comparison to the MC area, however they have established thick vegetation screens along the southern boundary of their property which currently screens views into the MC area. The direct seeding technique used to establish their vegetation screens has been quite an effective method for revegetation and they would be happy to supply seed to the quarry for use in the establishment of the proposed boundary vegetation buffers.

Nick is a fourth-generation farmer in the area and doesn't consider dust to be an issue from the existing quarry operations. The condition and maintenance of Crowell Road particularly up to the quarry entrance has been an issue, particularly during drier periods when it becomes corrugated which causes noise to be generated from empty trucks entering the quarry. Noise from quarry operations is not an issue from their property, however, they support the establishment of the perimeter earth bunds and vegetation screens to reduce views of the quarry pit and help reduce the noise generated from empty trucks within the quarry.

It was noted that most trucks leaving the quarry travel east along Crowell Road to head towards Adelaide, however, there have been instances when trucks traveling west along Crowell Road have had disregard for the

giveaway intersections and unsafe driving behaviours have been observed where trucks fail to give way to light vehicles.

The land within the MC area is currently used for cropping, which is expected to continue up until it is required for the future operations of the quarry. If the opportunity arose, Nick would be interested in gaining access to the land for cropping. The final landform of the Site was also supported in order to enable ongoing cropping and grazing of the land to continue post quarry operations.

Issue considered:
Perimeter earth bunds and vegetation buffers will be established adjacent the extraction areas of the MC which will include the planting of native vegetation species suitable to the area. Direct seeding methods will be investigated during the establishment of the vegetation screens.

ABL will consult with the Yorke Peninsula Council regarding maintenance and upgrade opportunities of Crowell Road.

ABL will ensure that only licenced drivers are accessing the Site, and that they are reminded of their obligations to adhere to local road rules and traffic signs. If future vehicle incidents are observed, they should be reported to the Police and ABL for investigation.

ABL will investigate the opportunity for future cropping by other interested parties within the MC area.

Stakeholder Name: Tim Crowell (Adjacent landowner)

Date of consultation: 5 July 2018 (In person)

Issue(s) raised: Tim and his family own the property located to the east of PM 243 and was not concerned with any of the proposed activities within the current operations and the proposed expansion into MC 4463.

Stakeholder Name: Graham Cook

Date of consultation: 5 July 2018 (Adjacent landowner)

Issue(s) raised: Graham did not express any concern with the proposed operations of the quarry, however he noted that dust is sometimes generated from the Site during southerly winds. Occasionally vehicle reversing beacons are heard from his property, but they do not cause him any issues or disruption and he has no issues with the trucks needing to work within the Site after hours.

Graham supported the final landform concept and the development of an earth bund along a portion of the southern boundary to reduce views into the quarry.

Issue considered:
A water cart is used onsite to assist with dust suppression within the operational areas of the quarry. Progressive rehabilitation will be undertaken throughout the operation of the Site reducing the extent of disturbed footprint and potential for dust generation.