

Program for Environment Protection and Rehabilitation



Date:	05/09/2024
Name of Tenement Holder:	Longs Sands and Metal Pty Ltd
Name of Operation:	Longs Loam Pit (Salt Creek Sand Pit)
Tenement No:	EML6140
Size (ha):	67.6
Contact Details:	Name: Christine Long Phone: 8532 2540 Email: longs.sand.metal@bigpond.com

Version Control Table

Version	Purpose	Author	Date finalised
1.0	Submitted to DEM for assessment. DEM comments provided 1 April 2025.	C Long	7/9/2024
1.1	Program reviewed following DEM comments. Drawings DRG006, DRG007A and DRG007B redrafted by Groundwork Plus along with other technical input and content. Other content updated to reflect current practice on the Site.	C Long / Groundwork Plus	6/8/2025
1.2	Submitted to DEM for re-assessment 7 August 2025.		

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Section 1: Description of the Existing Environment

1 Existing Environment	
1.1 Location	<p>EML6140 (the Site) is located at Pallamana, on the Reedy Creek Road, between Murray Bridge and Palmer.</p> <p>The nearest town is Murray Bridge, located 15.5 kilometres (km) south; Palmer is 19.4 km north and Mannum is 25.5 km north-east.</p> <p>The Site is approximately 0.9 km from the nearest house, on the adjoining farming property, across the Reedy Creek Road. Refer Figure 1 – EML6140 on page 8.</p> <p>Longs trucks access the site via the following route: haul road off the Reedy Creek Road, entering via the lay-by (as shown in Figure 1). The track that runs past the Salt Creek Railway Bridge (see section 1.4) was rendered impassable following a 2021 flood event.</p> <p>Product is transported via the Reedy Creek Rd to Longs depot / sales yard on Rayson St, Murray Bridge or directly from the Site to customers.</p> <p>A Site Location Plan and Land Access Map are provided within Section 9: Attachment 1 – Drawings:</p> <ul style="list-style-type: none"> • 5227.DRG.002 Site Location Plan • 5227.DRG.002 Land Access Map.
1.2 Land Use	<p>The Local Council is: The Rural City of Murray Bridge (Regional Council). The zoning as defined by the Planning and Design Code or relevant council development plans: Rural.</p> <hr/> <p>The land use (historical and current) for the area: grazing and cropping and extraction. The Site has been operational as an extractive quarry since 2003.</p> <hr/> <p>The surrounding land uses are: grazing, cropping and vegetable production (to the north).</p>
1.3 Land Access	<p>EML6140 is located on freehold land <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Certificate of Title details: Lot 1, Hundred of Mobilong, Section 160, in the area named Pallamana, Deposited Plan D65863, Certificate of Title – Volume 5931, Folio 844. The land owner is: Longs Sands and Metal Pty Ltd.</p> <hr/> <p><input checked="" type="checkbox"/> There are no land restrictions/easements listed on the title.</p> <hr/> <p><input checked="" type="checkbox"/> There is no exempt land within EML 6140 as defined by section 9 of the <i>Mining Act 1971</i>.</p> <hr/> <p>Provide details of any Native Title land, if relevant: Not relevant.</p>

1 Existing Environment	
1.4 Heritage	<p>A search of the Register of Aboriginal Sites and Objects has been included in Attachment 2 (provided separately).</p> <p>There are no impacts on this heritage site from the mining operation.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> There are no other registered Aboriginal, Non-Aboriginal or geological heritage sites located in or adjacent to EML 6140. <input checked="" type="checkbox"/> A heritage site is located nearby, outside of the property, therefore not adjoining EML6140. This is the Salt Creek Railway Bridge (Concrete Girder). This is a State Heritage Place listed in the SA Heritage Register as State Heritage Place ID 14602 / Heritage Number 14305. A plan showing the location of the Salt Creek Railway Bridge in relation to EML 6140 is at Figure 1 – EML 6140, overleaf. <p>The Land Access map at Section 9: Attachment 1 shows the above heritage site, numbered 14305, against the railway line.</p>

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Figure 1. EML6140.

1. Existing Environment

1.5 Groundwater

A search of the DEW 'NatureMaps' application (2024) confirmed the Site is located within Prescribed Water Resource Area – Eastern Mount Lofty Ranges as prescribed under the *Landscape South Australia Act 2019*. The Site is not located within a Prescribed Wells Area.

A search of the BoM Groundwater Dependent Ecosystems Atlas (GDE) Atlas (2024) identified one (1) aquatic Groundwater Dependent Ecosystem (GDE) within the Site listed as Salt Creek, a Low Potential GDE described as a watercourse. Three (3) Terrestrial GDEs are located approximately 105 metres (m) south-east, 535 m east and 655 m east of the Site comprising of *Eucalyptus incrassata* mallee woodland (low potential). One (1) Terrestrial GDE located approximately 215 m west of the Site is described as low potential comprising of *Lomandra effusa* (mixed) grassland.

A search of the Department for Environment and Water (DEW) database 'WaterConnect' (2024) for available well data within a three (3) km radius of the Site provided the results below in **Table 1. Groundwater Data**.

Based on the data provided below to the nearest well (6727-560) there is a buffer between the groundwater level and the pit floor at 57 m AHD of 27.37 m AHD.

Table 1. Groundwater Data

Well number	Distance from Site (km)	Direction from Site	Topographic elevation of well m AHD	TDS mg/L	EC (µS/cm)	SWL m BGL	RWSL m AHD	Lowest Pit Floor Depth m AHD	Buffer m AHD	Date of well activity	Aquifer
6727-549	1.01	North	66.79	4045	7178	60.95	5.84	57	51.16	26/10/1949	Ty (Murray Group)
6727-550	1.10	North east	59.7	Not measured	Not measured	35.43	24.27	57	32.73	23/09/1983	Ty (Murray Group)
6727-560	0.50	South	72.3	6077	10645	42.67	29.63	57	27.37	27/10/1949	Ty (Murray Group)
<u>6727-565*</u>	<u>0.99</u>	<u>West</u>	<u>101.6</u>		-	<u>No data</u>	<u>No data</u>	<u>57</u>	-	-	<u>Unknown</u>
<u>6727-563*</u>	<u>1.00</u>	<u>West</u>	<u>100.6</u>		-	<u>45.72</u>	<u>54.88</u>	<u>57</u>	<u>2.12</u>	<u>24/10/1949</u>	<u>Eeb (Backstairs Passage Formation)</u>
6727-595	0.69	South east	64.5	Not measured	Not measured	60		57	57	24/10/1949	Ty (Murray Group)
6727-2636	1.50	North east	58.6	2210	3970	48.6	10	57	47	2/06/1997	Ty (Murray Group)
6728-542	2.70	North east	60	Not measured	Not measured	44.2	15.8	57	41.2	29/01/1954	Ty (Murray Group)
6727-596	1.57	South east	59.9	3503	6237	80	9.9	57	47.1	20/10/1949	Ty (Murray Group)
6727-633	1.60	South	76.4	5290	9309	68.58	7.82	57	49.18	17/10/1949	Ty (Murray Group)
6727-2454	1.40	South East	61.3	3626	6450	50.69	10.61	57	46.39	11/01/1985	Ty (Murray Group)

*The data for Groundwater wells 6272-563 and 6272-565 are not considered relevant in determination of water depths due to not being topographically representative of the Site and measuring a different aquifer.

Groundwater salinity of wells within three (3) kms of the Site is listed above in **Table 1. Groundwater Data**, with the main usage of groundwater within proximity to the Site being limited irrigation and stock watering with the majority of land owners in the area utilising mains water.

The majority of the wells are not equipped with farmers in the area mostly using mains water for stock watering. The vegetable farm located to the north of EML6140 holds a surface water licence from the Murray River used for overhead centre pivot irrigation.

<p>1.6 Surface water</p>	<p>A search of the DEW 'NatureMaps' application (2024) confirmed the Site is located within Prescribed Water Resource Area – Eastern Mount Lofty Ranges as prescribed under the <i>Landscape South Australia Act 2019</i>. The Site lies within the Murray Darling Basin boundary.</p> <p>The Site is not located within a Prescribed Wells area or the Murray River Protection Area.</p> <p>A search of the DEW application 'NatureMaps' (2024) identified the Site is located within the Salt Creek Surface Water catchment area. Attachment 1: Drawing No. 5227.DRG.004 – Topographic Map outlines identified watercourses located in proximity to the Site. Described within the 2019 Water Allocation plan for Eastern Mount Lofty Ranges as: <i>“The Salt Creek catchment is a medium sized catchment situated at the north-eastern extremities of the Eastern Mount Lofty Ranges. It has low topography and low, highly variable rainfall. Much of the catchment comprises plains, with only a small defined section of elevation in the upper sections stretching from near Bondleigh (located approximately six (6) km south of Rockleigh) to Tepko. From below the Murray Bridge to Mannum Road, the main ephemeral watercourse is shallow and poorly defined and contributes little water into the River Murray (Hammer 2004).”</i></p> <p>A wide ephemeral drainage course known as Salt Creek is located within the Site, refer to Attachment 1: 5227.DRG.004 – Topographic Map. The general topography of the area shows surface water flows from west to east through Salt Creek with topography draining inwards from the north and the south towards the creek bed located at a lower topography within the Site. The high permeability of the sandy soil substantially prevents the pooling and flow of surface water throughout the Site.</p> <p>The Site's original Mining and Rehabilitation Program was submitted 26/03/2003. The lease for the EML is dated effective as of 24/12/2003 and the <i>Natural Resource Management Act 2004</i> commenced 5 August 2004. Therefore, a Water Affecting Activities application and permit are not required as the new activities remain outside of 10 metres of the watercourse.</p> <p>Consultation undertaken with the Murraylands and Riverland Landscape Board confirmed the Site does not require a Water Affecting Activities permit. This correspondence covered the proposed quarry development and rehabilitation plans and the surface water and erosion management plan (sediment basins north and south).</p> <p>The Site's current approval outlined extraction south of the creek line, within the creek bed and alluvial banks of the creek to extract loam and sand and activities outside of the creek line are planned to continue and be rehabilitated as areas become terminal.</p> <p>A desktop Surface Water assessment was undertaken by Groundwork Plus and is provided as Attachment 3: Surface Water Assessment (Quantity and Quality).</p>
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	<p>As the southern area can be subjected to surface water flows during high rainfall events, a diversion bund will be created along the southern side of the southern pit (South Pit) to ensure offsite discharge does not occur. The Site naturally drains towards the creek and this will not be impeded.</p> <p>The Site has previously created levees to redirect flows and stored topsoil in bunds along the south and northern boundary, therefore bunding of overburden and topsoil (if any is able to be reserved) remains consistent with these activities.</p> <p>There has been no throughflow or surface water leaving the area of operations in recent history. The section of creek that runs towards the eastern boundary of the Site has not been observed to flow during ephemeral creek flows in 2010 and 2021.</p>																				
<p>1.7 Weeds and pests</p>	<p>The results of a site inspection by Groundwork Plus are provided within Attachment 4: Native Vegetation and Weed Summary.</p> <p>No Weeds of National Significance, nor Buffel grass or <i>Phytophthora</i> records were found on or adjacent to EML6140 as part of a <i>NatureMaps</i> (2024) search by Groundwork Plus.</p> <hr/> <p>A search of the database <i>NatureMaps</i> (2024), identified forty-two (42) introduced species as possibly occurring within EML6140 and the surrounding three (3) km.</p> <p>The site visit by a Groundwork Plus native vegetation consultant (August 2024) determined several declared weeds were present within the area described above, namely:</p> <ul style="list-style-type: none"> • African boxthorn – <i>Lycium ferocissimum</i> • Salvation Jane – <i>Echium plantagineum</i> • Prickly Pear – <i>Opuntia humifusa</i> <p>Attachment 4: Native Vegetation and Weed Summary includes a map showing the locations of declared weeds within EML6140 at the time of the survey:</p> <ul style="list-style-type: none"> • 5227.DRG.011 - Declared Weeds. <p>Other weeds observed on EML 6140 (and the balance of the property) and recorded by Longs in the Mine Logbook include:</p> <p><u>Weed species:</u></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Ice weed</td> <td style="width: 50%;"><i>Mesembryanthemum crystallinum</i></td> </tr> <tr> <td>Onion weed</td> <td><i>Asphodelus fistulosus</i></td> </tr> <tr> <td>Wild turnip</td> <td><i>Brassica tournefortii</i></td> </tr> <tr> <td>Cape weed</td> <td><i>Arctotheca calendula</i></td> </tr> <tr> <td>Star (stemless/horse) thistle</td> <td><i>Onopordum acaulon</i></td> </tr> <tr> <td>Burr medic</td> <td><i>Medicago polymorpha</i></td> </tr> <tr> <td>Narrow leaf clover</td> <td><i>Trifolium angustifolium</i></td> </tr> <tr> <td>Dandelion</td> <td><i>Taraxacum officinale</i></td> </tr> <tr> <td>Cut leaf heron's bill</td> <td><i>Erodium cicutarium</i> occurrences</td> </tr> <tr> <td>Paddy melon</td> <td><i>Citrullus amarus</i></td> </tr> </table>	Ice weed	<i>Mesembryanthemum crystallinum</i>	Onion weed	<i>Asphodelus fistulosus</i>	Wild turnip	<i>Brassica tournefortii</i>	Cape weed	<i>Arctotheca calendula</i>	Star (stemless/horse) thistle	<i>Onopordum acaulon</i>	Burr medic	<i>Medicago polymorpha</i>	Narrow leaf clover	<i>Trifolium angustifolium</i>	Dandelion	<i>Taraxacum officinale</i>	Cut leaf heron's bill	<i>Erodium cicutarium</i> occurrences	Paddy melon	<i>Citrullus amarus</i>
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	<p>Roly Poly / Tumbleweed <i>Amaranthus albus</i> (Sea) barley grass <i>Hordeum marinum</i> Annual veldt grass <i>Erharta longiflora</i></p> <hr/> <p>As the majority of the land that is not subject to mining is cropped and grazed, it is subject to regular pest and weed management activities.</p> <p>Longs undertakes regular targeted spraying within the mining operations area to control weeds to reduce the chance of weed seeds being transmitted to the products in stockpiles that are to be sold.</p> <p>The declared weeds described above have been physically removed.</p> <p>EML6140 is not fenced from the balance of the farming property.</p> <p>The following vertebrate pests have been observed on EML 6140 (and the balance of the property) and recorded in the Mine Logbook:</p> <p><u>Pest species:</u></p> <p>Wild dog <i>Canis lupus familiaris</i> Fox <i>Vulpes vulpes</i> European hare <i>Lepus capensis</i> Rabbit <i>Oryctolagus cuniculus</i> Common starling <i>Sturnus vulgaris</i></p>
<p>1.8 Native Vegetation</p>	<p>A site visit by a Groundwork Plus native vegetation consultant found one (1) native vegetation association within EML 6140:</p> <ul style="list-style-type: none"> • <i>Eucalyptus odorata</i> very open woodland over <i>Rhagodia spinescens</i> +/- <i>Enchylaena tomentosa</i> shrub understorey. <p>This association is heavily modified through grazing and cropping and is located outside of the current extraction area.</p> <hr/> <p>Attachment 4: Native Vegetation and Weed Summary includes a map showing the locations of this association within EML6140:</p> <ul style="list-style-type: none"> • 5227.DRG.010 – Vegetation. <p>Native vegetation is situated outside of the current and planned extraction locations and will not be impacted.</p> <hr/> <p>Other vegetation remaining within EML6140 comprises exotic grassland with emergent <i>Acacia</i> spp. shrubs which have grown since historical cropping and grazing disturbance.</p>
<p>1.9 Native fauna</p>	<p>A search of the Atlas of Living Australia database indicated that the following native fauna may be present in the area:</p> <p>Western grey kangaroo <i>Macropus fuliginosis</i> Little Raven <i>Corvus mellori</i> Galah <i>Eolophus roseicapilla</i> Australian Magpie <i>Gymnorhina tibicen</i> Magpie-lark <i>Grallina cyanoleuca</i> Whistling Kite <i>Haliastur sphenurus</i></p>

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	<p>White-plumed honeyeater <i>Ptilotula penicillate</i> New Holland honeyeater <i>Phylidonyris novaehollandiae</i> Willie wagtail <i>Rhiphidura leucophrys</i> House sparrow <i>Passer domesticus</i> Rock dove <i>Columba livia</i> Crested Pigeon <i>Ocyphaps lophotes</i> Yellow rumped thornbill <i>Acanthiza chrysorrhoa</i> Red wattlebird <i>Anthochaera carunculata</i> Spiny-cheeked honeyeater <i>Acanthagenys rufogularis</i> Adelaide rosella <i>Ptyercus elegans subadelaidae</i> Dusky woodswallow <i>Artamus cyanopterus</i> Brown falcon <i>Falco berigora</i> Nankeen Kestrel <i>Falco cenchroides cenchroides</i> Black shouldered Kite <i>Elanus axillaris</i> Grey Teal <i>Anas gracilis</i></p>
	<p>An <i>Environment Protection and Biodiversity Conservation Act 1999</i> Protected Matters search report is included at Attachment 4: Native Vegetation and Weed Summary.</p>
	<p>In addition to the above, a <i>NatureMaps (2024)</i> search indicated a further five (5) threatened fauna species and one (1) threatened flora species was recorded in the same locus in the preceding 20 years.</p> <p>The Threatened Species List is included in the Groundwork Plus report in Attachment 4: Native Vegetation and Weed Summary which show 19 threatened fauna species and 13 threatened flora species that may occur in or have habitat within five (5) km of the site.</p> <p>The site visit by Groundwork Plus did not identify any of the listed threatened fauna or flora species or any additional species with this status.</p> <p>It was noted that the site is heavily modified and fragmented from historic agricultural and quarrying activities. None of the vegetation was considered to be critical habitat for any of the listed threatened species.</p>

Section 2: Mining Operations

2 Mining Operations													
2.1 Resource description, production and mine life.	<p>The local geology is shown at Attachment 1:</p> <ul style="list-style-type: none"> • 5227.DRG.010 – Regional Geology Map. 												
	<p>Following is a geological description of the resource:</p> <p>The resource/commodity from the SA Commodity List being extracted and sold: sand – garden/filling sand and packing sand for pipelines/trenches (TS-0613a).</p> <p>The resource is screened to remove coarse sand and a natural gravel (rock blend) that is produced in small quantities and sold for landscaping. The target product is a sandy loam sold for use in gardens. Heavier sandy loam (with a higher clay content) is not suitable for sale for gardens and is sold as filling sand.</p>												
	<p>The mined resource and its by-products have been used for the following products, end use:</p> <ul style="list-style-type: none"> • gardening (professional and hobby), topdressing including race course maintenance, construction (including trenching) and landscaping. 												
	<p>Statement of the estimated remaining resource or reserve and details of the basis of this estimate:</p> <p>A total available resource of 193,730 tonnes has been estimated by Groundwork Plus based on a product <i>in situ</i> density of 1.3 t per cubic metre, as outlined in Table 2 below.</p> <p style="text-align: center;">Table 2. Estimated resource volume/tonnage</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Volume cubic metres)</th> <th style="text-align: center;">Tonnes (t)</th> </tr> </thead> <tbody> <tr> <td>North Pit</td> <td style="text-align: center;">134,690</td> <td style="text-align: center;">175,098</td> </tr> <tr> <td>South Pit</td> <td style="text-align: center;">14,334</td> <td style="text-align: center;">18,635</td> </tr> <tr> <td>Total</td> <td style="text-align: center;">149,025</td> <td style="text-align: center;">193,733</td> </tr> </tbody> </table> <p>The pit design has considered the most current topographical data captured by UAV on 7 February 2024 and the staged pit designs have been calculated using Surpac and AutoCAD software. Volume calculations were made based on areas of extraction and depth to 3.5 metres, the projected maximum extraction depth proposed by Longs.</p> <p>The gravel yield varies considerably, depending on where the resource is extracted from i.e. there is no consistent production rate. Based on soil pits dug by Longs, the South Pit is consistently sandy and expected to yield no gravel and the North Pit is likely to yield some gravel. For the sand and gravel products described above, and using the historic ratio of gravel to other products, the estimated yields from each pit over their</p>		Volume cubic metres)	Tonnes (t)	North Pit	134,690	175,098	South Pit	14,334	18,635	Total	149,025	193,733
	Volume cubic metres)	Tonnes (t)											
North Pit	134,690	175,098											
South Pit	14,334	18,635											
Total	149,025	193,733											

2 Mining Operations

lifetimes are shown in Table 3 below. These are subject to market demand and provided for general indication only.

Table 3. Estimated resource volume/tonnage over time

	Volume cubic metres)	Tonnes (t)
North pit	134,690	175,098
South pit	14,334	18,635
Total	149,025	193,733

Year / Subtotal (t)	Pit	Sand (all types)	Gravel
2025	North	8,700	50
8,750	South	0	0
2026	North	8,700	50
9,385	South	635	0
2027	North	8,700	50
9,750	South	1,000	0

As above, repeated ongoing to:

2043	North	8,700	50
9,750	South	1,000	0
2044	North	8,800	50
9,850	South	1,000	0
Totals	North Pit	174,100	1,000
	South Pit	18,635	0
193,735		192,735	1,000

EML6140 produces 15,000 to 30,000 tonnes per year depending on market demand. The annual production from EML6140 has been 24,800 tonnes per year (four-year average). Historical demand included several large contracts that are unlikely to recur. Projected demand going forward is estimated at around 10,000 t per year. Based on the estimates presented in Table 2 and projected demand, the life of this next stage of quarrying is approximately 20 years.

2 Mining Operations	
2.2 Processing	<p>Following is a description of the processing, which is limited to screening of the resource and differentiation in products.</p> <p>The resource is extracted via surface scraping using a front-end loader or excavator. The extracted resource is dry screened and differentiated into garden loam (the main sand product) and by-products (coarse sand and natural gravel).</p> <p>Blasting is not required for resource extraction.</p> <hr/> <p>The Site will operate two (2) pits. Refer Quarry Development Plan at Attachment 1: 5227.DRG.007AR1 – Quarry Development Plan. The South Pit will target fine trenching sand (TS601a). The North Pit will target garden (sandy) loam. Both pits will be extracted to a maximum depth of 3.5 metres below ground level, with a total of 5.09 ha planned for disturbance over the life of mine development.</p> <p>The North Pit is approximately 300 metres long and 230 metres wide at the longest points, approximately 4.43 ha total.</p> <p>The South Pit is approximately 100 metres long and 70 metres wide at the longest points, approximately 0.66 ha plus 1.63 ha of operational area adjacent to the South Pit for plant, stockpiles and operational activities.</p> <p>Extracted materials not suitable for sale are stockpiled to be used in rehabilitation.</p> <p>The operations will manage the Site such that the maximum disturbance area, including all extraction and operational areas and the overburden stockpiles will be less than three (3) ha.</p>
2.3 Product Transport	<p>The size of haulage trucks: truck and dog combinations – 25-38 tonne haulage capacity.</p> <p>The estimated truck movements per operational day: 1-2.</p> <hr/> <p>The following machinery is used to mine the site: excavator (Caterpillar 330F), front-end loaders (two Caterpillar 966H) and dozer (Caterpillar D6).</p> <p>No fixed plant, fuel or chemicals are stored on-site. Longs mobile service vehicle is used to refuel and maintain on-site machinery. This vehicle is returned to Longs headquarters depot after each trip.</p> <p>The screening plant in operation is a Terex Finlay 683 Supertrak fed by a hopper and three sized mesh screens. Products are distributed to stockpiles by conveyors, including a TC-65 tracked conveyor.</p> <hr/> <p>There is no fixed infrastructure on EML6140.</p> <hr/> <p>Products from EML6140 are transported to Longs depot in Murray Bridge for sale or onforwarding to customers in the Murraylands region or directly from the Site to customers.</p>

2 Mining Operations											
2.4 Water Use	The amount of water required for mine operations is: Nil.										
2.5 Mining and Rehabilitation Description	<p>A staged Mining Plan showing how mining and progressive rehabilitation will occur over the life of the mine is at Attachment 1 - Drawings comprising:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Drawing No.</th> <th>Title</th> </tr> </thead> <tbody> <tr> <td>5227.DRG.007AR2</td> <td>Quarry Development Plan</td> </tr> <tr> <td>5227.DRG.007BR2</td> <td>Progressive Extraction and Rehabilitation Plan</td> </tr> <tr> <td>5227.DRG.007CR1</td> <td>Quarry Development Plan North Pit Sections A-A' — B-B'</td> </tr> <tr> <td>5227.DRG.007DR1</td> <td>Quarry Development Plan South Pit Sections C-C' — D-D'</td> </tr> </tbody> </table> <p>These plans and details provided below demonstrate that there is a reasonable prospect that the land on which EML 6140 is located can continue to be mined effectively and efficiently.</p> <p>The proposed final depth of mining below the surrounding ground level is not greater than 3.5 metres.</p> <p>Rehabilitation will occur progressively to ensure that less than three (3) ha of land is uncovered at any one time.</p> <hr/> <p>Following is a description of how mining will occur over the life of the mine using a staged approach:</p> <p>Both the North Pit and the South Pit will be operated simultaneously as the target products have different markets. Progression and rate of extraction and rehabilitation will depend on market demand.</p> <p>An operational area in the vicinity of and between both pits, south of the creek line, will be maintained for plant storage and stockpiling of products.</p> <p>Attachment 1: DRG.007AR2 – Quarry Development Plan provides an overview of the two (2) pits, operational and rehabilitation areas. It shows historical disturbance areas that have undergone rehabilitation, those proposed for rehabilitation in the next stage and the staged extraction and rehabilitation of future extraction areas.</p> <p>Rehabilitation of historic mined and operational areas to the north of the haul road has been completed, totalling 3.56 ha. This included the use of overburden stored near the northern boundary.</p> <p>Rehabilitation areas of 0.4 ha and 0.42 ha to the north of and adjoining the haul road and the operational area, respectively, have been completed.</p>	Drawing No.	Title	5227.DRG.007AR2	Quarry Development Plan	5227.DRG.007BR2	Progressive Extraction and Rehabilitation Plan	5227.DRG.007CR1	Quarry Development Plan North Pit Sections A-A' — B-B'	5227.DRG.007DR1	Quarry Development Plan South Pit Sections C-C' — D-D'
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5227.DRG.007DR1	Quarry Development Plan South Pit Sections C-C' — D-D'										

2 Mining Operations

Current rehabilitation is underway within the 1.39 ha area immediately south of and adjoining the haul road, to the west of the active operational area. This work will be completed by the end of winter 2025.

The next stages of rehabilitation will be balanced against the opening of new extraction areas for both pit areas, depending on material being extracted.

Product stockpiles will be located within the operational area adjacent to the pits to facilitate loading of trucks accessing the operational area via the haul / access road and minimise impact on the Site.

As all plant is mobile, it will be moved to higher ground when each screening campaign is completed or when there is a threat of significant rainfall.

Attachment 1: DRG.007BR2 – Progressive Extraction and Rehabilitation Plan shows and outlines the progressive extraction and rehabilitation strategy for future works, in conjunction with the operational area of approximately 1.2 ha.

It includes a description of the conceptual staging of the pits, showing the sequential staging of extraction and rehabilitation activities and overburden storage areas.

Attachment 1: DRG.007AR2 – Quarry Development Plan shows historic operational areas that are currently being rehabilitated in Stage 1 rehabilitation (darker green), totalling 2.2 ha. When rehabilitation is completed in winter 2025, this will provide capacity for new extraction areas to be utilised, while maintaining an operational area of approximately 1.2 ha.

All operations on EML6140 will maintain a five (5) metre buffer/offset from the drip line of trees.

South Pit

Extraction of sand will commence to develop a sand pit to the south / south-east of the existing extraction area to a depth not greater than 3.5 metres below the surface. The direction of extraction is shown by arrows and extraction will continue to the southern end of the pit as shown.

New ground will be exposed and managed in conjunction with the North Pit to ensure no more than three (3) ha of open ground and operational areas are exposed at any time.

Pit edges will be extracted to a batter of 1V:4H. As areas become terminal, rehabilitation activities will be commenced with the levelling and battering of the area, spreading of clay overburden and stabilisation through spreading of pasture grasses and promotion of natural revegetation, as is occurring naturally in parts of the creek bed.

There is no topsoil, as such, to stockpile; however, heavy clay not suitable for sale will be stored to the south of the active extraction area forming the diversion bund.

2 Mining Operations	
	<p>A sediment basin will be constructed within the extraction area as shown in Attachment 1: 5227.DRG.006R3 – Erosion and Sediment Control Plan.</p> <p>Construction of the 1V:4H batter and development of perimeter bunding will redirect any surface water flow within the extraction areas into the sediment basin within the pit floor. The sediment basin will be progressively constructed in line with quarry development, to remain within the lowest section of the pit.</p> <p>As demonstrated by the major flood event in 2021 and through knowledge obtained from past management, any surface water within the Site that does not infiltrate the sandy profile, is likely to pond within the sediment basin. No surface water throughflow is expected. The operations area topography will result in flows from this area being directed in the sediment basin in the south pit. Additional rehabilitation via battering of the northern part of the operational area will assist with this redirection.</p>
	<p><u>North Pit</u></p> <p>Refer Attachment 1: DRG.007BR2 – Progressive Extraction and Rehabilitation Plan.</p> <p>The North pit is located to the north of the creek line.</p> <p>Extraction targeting loam will commence from the south-western point of the North Pit, as shown, ending at the northern end of that pit, progressing generally north-east.</p> <p>A sediment basin will be constructed to a depth of one (1) metre with 1V:4H batters to collect any excess overland flow of surface water and to ensure that no offsite discharge occurs as per Attachment 1: DRG.006R2 – Erosion and Sediment Control Plan.</p> <p>The sediment basin will be relocated as new areas are open to the north-east of the North Pit.</p> <p>New ground will be exposed to ensure no more than three (3) ha of open ground and operational areas are exposed at any time.</p> <p>There is no topsoil, as such, to stockpile; however, heavier clay not suitable for sale will be stored around the boundaries of the active extraction area in a diversion bund.</p>

	<p>Pit edges will be extracted to a batter of 1V:4H. As areas become terminal, rehabilitation activities will be commenced with the levelling and battering of the area, spreading of clay overburden and stabilisation through spreading of pasture grasses and promotion of natural revegetation, as is occurring naturally in parts of the creek bed now.</p> <p><u>Stockpiling</u></p> <p>There is no discrete topsoil on the Site. Garden loam is the main product targeted. Heavy clay is not sold and is stored adjacent to active extraction areas as shown on Attachment 1: Drawing No. DRG.007AR2 – Quarry Development Plan in the form of diversion bunds. Any other heavy clay will be stored in a single location and used in progressive rehabilitation.</p> <p>Product stockpiles will be stored in the operational area between the two (2) pits, up to six (6) metres in height.</p> <p>Generally, up to 1,500 T of loam will be the maximum amount stockpiled after each screening campaign involving 1-2 days of screening operations.</p>						
	<p><u>Erosion and Sediment Management</u></p> <p>As outlined in Attachment 1: Drawing No. DRG.004 – Topographic Map, the topography of the site generally slopes west to east and inwards towards the creek line, with the main body of the creek in the central part of the Site located at a relatively flat elevation. Following rainfall events over the preceding two decades, surface water has been retained within the Site. It has evaporated naturally or been absorbed into the sandy profile. During a flash flood event in September 2021, the operational area was flooded to approximately 3 metres and there was no surface water throughflow to the eastern boundary; all water was retained within the Site through infiltration or evaporated.</p> <p>As the South and North Pits are developed, a sediment basin will be created within each area. Any surface waters will divert into this pit where it will evaporate naturally or be absorbed into the sandy soil profile.</p> <p>Diversion bunding will also be created using heavy clay soil around the edge of each pit, ensuring all flows are directed to the pit floors. This will prevent surface water discharge from the quarry pits. Refer Attachment 1: Drawing No. DRG.006R3 – Erosion and Sediment Control Plan.</p>						
	<p>Following is a description of the post mining land use and landform. Refer to the following drawings at Attachment 1 - Drawings:</p> <table border="1" data-bbox="505 1627 1304 1845"> <thead> <tr> <th data-bbox="505 1627 756 1692">Drawing No.</th> <th data-bbox="756 1627 1304 1692">Title</th> </tr> </thead> <tbody> <tr> <td data-bbox="505 1692 756 1757">5227.DRG.008A</td> <td data-bbox="756 1692 1304 1757">Conceptual Final Landform Plan</td> </tr> <tr> <td data-bbox="505 1757 756 1845">5227.DRG.008B</td> <td data-bbox="756 1757 1304 1845">Conceptual Final Landform Plan North Pit Section A-A' — B-B'</td> </tr> </tbody> </table>	Drawing No.	Title	5227.DRG.008A	Conceptual Final Landform Plan	5227.DRG.008B	Conceptual Final Landform Plan North Pit Section A-A' — B-B'
Drawing No.	Title						
5227.DRG.008A	Conceptual Final Landform Plan						
5227.DRG.008B	Conceptual Final Landform Plan North Pit Section A-A' — B-B'						

2 Mining Operations		
	5227.DRG.008C	Conceptual Final Landform Plan South Pit Section C-C' — D-D'
	5227.DRG.009	Quarry Development Plan Cross-section
<p>The final end land use will be agricultural land uses and regeneration of native vegetation within and along the creek line.</p> <p>Part of the rehabilitated land on the northern boundary of the Site (shown in lighter green on Attachment 1: Drawing No. DRG007AR2 - Quarry Development Plan), has been returned to farming land use.</p>		
<p>Battering will not exceed a 1V:4H gradient to allow agricultural land uses to follow the completion of extraction activities. As areas become terminal, rehabilitation activities will be commenced with the levelling and battering of the area, spreading of any clay overburden and stabilisation through spreading of pasture grasses and promotion of natural revegetation, as is occurring now naturally, in areas along the creek. Pending the outcome of natural revegetation, seed harvesting from existing species, growing of seedlings and replanting will be considered using a local plant grower.</p>		
2.6 Hours of operation	<p><input type="checkbox"/> Regular <input checked="" type="checkbox"/> Campaign</p> <p>Mining will occur within the following operating hours:</p> <p>Monday – Friday: 7.00 am to 5.30 pm.</p> <p>Saturday: 7.00 am to 5.30 pm.</p> <p>Sunday: Nil. No mining operations; however, refuelling, Site inspections and maintenance of equipment may occur.</p> <p>Public Holidays: Nil.</p>	

Section 3: Consultation

The following additional consultation occurred post lease grant:

Adjacent land owner: Grant Wagenecht (sheep and cropping farmer) including as farm manager on land on which the Site is located.

Date of consultation: Ongoing relationship.

Issue(s) raised: No issues were raised.

Resolution(s) proposed: None required.

Adjoining owner: Gordon McKerlie (vegetable farmer - northern boundary).

Date of consultation: Ongoing relationship.

Issue(s) raised: No issues were raised.

Resolution(s) proposed: None required.

Adjoining owner: Bob Hutchison (sheep and cropping farmer - eastern boundary)

Date of consultation: Ongoing relationship.

Issue(s) raised: No issues were raised.

Resolution(s) proposed: None required.

Local Council: Rural City of Murray Bridge (Regional Council)

Date of consultation: July 2024

Issue(s) raised: No issues were raised by Council.

Resolution(s) proposed: None required.

Section 4: Management of Environmental Impacts

This section sets out the environmental outcomes, measurement criteria and strategies as per section 70B of the *Mining Act 1971* and Regulation 63 of the *Mining Regulations 2020*.

4.1 Heritage	
<p>Outcome</p> <p>No damage, disturbance or interference to Aboriginal or Non-Aboriginal heritage sites, objects or remains unless it is authorised under the relevant legislation.</p>	<p>Measurement Criteria</p> <p>Production records and Mine Logbook will demonstrate that upon discovery within EML6140 of any possible Aboriginal or Non-Aboriginal:</p> <ul style="list-style-type: none"> • sites of significance; • objects; • remains; <p>that work ceased until the relevant authorities were notified and work recommenced only once authorisation was received.</p>
<p>Control and Management Strategies</p> <p>4.1-1 All contractors and employees operating within EML6140 will understand their obligations in regard to the <i>Aboriginal Heritage Act 1988</i> with regards to the discovery of Aboriginal sites, objects or remains and the <i>Heritage Places Act 1993</i> with regards to the discovery of places or objects of significance.</p> <p>4.1-2 As a result of an induction process, all contractors/employees operating within EML6140 will be aware of the requirement to cease extraction immediately in the vicinity of any possible Aboriginal or Non-Aboriginal heritage sites, objects and/or remains and to report such findings to Longs Sands and Metal Pty Ltd in the first instance.</p>	

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4.2 Traffic

Outcome

No traffic accidents involving members of the public and mine related traffic that could have been reasonably prevented by Longs Sands and Metal Pty Ltd.

Measurement Criteria

Any traffic accidents involving the public between the Reedy Creek Road and the EML6140 access point are recorded in the Mine Logbook. All accidents will be investigated by a suitably qualified independent third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the accident could not have been reasonably prevented by Longs Sands and Metal Pty Ltd.

Control and Management Strategies

- 4.2-1 As a result of an induction process, all contractors and employees operating within EML6140 will be aware of:
- the dangers that trucks and mining vehicles entering public roads can present; and
 - the requirement to immediately report any traffic accidents to Longs Sands and Metal Pty Ltd to ensure a suitable investigation is completed within the agreed timeframe.
- 4.2-2 Longs Sands and Metal Pty Ltd will report any significant accidents involving its haulage vehicles to SA Police.
- 4.2-3 All Longs Sands and Metal Pty Ltd haulage vehicles are fitted with front-facing cameras.
- 4.2-4 Trucks on the haul road will be limited to speeds of 30 km per hour and all contractors and employees operating within EML6140 will adopt a call in / call out procedure using the Longs Sands and Metal Pty Ltd UHF channel.

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4.3 Public Safety (Operation of the Mine)	
Outcome No public injuries and/or deaths resulting from unauthorised entry to the site that could have been reasonably prevented by Longs Sands and Metal Pty Ltd.	Measurement Criteria Any public injuries and/or deaths resulting from unauthorised access to the mine site are recorded in the Mine Logbook and investigated by a suitably qualified third party within one calendar month (or other time as agreed with Mining Regulator) and the results of the investigation show that the incident could not have been reasonably prevented by Longs Sands and Metal Pty Ltd.
Control and Management Strategies (Operation of the Mine)	
4.3-1 The access gate to the haul road will continue to be locked except when quarrying and haulage operations are underway.	
4.3-2 Any unauthorised access to EML6140 and/or tampering with equipment will constitute trespass and be reported to SA Police.	
4.3-3 All contractors and employees operating within the tenement will be aware of the requirement to report any trespass activity to Longs Sands and Metal Pty Ltd.	
4.3-4 Any significant trespass incidents will also be reported to the Mining Regulator by Longs Sands and Metal Pty Ltd.	

4.3a Public Safety (Post Mine Completion)	
Outcome The risks to the health and safety of the public so far as it may be affected by mining operations or mining related activities are as low as reasonably practicable.	Measurement Criteria Following final rehabilitation work an appropriate person will inspect the Site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan.
Control and Management Strategies (Post Mine Completion)	
4.3a-1 Mining operations will be progressively rehabilitated as per the Mining Plan.	
4.3a-2 All plant and equipment will be removed from the Site at completion of mining operations.	

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4.4 Weeds and Pests

Outcome

No introduction of new species of weeds, or pests (including feral animals), nor increase in abundance of existing weed or pest species.

Measurement Criteria

Records of annual inspections (in Spring) by Longs Sands and Metal Pty Ltd in the Mine Logbook will demonstrate no introduction of new weeds or pests and no increased abundance of existing weeds and pests.

Control and Management Strategies

- 4.4-1 Any weed spraying or pest animal control required will be conducted by a suitably experienced person, as required.
- 4.4-2 Declared weeds identified will be removed and recorded in the Mine Logbook.
- 4.4-3 An annual inspection of weeds will be undertaken by Longs Sands and Metal Pty Ltd (in Spring) and recorded in the Mine Logbook.
- 4.4-4 If an annual inspection demonstrates an introduction of new declared weeds or pests then Longs Sands and Metal Pty Ltd will undertake weed control and further inspections until corrected.
- 4.4-5 Any corrective management actions undertaken will be recorded in the Mine Logbook reported to the Mining Regulator in the annual compliance report for EML6140.

4.5 Soil

Outcome

The existing (pre-mining) soil quality and quantity is maintained.

Measurement Criteria

Annual inspection records in the Mine Logbook of all soil stockpiles will demonstrate that all stockpiles are less high than the surrounding landform.

Control and Management Strategies

- 4.5-1 Overburden will be stockpiled/stored to preserve seed stock and micro-organism function.
- 4.5-2 Stockpiles will be located and managed within EML6140 to prevent wind erosion and subsequent depletion.

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4.6 Waste	
Outcome Any commercial, industrial and domestic waste is disposed of in accordance with relevant legislation.	Measurement Criteria Waste disposal receipts demonstrate that all commercial, industrial (including contaminated soil) and domestic waste within EML6140 was disposed of in accordance with <i>Environment Protection Act 1993</i> requirements.
Control and Management Strategies	
4.6-1	Any minor general rubbish brought onto EML6140 will be removed on a daily basis and disposed of into general waste by the contractor, employee or Long Sands and Metal Pty Ltd.
4.6-2	No fill from outside sources will be received on EML6140 unless agreed by the Mining Regulator.
4.6.3	There will be no permanent storage of fuel on the Site.
4.6.4	Spill kits will be available for the clean-up of minor spills or leaks and will be appropriately disposed of.

4.7 Noise	
Outcome No public nuisance impacts from noise as a result of mining operations.	Measurement Criteria Records in the Mine Logbook will demonstrate that any noise complaints received were resolved with the complainant within 48 hours (or other time as agreed with Mining Regulator). If complaints are not resolved, Longs Sands and Metal Pty Ltd will conduct noise monitoring at the sensitive receptor to demonstrate noise emissions comply with the <i>Environment Protection (Commercial and Industrial Noise) Policy 2023</i> .
Control and Management Strategies	
4.7-1	Adequate muffler systems will be fitted and maintained on all machinery operating on EML6140.
4.7-2	Any complaints and an outline of the management of those complaints will be registered in the Mine Logbook.

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4.8 Air Quality

Outcome

No public health and/or nuisance impacts from dust generated by mining operations.

Measurement Criteria

Records in the Mine Logbook will demonstrate that any dust complaints received were acknowledged within 48 hours and resolved with the complainant within 7 days (or other time as agreed by the Mining Regulator).

If complaints are not resolved to the satisfaction of the Mining Regulation, air quality monitoring is to occur at locations, and using methods, as agreed with the Mining Regulator, to demonstrate:

- PM10* ground level concentrations leaving the tenement when measured over a 24-hour period (midnight to midnight) comply with the Environment Protection (Air Quality) Policy 2016; and/or,
- dust deposition leaving the tenement does not exceed 4g/m²/month.

**Particulate matter with an aerodynamic diameter of ten micrometres or less*

Control and Management Strategies

4.8-1 Rehabilitation will occur progressively in accordance with the Mining Plan.

4.8-2 All loaded trucks leaving EML6140 will be covered.

4.8-3 Mining will not occur during extreme wind days (i.e. dry conditions and wind speeds over 50 km/hr).

4.8-4 If excessive dust is generated on the haul road, the road will be watered with a water truck to control that dust.

4.8-5 All contractors and employees will be aware of the requirement to report any dust complaints to Longs Sand and Metal Pty Ltd.

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4.9 Groundwater	
Outcome No adverse impact to groundwater caused by mining operations.	Measurement Criteria Annual inspection or survey (as agreed with Mining Regulator) of the pit floor recorded in the Mine Logbook will demonstrate that mining operations do not exceed the mine depth levels stated in the Mining Plan.
Control and Management Strategies 4.9-1 Mining (quarrying of sand) will be undertaken in accordance with the Mining Plan. 4.9-2 No mining will be undertaken within 2 metres of the estimated highest seasonal groundwater level.	

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4.10 Surface Water

Outcome

No adverse impact to surface water quality and water dependent ecosystems on or off the land as a result of any contamination and sedimentation caused by mining operations.

Measurement Criteria

Photographic records in the Mine Logbook, following rainfall events resulting in run-off, will demonstrate that surface water coming into contact with mining operations is retained within EML6140.

Control and Management Strategies

- 4.10-1 Rehabilitation will occur progressively in accordance with the Mining Plan.
- 4.10-2 At least annually, the Mine Logbook will demonstrate the direction of surface water run-off through photographic evidence taken by Longs Sands and Metal Pty Ltd.
- 4.10-3 Any material amount of surface water impacted by mining operations will be captured and retained within EML6140 within the sediment basins located within the North and South pits.
- 4.10-4 Adherence to **Attachment 1 - Drawing No. 5277.DRG.006R3 – Erosion and Sediment Control Plan** to develop sediment basins in line with progressive quarry development and to the capacities listed on the plan.
- 4.10-5 Development of diversion bunds to redirect surface water flows from active extraction areas into sediment basin and prevent off-site flows.
- 4.10-6 Revegetation of rehabilitated areas with replanting of Site-specific native flora species or seed suitable for farming.
- 4.10-7 Adherence to the quarry development plans to ensure no new quarry development occurs within the Salt Creek flow path.

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4.11 Visual Amenity

Outcome

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

Measurement Criteria

Annual site inspection records in the Mine Logbook demonstrate that:

- the area of land disturbed by mining operations does not exceed 3 hectares; and
- progressive and final rehabilitation has been completed in accordance with the approved Mining Plan.

Control and Management Strategies

- 4.11-1 Mining (quarrying of sand) will be undertaken in accordance with the Mining Plan.
- 4.11-2 The operations of EML6140 are managed so that the majority of operations remain not visible from the Reedy Creek Road access point.
- 4.11-3 Mining operations will be progressively rehabilitated as per the Mining Plan.
- 4.11-4 The maximum area of un-rehabilitated land will be less than 3 hectares at any one time.
- 4.11-5 Final rehabilitation will ensure the resulting landform merges with the surrounding land to enable the post mining land use.

4.12 Post Mining Land Use

Outcome

All land disturbed by mining operations is rehabilitated to achieve the post mining land use.

Measurement Criteria

Following final rehabilitation work an appropriate person will inspect the site and verify in a report (to be stored in the Mine Logbook) that final rehabilitation has been undertaken in accordance with the Mining Plan to achieve the approved post mining land use.

Control and Management Strategies

- 4.12-1 Mining operations will be progressively rehabilitated to achieve the post mining land use as per Mining Plan.
- 4.12-2 Mining and rehabilitation activities on EML6140 will be recorded in the Mine Logbook.
- 4.12-3 All plant and equipment will be removed from Site.

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4.13 Protection of Third-party Property, Infrastructure and Adjacent Land Use

Outcome

No unauthorised damage (including that caused by fire) to adjacent public or private property, infrastructure and adjacent land use.

Measurement Criteria

Any complaints of unauthorised damage to adjacent public or private property, infrastructure or impact to adjacent land use from mining operations will be recorded in the Mine Logbook at time of complaint and investigated within 7 business days (or other time as agreed with Mining Regulator) to show that the mine operator did not cause the damage or impact through mining operations.

Control and Management Strategies

- 4.13-1 Mining will be undertaken in accordance with the Mining Plan.
- 4.13-2 As a result of an induction process, all contractors and employees will be aware of the requirement to report any alleged infrastructure or property damage to Longs Sands and Metal Pty Ltd for investigation and resolution.
- 4.13-3 Fire extinguishers will be maintained within machinery to be deployed when required to prevent damage to property.
- 4.13-4 Longs will not operate machinery and equipment on days when daily temperatures predicted by the Bureau of Meteorology for the Pallamana locality exceed 38 C.
- 4.13-5 Longs will not operate machinery and equipment on days when a catastrophic fire danger has been declared.
- 4.13-6 At the end of each screening campaign when high rainfall is predicted for the Pallamana locality, mobile plant will be moved to a higher location above the creek line, within EML6140.

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4.14 Native Vegetation	
Outcome No loss of abundance or diversity of native vegetation on or off EML6140 through: <ul style="list-style-type: none">• clearance,• dust/contaminant deposition,• fire,• other damage.	Measurement Criteria Annual site survey/photographic evidence (stored in the Mine Logbook) will show no clearance of native vegetation identified and shown in the Mining Plan.
Control and Management Strategies 4.14-1 A buffer zone of a minimum 5 metres from the canopy drip line of native vegetation will be maintained and flagged during operations, and no excavation, stockpiling or other earthworks will be undertaken within this buffer zone.	

Section 5: Records

Records related to measurement criteria will be kept in a Mine Logbook. All records will be kept for the duration of EML6140.

Section 6: Lease Conditions

The following outlines how specific lease conditions, which are not outcomes, will be addressed:

Lease Condition	How Lease Condition Addressed in PEPR
First Schedule	
5. The lessee shall ensure that land disturbed by mining is rehabilitated progressively to achieve a regular landform, to minimise erosion, and return the land to cropping / grazing after use.	Section 2 Mining Operations describes progressive extraction and rehabilitation activities and final land use.
Second Schedule	
2. The lessee shall establish a Management Plan for the revegetation of native vegetation, which shall be incorporated into the program for mining and rehabilitation.	Vegetation is not planned to be removed as per Section 4.14 Native Vegetation, with five (5) m buffers from the drip line of trees to be established. Rehabilitation activities as outlined in Section 4.10 include rehabilitating the Site with a mixture of Site-specific native vegetation and/or seed suitable for farming as determined by the land owner.
3. The lessee shall ensure that all available topsoil is progressively stripped ahead of mining and shall be temporarily stockpiled, for use in rehabilitation of land disturbed by mining.	Section 2 Mining Operations describes progressive removal and storage of (limited availability) topsoil around the pit areas and reapplication during rehabilitation activities.
4. The lessee shall ensure that all terminal faces, are formed as part of mining to a gradient not steeper than 1 vertical to 4 horizontal and also conform to local topography and drainage system.	Section 2 Mining Operations describes quarry development and rehabilitation plans. All final landforms will be battered to 1V:4H and allow for natural drainage to continue to occur.
5. The lessee shall ensure that all employees and contractors on-site are fully aware of the requirement to operate in a manner that will minimise environmental impact, including weed seeds are not transported off-site, which shall be incorporated into the program for mining and rehabilitation, and shall	Section 4. 4 Weeds and Pests describes management and measurement criteria to mitigate risks. Haul vehicles will be confined to the haul road and operations area, minimising the possibility of transfer of weed seed off-Site by tyres.

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<p>ensure that all operations are carried out in an orderly and skilful manner.</p>	
<p>6. The lessee shall ensure that all land disturbed by mining is, progressively rehabilitated when practicable to do so and in accordance with appropriate seasonal conditions, progressively re-spread with topsoil and sown with a cover crop to prevent soil erosion, to the satisfaction of the Chief Inspector of Mines.</p>	<p>Section 4.10 outlines rehabilitation activities. Depending on the location of the rehabilitation, a couple of options such as collecting and replanting on Site-specific native plant species or sowing seed suitable for farming will be investigated as mining and rehabilitation progress.</p>
<p>7. The lessee shall ensure that all employees and contractors on-site are properly advised of the significance of Aboriginal heritage and culture and are to take due care to preserve all Aboriginal Site and Objects as defined by the <i>Aboriginal Heritage Act 1988</i>.</p>	<p>Refer to Section 4 Heritage regarding Longs employee obligations and requirements to report.</p>
<p>8. The lessee shall ensure all fixed fuel and liquid chemical storage is adequately bunded and lined to capture spillage and prevent an accidental release of product to the environment and a contingency plan in case of spillage or leakage submitted for approval to the Chief Inspector of Mines.</p>	<p>Refer to Section 4.6 Waste. No fuel or chemicals are stored on the Site.</p>
<p>9. The lessee shall ensure upon completion of mining operations, all plant and equipment and materials shall be removed from the Site and the land is rehabilitated, to the satisfaction of the Chief Inspector of Mines.</p>	<p>This is described in Section 4.12 Post Mining Land Use.</p>

Section 7: Operator Capability

I, the holder of EML6140, have the following technical, operational and financial capabilities and resources available for carrying out proposed mining operations. I assisted my father, Kevin Long (dec.) in the management of Longs mining tenements for over twenty years. I hold a Bachelor of Agricultural Science (Adel.) and over thirty years of experience in land and natural resource management in the Northern Territory and South Australia.

Longs Sands and Metal Pty Ltd is a family-owned business based in Murray Bridge which has been in operation for over 40 years. It has a long history of supplying products for major projects and makes its products available to customers in the Murraylands region at reasonable rates of supply and delivery.

In the last 5 years, a related body corporate or I have failed to comply with a provision of a corresponding Australian law or designated Australian Act in connection with authorised operations that resulted in:

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	The revocation or suspension of an authority to carry out authorised operations; or
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	A prosecution for an offence; or
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	The imposition of a penalty by a court; or
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	The issuing of a notice, direction or order that required the suspension or discontinuance of any authorised operations or
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	The rectification of any harm to the environment or the rehabilitation of any land, place or other aspect of the environment

Section 8: Tenement Holder Declaration

<input checked="" type="checkbox"/>	I have taken reasonable steps to review the information to ensure its accuracy and all statements made and information given in this application is true and correct.
<input checked="" type="checkbox"/>	I declare that the resource has been appropriately identified and estimated.
<input checked="" type="checkbox"/>	Based on the control strategies provided we consider that the environmental outcomes will be able to be achieved.

Signature: 

Print name: CHRISTINE LONG

Date: 7/8/2025

Position: Managing Director
(Director/Secretary)

Section 9: Attachments, including Maps and Plans**ATTACHMENT 1****Drawings**

Drawing No.	Name
5227.DRG.002	Site Location Plan
5227.DRG.003	Land Access Map
5227.DRG.004	Topographic Map
5227.DRG.006R3	Erosion and Sediment Control Plan
5227.DRG.007AR2	Quarry Development Plan
5227.DRG.007BR2	Progressive Extraction and Rehabilitation Plan
5227.DRG.007CR1	North Pit Sections A-A' & B-B'
5227.DRG.007DR1	South Pit Sections C-C' & D-D'
5227.DRG.008AR1	Conceptual Final Landform Plan
5227.DRG.008BR1	Conceptual Final Landform Plan North Pit Sections A-A' & B-B'
5227.DRG.008CR1	Conceptual Final Landform Plan South Pit Sections C-C' & D-D'
5227.DRG.009	Quarry Development Cross Section
5227.DRG.012	Regional Geology Map



REV	DESCRIPTION	DATE	BY

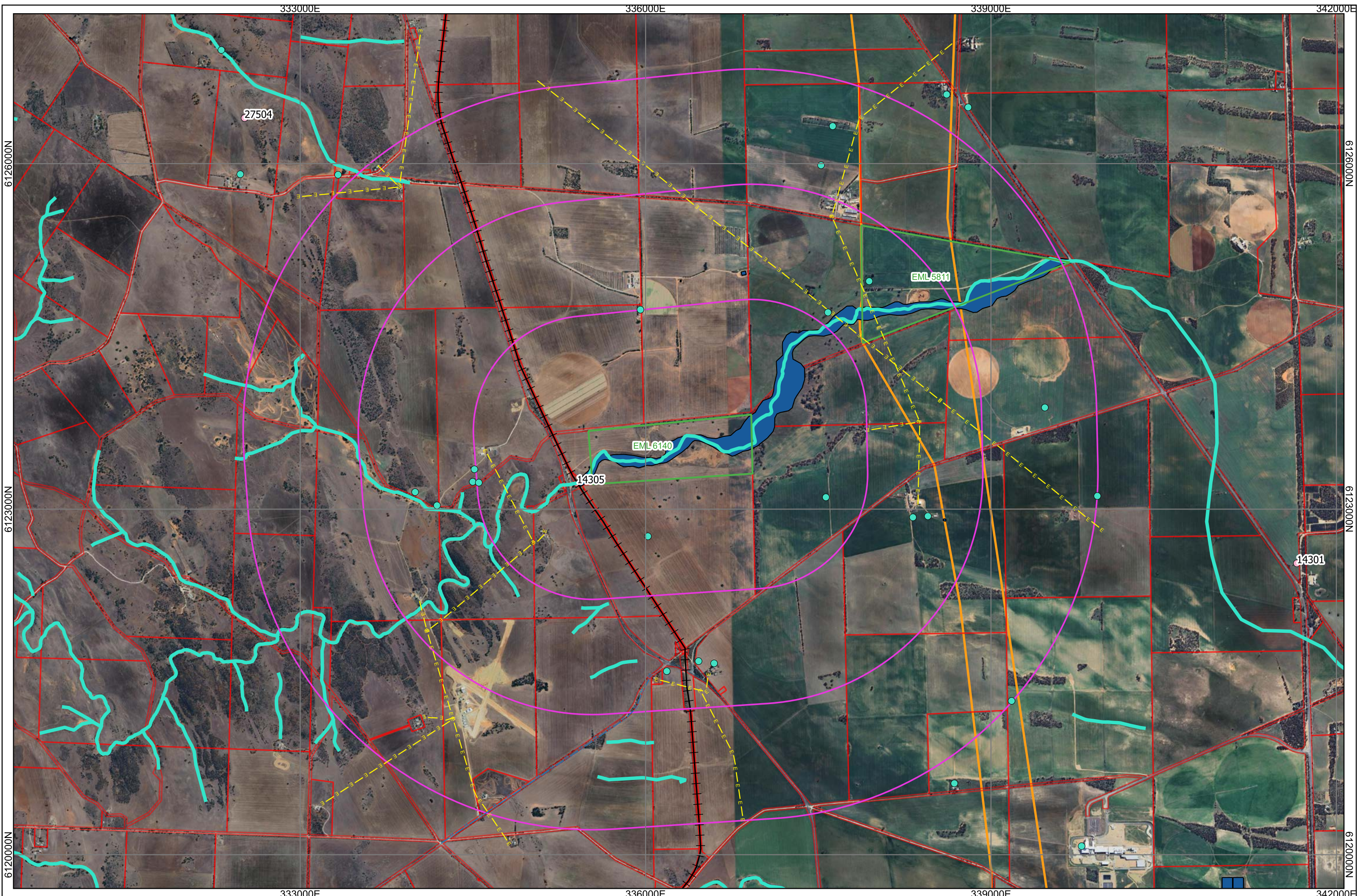
Legend:
 Extractive Mineral Leases
● Town Names
● Site Location

Data Sources:
 Photography: UAV Survey 2024-02-07; Google Satellite Imagery accessed: 15-February-2024
 Topography: UAV Survey 2024-02-07
 Cadastre: Data.sa.gov.au; Boundaries are Indicative only, not all boundaries
 Ecosystems: Other: SARIG 2024



PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

GROUNDWORK plus		SCALE: 1:300,000 <small>(When Printed On A3)</small>	DRAWING NUMBER: 5227.DRG.002	REVISION:
DATE: 15-February-2024	DRAWN: EP	DATUM: HORIZONTAL / VERTICAL / ZONE	EPSG:7854	
PRINTED: 15-February-2024	CHECKED: MJ	MGA / AHD / 54		



REV	DESCRIPTION	DATE	BY

Legend:

- Extractive Mineral Leases
- EML 6140
- pipelines
- Powerlines
- Railways_GDA2020
- SA Heritage Places Points
- Wells within 3 km
- Waterbodies
- Watermain
- Watercourses

PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

FILE: Land Access Map

GROUNDWORK plus

SCALE: 1:30,000
 0 100 200 300 400 m

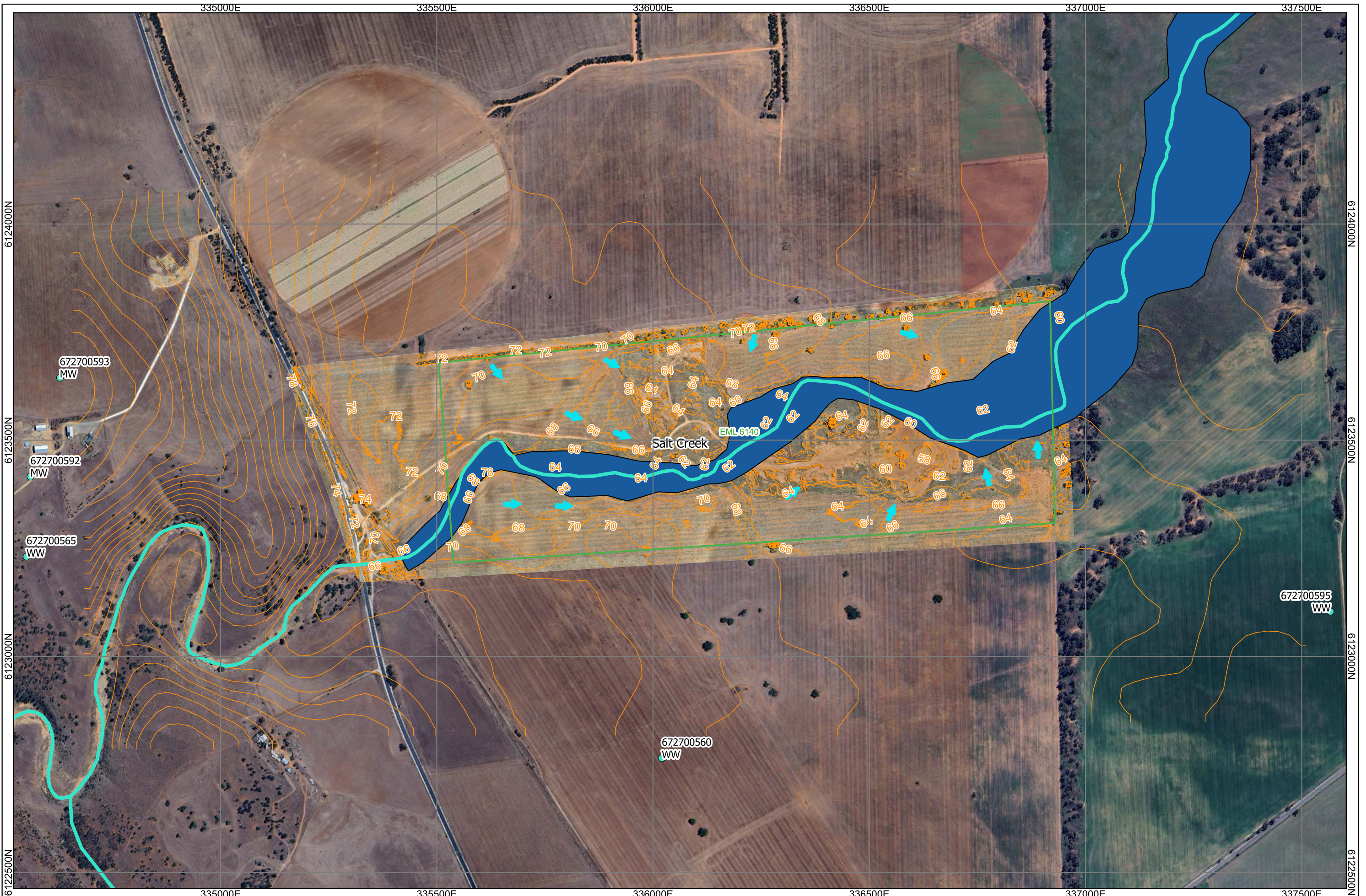
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DATE: 15-February-2024
 PRINTED: 15-February-2024

DRAWN: EP
 CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL / ZONE
 MGA / AHD / 54

Data Sources:
 Photography: UAV Survey 2024-03-07; Google Satellite Imagery accessed: 15-February-2024
 Topography: UAV Survey 2024-02-07
 Cadastre: Data.sa.gov.au; Boundaries are indicative only, not all boundaries
 Ecosystem: SARIG 2024



REV	DESCRIPTION	DATE	BY

Legend:

- Extractive Mineral Leases
- Water Catchment Boundaries
- Waterbodies
- Watercourses
- Water Wells

PROJECT: Long's Salt Creek

CLIENT: Long's Sand and Metal Pty Ltd

DATE: 01-July-2024

PRINTED: 01-July-2024

TITLE: Topographic Map

SCALE: 1:8,000

0 40 80 120 160 m

DRAWN: EP

CHECKED: MJ

DRAWING NUMBER: 5227.DRG.004

REVISION: EP

DATUM: HORIZONTAL / VERTICAL / ZONE

EPSG:7854

MGA / AHD / 54

Data Sources:
 *Photography: UAV Survey 2024-03-07; Google Satellite Imagery accessed: 01-July-2024
 Topography: UAV Survey 2024-02-07
 Cadastral: Data sa.gov.au; Boundaries are Indicative only, not all boundaries
 Ecosystem: Other: SARIG 2024



Legend:	
	Extractive Mineral Leases
	Q; Undifferentiated Quaternary rocks.
	Eeb; Sandstone, laminated, thick bedded, slumped, crossbedded, with minor siltstone interbeds. Widespread siltstone unit at base.
	Qp/ca; Undifferentiated Pleistocene calcrete.

REV	DESCRIPTION	DATE	BY

Data Sources:
 Photography: UAV Survey 2024-03-07; Google Satellite Imagery accessed: 01-July-2024
 Topography: UAV Survey 2024-02-07
 Cadastre: Data.sa.gov.au/Boundaries are Indicative only, not all boundaries
 Ecosystem: Other: SARIG.2024



PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

TITLE: Regional Geology Map

SCALE: 1:5,000
 0 20 40 60 80 m

GROUNDWORK PART OF SLR
 PH 481 3871 0411
 WWW.GROUNDWORKPLUS.COM.AU

DRAWING NUMBER: 5227.DRG.012
 REVISION: EP
 DATE: 01-July-2024
 PRINTED: 01-July-2024
 DRAWN: MJ
 CHECKED: MJ
 DATUM: HORIZONTAL / VERTICAL / ZONE: MGA / AHD / 54
 EPSG:7854

A maximum total area of 3ha may be open at all times with 1ha of active rehabilitation including active operations area.



	Volume (m ³)	Tonnes (t)
North Pit	134,690.4	175,097.5
South Pit	14,334.6	18,635.0
Total	149,025.0	193,732.5

REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/08/27	CP
2	Added Perimeter Bunding	2025/06/26	CP

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Topography: Cadastre
 Ecosystem: Other: © 2024 Microsoft Corporation; © 2024 Maxar; © CNES (2024) Distribution Airbus DS

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Legend:

- Extractive Minerals Lease
- Overburden Storage
- Extraction Area (5.09ha)
- Stockpiles
- Rehabilitation Area (4.95ha)
- Perimeter Bunding
- Active Area (1.63ha)
- Sediment Basin

Long's Salt Creek CLIENT: Long's Sand and Metal Pty Ltd	Quarry Development Plan TITLE:	SCALE: 1:5,000 0 100m DATE: 1 July 2025 PRINTED: 1 July 2025	DRAWING NUMBER: 5227.DRG.007A REVISION: 2 DATUM: HORIZONTAL / VERTICAL / ZONE GDA94 / MGA / AHD / 54
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FILE NAME: F:\Jobs\SAV\2025\5227 DRG\07R2 Quarry Development Plan.dwg
 CREATED: 1 July 2025
 JOB SUB #

A maximum total area of 3ha may be open at all times with 1ha of active rehabilitation including active operations area.



5m Offset from Trees

Future Extraction

Overburden Area

Extraction Area

Area Under Rehabilitation

Rehabilitation Area

5m Offset from Trees

- Legend:**
- Direction of Mining
 - Rehabilitated Area
 - Area Under Rehabilitation
 - Extraction Area
 - Overburden Area
 - Future Extraction Area
 - Sediment Basin

	Volume (m ³)	Tonnes (t)
North Pit	134,690.4	175,097.5
South Pit	14,334.6	18,635.0
Total	149,025.0	193,732.5

REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/06/27	CP
2	Added Labels for Extraction Stages	2025/06/26	CP

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Topography: Cadastre
 Ecosystem: Other: © 2024 Microsoft Corporation, © 2024 Maxar, © CNES (2024) Distribution Airbus DS

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PROJECT: Long's Salt Creek

CLIENT: Long's Sand and Metal Pty Ltd

GROUNDWORK PART OF SLR

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

TITLE: Progressive Extraction and Rehabilitation Plan

SCALE: 1:1,500
 0 30m

DRAWING NUMBER: 5227.DRG.007B
 REVISION: 2

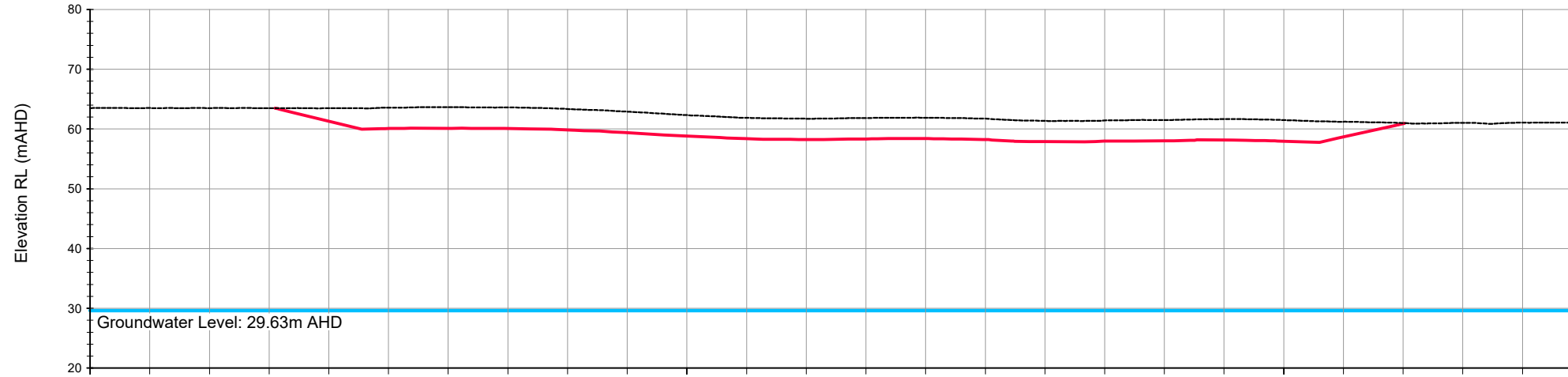
DATE: 1 July 2025
 PRINTED: 1 July 2025

DRAWN: CP
 CHECKED: EP

DATUM: HORIZONTAL / VERTICAL / ZONE
 GDA84 / MGA / AHD / 54

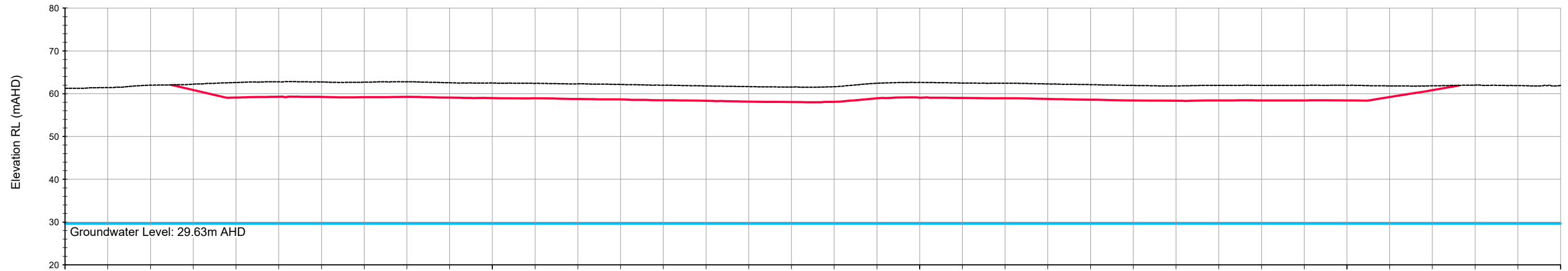
FILE NAME: F:\Jobs\SA\5227\Long's Sand and Metal_Salt Creek Sand Pit\Drawings\5227.DWG.007C Quarry Development Plan.dwg
 CREATED: 27 August 2024
 JOB SUB #

Section A-A'



Chainage	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
Existing Level	63.5	63.5	63.5	63.5	63.6	63.7	63.6	63.4	62.9	62.3	61.9	61.7	61.8	61.9	61.7	61.4	61.4	61.5	61.7	61.5	61.2	61.0	61.0	61.1	61.1
Design Level				61.3	60.1	60.1	60.1	59.8	59.4	58.8	58.4	58.2	58.3	58.4	58.2	57.9	58.0	58.0	58.2	58.0	58.7	60.9			
Pit Depth				2.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.5	0.1			

Section B-B'



Chainage	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
Existing Level	61.4	62.0	62.2	62.6	62.8	62.8	62.7	62.8	62.6	62.5	62.4	62.3	62.2	62.0	61.8	61.7	61.6	61.6	62.4	62.6	62.5	62.4	62.3	62.1	61.9	61.8	61.9	62.0	61.8	61.8	61.9	62.0	61.8	61.9	61.9
Design Level			60.9	59.1	59.3	59.2	59.2	59.3	59.1	59.0	58.9	58.8	58.7	58.5	58.3	58.2	58.0	58.1	58.9	59.1	59.0	59.0	58.8	58.6	58.4	58.3	58.4	58.4	58.4	59.2	60.8				
Pit Depth			1.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.6	1.0					

REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/08/27	CP

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Cadastre:
 Ecosystem:
 Other:

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Legend:
 - - - Existing Ground Surface
 — Pit Design Surface
 — Groundwater Surface



PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

TITLE: Quarry Development Plan
 North Pit Sections A-A' & B-B'

SCALE: 1:1,000
 0 20m

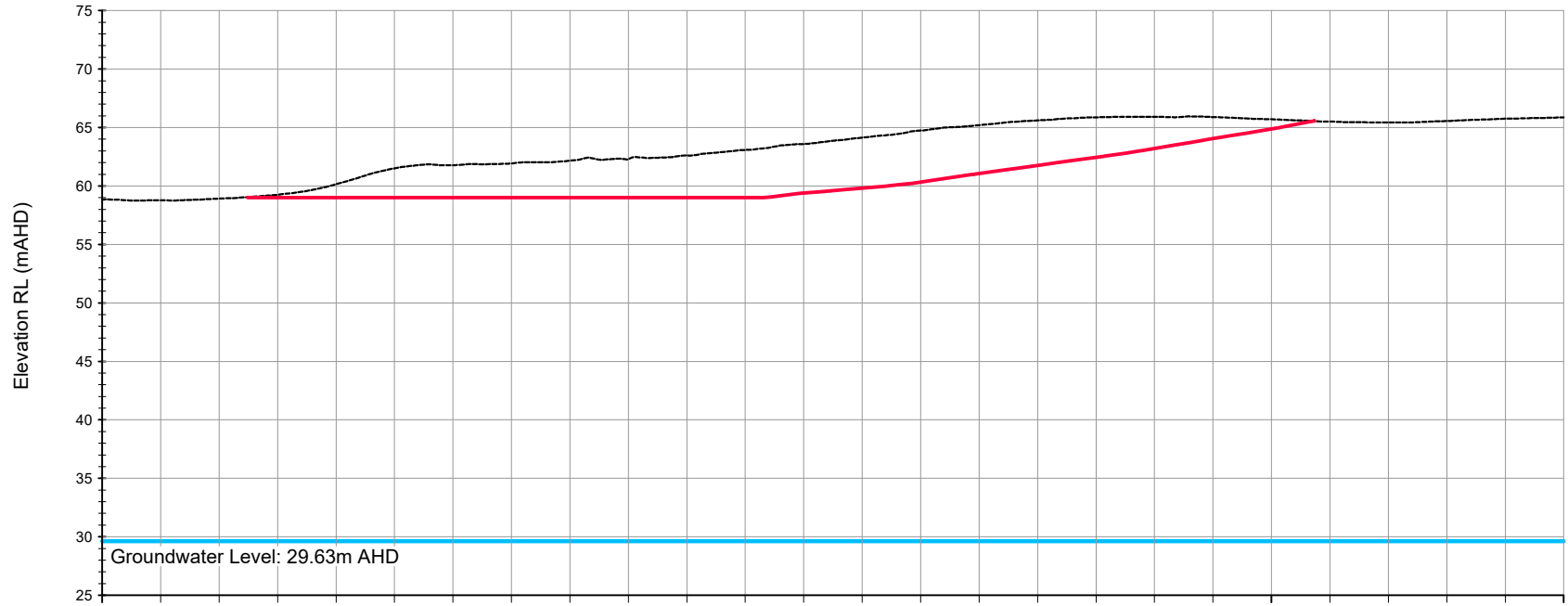
DRAWING NUMBER: 5227.DRG.007C
 REVISION: 1

DATE: 27 August 2024
 PRINTED: 27 August 2024

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

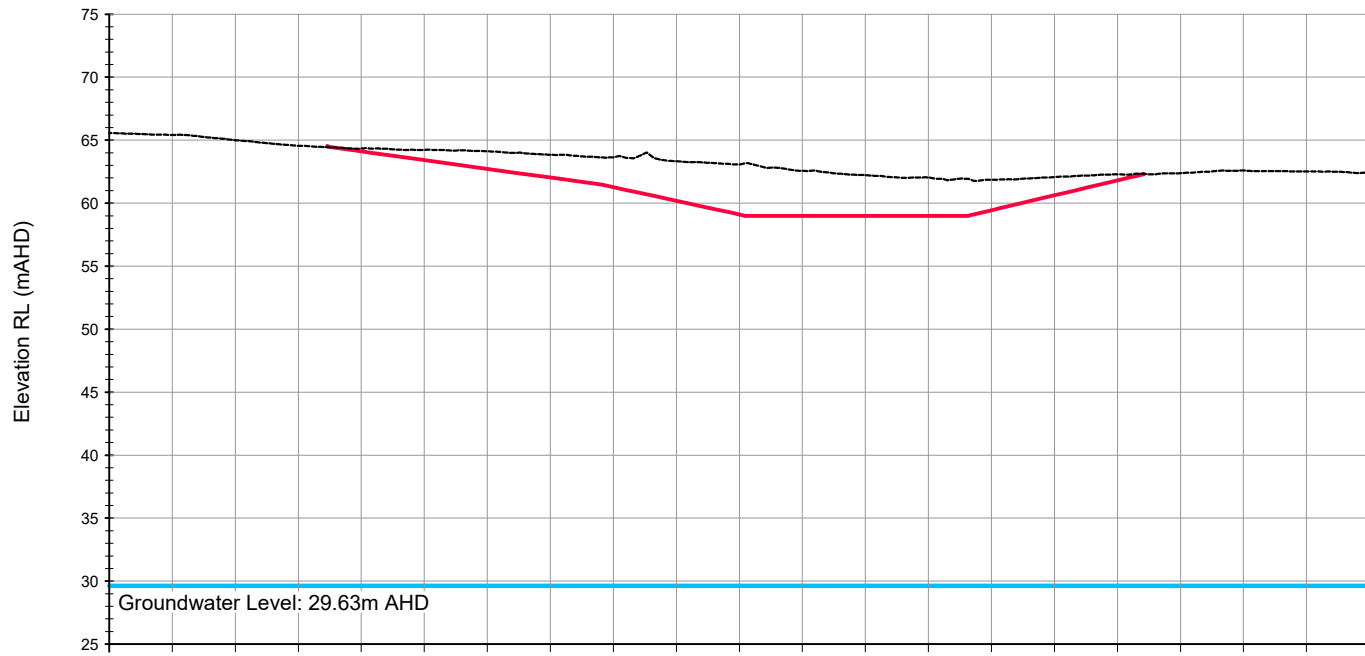
DATUM: HORIZONTAL / VERTICAL / ZONE
 GDA94 / MGA / AHD / 54

Section C-C'



Chainage	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
Existing Level	58.8	58.9	59.3	60.1	61.5	61.8	61.9	62.2	62.3	62.6	63.1	63.6	64.1	64.7	65.2	65.6	65.9	65.9	65.9	65.7	65.5	65.4	65.6	65.8	65.9
Design Level			59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.4	59.8	60.3	61.1	61.8	62.5	63.2	64.0	64.9					
Pit Depth			0.3	1.1	2.5	2.8	2.9	3.2	3.3	3.6	4.1	4.2	4.3	4.4	4.1	3.9	3.4	2.7	1.9	0.8					

Section D-D'



Chainage	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Existing Level	65.4	65.0	64.5	64.3	64.2	64.1	63.8	63.6	63.3	63.1	62.6	62.2	62.0	61.9	62.1	62.3	62.4	62.6	62.5	62.4
Design Level				64.1	63.4	62.7	62.0	61.3	60.2	59.1	59.0	59.0	59.0	59.4	60.6	61.8				
Pit Depth				0.2	0.8	1.4	1.8	2.4	3.1	4.0	3.6	3.2	3.0	2.4	1.4	0.5				

FILE NAME: F:\lab\GIS\5227\Long's Salt Creek Sand Pit\Drawings\5227.DRG.007D1 Quarry Development Plan.dwg
JOB SUB #: 5227
CREATED: 27 August 2024

REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/08/27	CP

Data Sources:
 Photogrammetry: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Cadastre:
 Ecosystem:
 Other:

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Legend:

- - - - Existing Ground Surface
- Pit Design Surface
- Groundwater Surface

PROJECT: Long's Salt Creek

CLIENT: Long's Sand and Metal Pty Ltd

TITLE: Quarry Development Plan
South Pit Sections C-C' & D-D'

SCALE: 1:600
When Printed On A3

DRAWING NUMBER: 5227.DRG.007D
REVISION: 1

DATE: 27 August 2024
PRINTED: 27 August 2024

DRAWN: CP
CHECKED: EP

DATUM: HORIZONTAL / VERTICAL / ZONE
GDA84 / MGA / AHD / 54

EROSION AND SEDIMENT CONTROL NOTES:

- EXTRACTION WILL BE UNDERTAKEN PROGRESSIVELY. UP TO A MAXIMUM OF 3.0Ha OF DISTURBANCE AT ANY TIME, WITH 1.0Ha OF ACTIVE REHABILITATION.
- REFER TO SEDIMENT BASIN SIZE TABLE FOR THE REQUIRED VOLUME OF SEDIMENT BASIN BASED ON THE AREA OF DISTURBANCE.
- QUARRY OPERATOR IS RESPONSIBLE TO ENSURE SUITABLE SIZE OF SEDIMENT BASIN IS INSTALLED PRIOR TO COMMENCEMENT OF EXTRACTION.
- MAINTAIN BUFFER FROM SALT CREEK FLOW PATH

Indicative Salt Creek Flow path

Sediment Basin North
Refer table for required volume
Batters 1 in 4

Perimeter Bunding
(constructed from topsoil
with vegetation cover)

Ponding inundation area to RL 60.0
Remove plant from this area
between extraction campaigns
and during significant rainfall events

5m Offset from Trees

Northern Pit
Maximum
Catchment C1
4.76Ha

Sediment Basin South
Refer table for required volume
Batters 1 in 4

Rehabilitation Area: 0.42ha

Sediment Basin Sizing Table

Area of Disturbance (Ha)	Required Volume (kL)	Length (m)	Width (m)	Depth (m)
0.50	60.00	10.00	6.00	1.00
1.00	120.00	15.00	8.00	1.00
1.50	170.00	20.00	8.50	1.00
2.00	230.00	25.00	10.00	1.00
2.50	280.00	30.00	10.00	1.00
3.00	340.00	35.00	10.00	1.00

Perimeter Bunding
(constructed from topsoil
with vegetation cover)

5m Offset from Trees

FILE NAME: F:\Jobs\SA\2024\5227.DRG.006 Erosion And Sediment Control Plan R3.dwg
JOB SUB #
CREATED: 1 July 2025

REV	DESCRIPTION	DATE	BY

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Topography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07, DSM 75cm
 Cadastre: © The Government of South Australia, (DTI) 2022
 Ecosystem:
 LULU/Cover:

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Legend:

- Cadastral Boundary
- Extractive Minerals Lease

PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

TITLE: Erosion and Sediment Control Plan

SCALE: 1:4500
 0m 90m

DRAWING NUMBER: 5227.DRG.006
 REVISION: 3

PH: +61 7 3871 0411
 WWW.GROUNDWORK.COM.AU
 CREATE DATE: 1 July 2025
 DRAWN: KB
 CHECKED: TT
 COORDINATE SYSTEM: GDA84 / MGA / AHD / 54



FILE NAME: F:\lab\SLR\5227\Long's Sand and Metal - Salt Creek Sand Pit\Drawings\Drawings\5227.DWG (08/27) Conceptual Final Landform Plan.dwg
 CREATED: 27 August 2024
 JOB SUB #:

REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/08/27	CP

Legend:
 Rehabilitation Area

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Topography: Cadastre
 Ecosystem: Other: © 2024 Microsoft Corporation, © 2024 Maxar, © CNES (2024) Distribution Airbus DS
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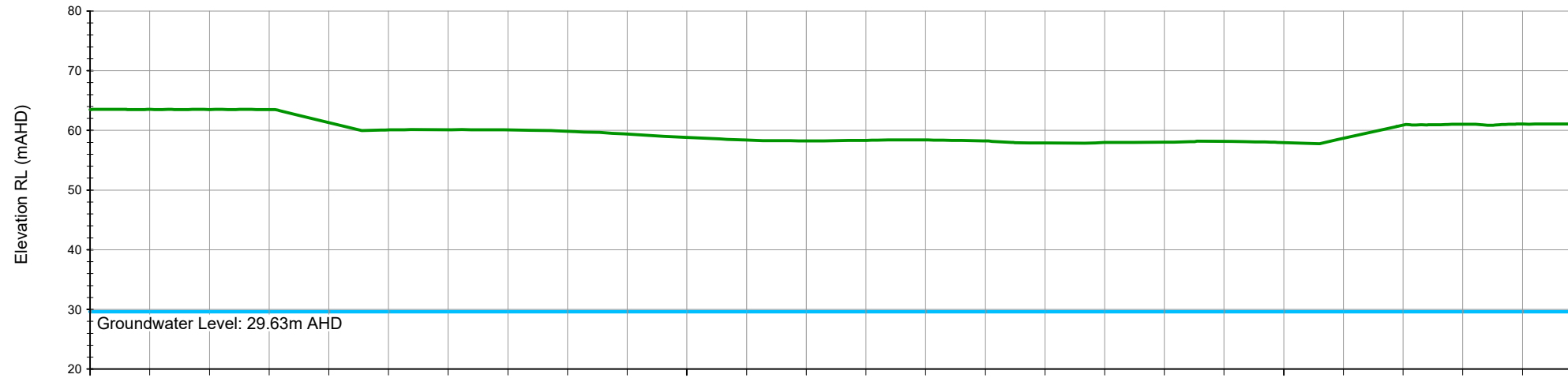
PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

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PH: +61 7 3871 0411 WWW.GROUNDWORK.COM.AU	DATE: 27 August 2024 PRINTED: 27 August 2024	DRAWN: CP	CHECKED: EP	DATUM: HORIZONTAL / VERTICAL / ZONE GDA84 / MGA / AHD / 54	



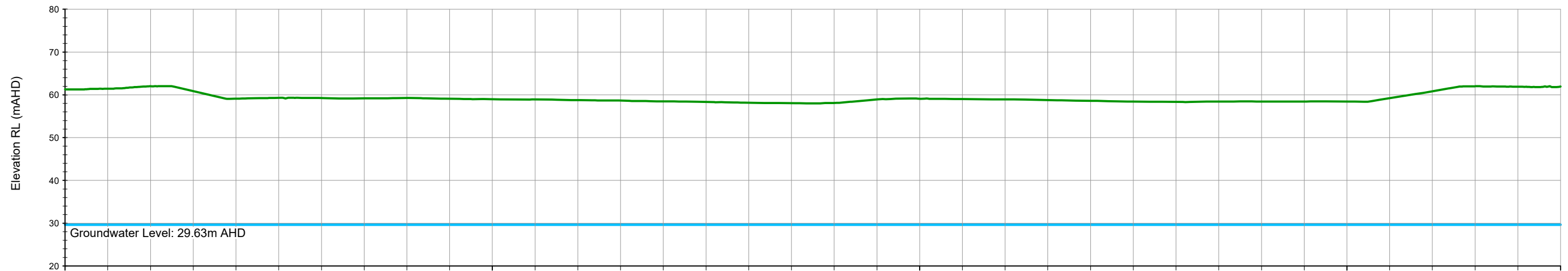
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JOB SUB #
CREATED: 27 August 2024

Section A-A'



Chainage	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
Elevation	63.5	63.5	63.5	61.3	60.1	60.1	60.1	59.8	59.4	58.8	58.4	58.2	58.3	58.4	58.2	57.9	58.0	58.0	58.2	58.0	58.7	60.9	61.0	61.1	61.1

Section B-B'



Chainage	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
Elevation	61.4	62.0	60.9	59.1	59.3	59.2	59.2	59.3	59.1	59.0	58.9	58.8	58.7	58.5	58.3	58.2	58.0	58.1	58.9	59.1	59.0	59.0	58.8	58.6	58.4	58.3	58.4	58.4	58.4	58.4	59.2	60.8	62.0	61.9	61.9

REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/08/27	CP

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Cadastre:
 Ecosystem:
 Other:

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Legend:
— Final Landform Surface
— Groundwater Surface



PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

TITLE: Conceptual Final Landform Plan
 North Pit Sections A-A' & B-B'

SCALE: 1:1,000
 When Printed On A3

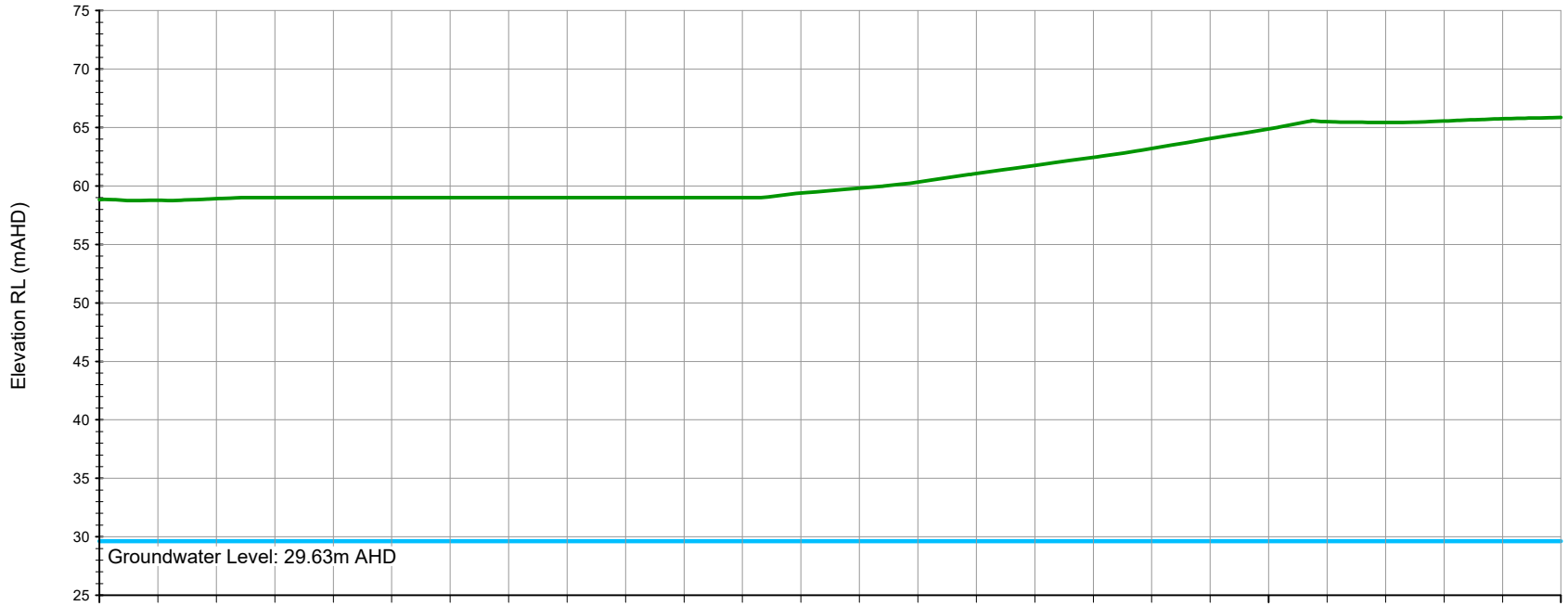
DRAWING NUMBER: 5227.DRG.008B
 REVISION: 1

DATE: 27 August 2024
 PRINTED: 27 August 2024

DRAWN: CP
 CHECKED: EP

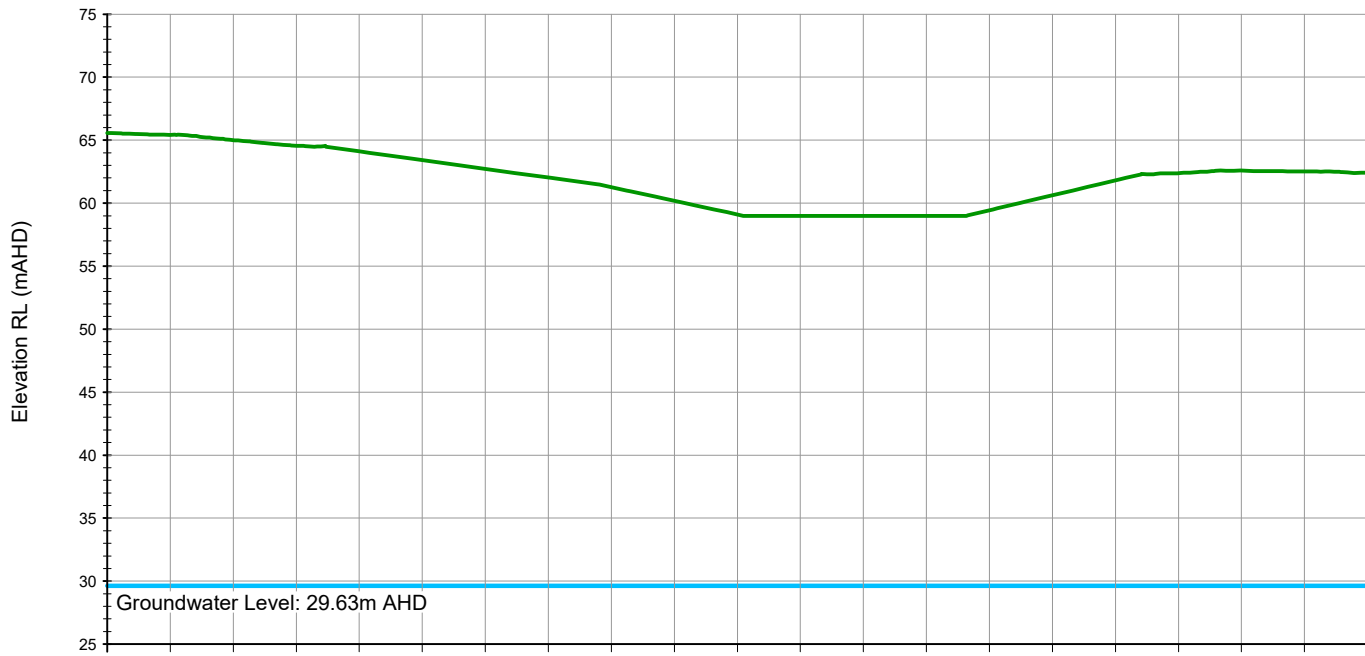
DATUM: HORIZONTAL / VERTICAL / ZONE
 GDA94 / MGA / AHD / 54

Section C-C'



Chainage	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
Elevation	58.8	58.9	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.4	59.8	60.3	61.1	61.8	62.5	63.2	64.0	64.9	65.5	65.4	65.6	65.8	65.9

Section D-D'



Chainage	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Elevation	65.4	65.0	64.5	64.1	63.4	62.7	62.0	61.3	60.2	59.1	59.0	59.0	59.0	59.4	60.6	61.8	62.4	62.6	62.5	62.4

FILE NAME: F:\Projects\5227_Long's Salt Creek Sand Pit\Drawings\5227_DRG_008C1_Conceptual Final Landform Plan.dwg
JOB SUB #: 5227
CREATED: 27 August 2024


REV	DESCRIPTION	DATE	BY
1	Updated Pit Designs and Volumes	2024/08/27	CP

Data Sources:
 Photogrammetry: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Cadastre:
 Ecosystem:
 Other:

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Legend:

- Final Landform Surface
- Groundwater Surface



PROJECT: **Long's Salt Creek**

CLIENT: **Long's Sand and Metal Pty Ltd**

TITLE: **Conceptual Final Landform Plan South Pit Sections C-C' & D-D'**

SCALE: 1:600
 0 12m

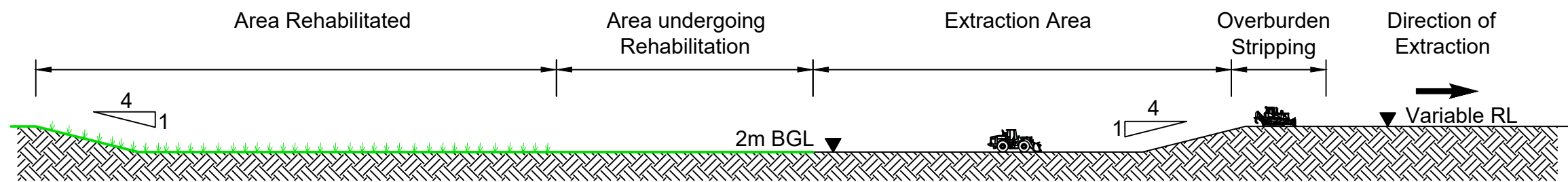
DATE: 27 August 2024
 PRINTED: 27 August 2024

DRAWING NUMBER: **5227.DRG.008C**

REVISION: **1**

DATUM: HORIZONTAL / VERTICAL / ZONE
 GDA84 / MGA / AHD / 54

FILE NAME: F:\Jobs\5227\Drawings\5227.DWG.09 Quarry Development Cross Section.dwg
 JOB SUB #
 CREATED: 14 June 2024



Note:
 As the extraction area develops in the direction of extraction, the rear of the extraction area can begin undergoing rehabilitation

REV	DESCRIPTION	DATE	BY

Data Sources:
 Photography:
 Topography:
 Cadastre:
 Ecosystem:
 Other:

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PROJECT: Long's Salt Creek	TITLE: Quarry Development Cross Section
CLIENT: Long's Sand and Metal Pty Ltd	SCALE: 0 0m When Printed On A3 DATE: 14 June 2024 PRINTED: 14 June 2024
GROUNDWORK plus	DRAWING NUMBER: 5227.DRG.009 REVISION: / / DATUM: HORIZONTAL / VERTICAL / ZONE / /
PH: +61 7 3871 0411 WWW.GROUNDWORK.COM.AU	DRAWN: CP CHECKED: EP

Register of Aboriginal Sites and Objects search - CONFIDENTIAL

Provided separately.

Surface Water Assessment (Quantity and Quality)

Preliminary Surface Water Assessment

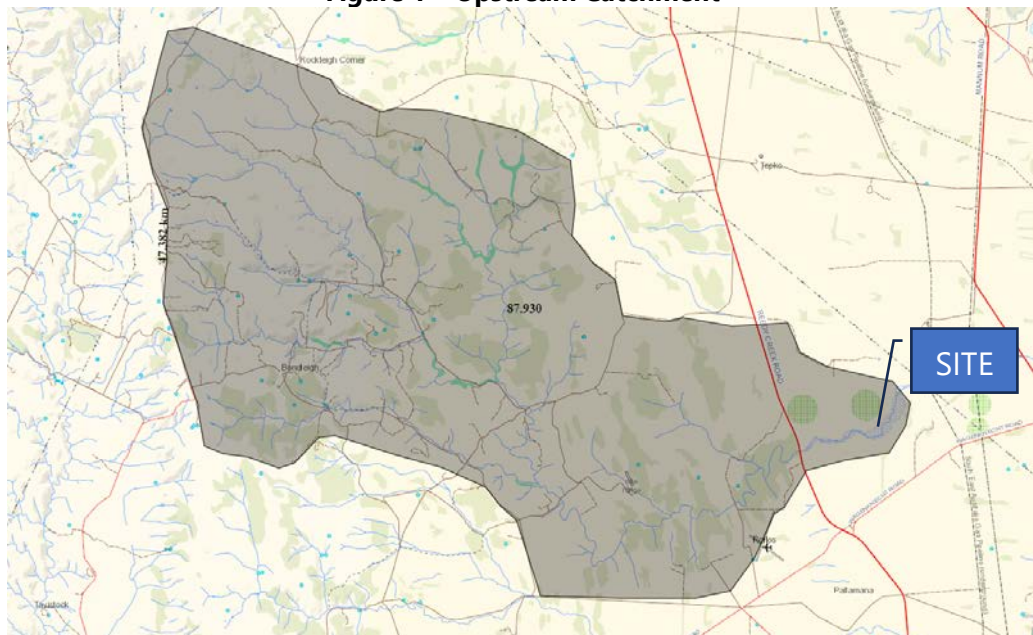
To: Christine Long Long's Sand and Metal Pty Ltd Longs.sand.metal@bigpond.com	From: Mark Folker Email: mfolker@groundwork.com.au Date: 10 July 2024 File Ref: 5227_800_001v1
Re: Surface Water Assessment (Quantity and Quality)	

Groundwork Plus (SA) Pty Ltd (Groundwork Plus) has undertaken a surface water assessment for the Extractive Minerals Lease (EML) 6140 located along Reedy Creek Road, Pallamana South Australia (the Site).

Catchment Assessment

As shown in **Figure 1 – Upstream Catchment** there is a significant upstream catchment of approximately 88km², which forms the Salt Creek catchment (including its tributaries). The Salt Creek ultimately passes through the proposed project area.

Figure 1 – Upstream Catchment



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Phone: 0437 523 282

AGGREGATE TESTING LABORATORY

Unit 78/109 Leitchs Road
Brendale Qld 4500

Phone: 0417 615 217

Surface Water Assessment (Quantity)

Site specific rainfall data (grid Lat: -35.00; Long: 139.20) was sourced from the Bureau of Meteorology (BoM) (nearest station Murray Bridge) and SILO collaborative project, hosted by the Queensland Department of Environment and Science (DES).

Based on consideration of all available years of data (1959 – 2023) the following annual rainfall depth percentiles were established, shown in **Table 1 – Annual Rainfall Percentiles**.

Table 1 – Annual Rainfall Percentiles

Percentile	Annual Rainfall Depth (mm)
25 th	280.6
50 th	321.7
75 th	354.2
90 th	409.4

Historic Rainfall Data

The historic daily rainfall data was also downloaded from BoM for all available years at the site, comprising data from the 1st of January 1959 to 9 April 2024. Upon analysis of all daily rainfall data, only 20 days have been recorded with 40mm or higher in a 24 hour period.

Further, only once has there been two consecutive days of higher than 40mm, being the 31st of October and 1st of November of January 1997. A summary of historical rainfall exceeding 40mm is shown in **Table 2 – Historical Rainfall Data (days above 40mm rainfall)**.

Table 2 – Historical Rainfall Data (days above 39mm rainfall)

Year	Month	Day	Rainfall (mm)
1959	3	31	42.5
1963	5	15	41.9
1964	11	18	49.1
1969	2	9	98.4
1973	2	6	62.3
1974	2	1	47.8
1975	10	24	49.3
1980	10	6	46
1985	3	16	67.6
1987	12	1	54.6
1992	12	18	44.2
1993	7	8	42.5
1994	6	7	54.2
1997	10	31	48.3
1997	11	1	56.5
1999	10	10	40.8
2010	12	8	57.9
2013	6	1	52.7
2014	2	14	74.9

To manage surface water at the site, extraction will generally only occur on a campaign basis, avoiding the wet season where possible. Historic operations will avoid permanently setting up plant and equipment within the low lying areas of the site that fall within the Salt Creek water course.

As indicated on the plan included in **Attachment 1 – Erosion and Sediment Control Plan**, the new proposed extraction area to the north east of the site will be bunded off from the banks of the Salt Creek and also be positioned above the creek watercourse, at elevations generally above RL 62.00.

It is recommended that storing plant and equipment below RL 60.00 is generally avoided where possible, in particular prior to forecast rainfall of 40mm or more within the Salt Creek catchment.

Surface Water Assessment (Quality)

In accordance with industry best practice (IECA 2008), stormwater runoff from disturbed areas of the site, generated by (up to and including) a 5-day 75th percentile rainfall event is proposed to be captured by a sediment basin onsite or managed to remove contaminants prior to offsite discharge. Details of sediment basin details are shown in the drawing included in **Attachment 1 – Erosion and Sediment Control Plan**.

The total upper settling storage requirements for sediment basins are estimated based on the following formula (IECA 2008):

$$V_s = 10 \times A \times C_v \times R \text{ (y\%, 5-day), where:}$$

A = Catchment Area (Ha)
 C_v = Coefficient of Discharge
 R = Rainfall depth (m) from 95th Percentile, 5-day rainfall event

Table 1 –Sediment Basin Storage Requirements details the sediment basin storage requirements, based on a rainfall depth (R) of 14.15 mm, (1 year ARI, 120h intensity source: Bureau of Meteorology).

Basin ID	Location	Catchment Area (Ha)	Upper Settling Volume (ML)	Sediment Storage Volume (ML)	Total Volume (ML)
SB1	C1	4.76	0.36	0.18	0.54

Additionally, **Table 2 – Sediment Basin Sizing Table** is presented to demonstrate the required construction measurements of basins within the Site based on the area of disturbed activity within the Site.

Area of Disturbance (Ha)	Required Volume (kL)	Length (m)	Width (m)	Depth (m)
0.50	60.00	10.00	6.00	1.00
1.00	120.00	15.00	8.00	1.00
1.50	170.00	20.00	8.50	1.00
2.00	230.00	25.00	10.00	1.00
2.50	280.00	30.00	10.00	1.00
3.00	340.00	35.00	10.00	1.00

Should you require clarification please feel free to contact us.

Yours faithfully

A handwritten signature in black ink, appearing to read 'M Folker', written in a cursive style.

Mark Folker
Senior Environmental Engineer
Groundwork Plus Pty Ltd

Appendix 1 – Erosion and Sediment Control Plan

EROSION AND SEDIMENT CONTROL NOTES:

- EXTRACTION WILL BE UNDERTAKEN PROGRESSIVELY. UP TO A MAXIMUM OF 3.0Ha OF DISTURBANCE AT ANY TIME, WITH 1.0Ha OF ACTIVE REHABILITATION.
- REFER TO SEDIMENT BASIN SIZE TABLE FOR THE REQUIRED VOLUME OF SEDIMENT BASIN BASED ON THE AREA OF DISTURBANCE.
- QUARRY OPERATOR IS RESPONSIBLE TO ENSURE SUITABLE SIZE OF SEDIMENT BASIN IS INSTALLED PRIOR TO COMMENCEMENT OF EXTRACTION.
- MAINTAIN BUFFER FROM SALT CREEK FLOW PATH

Indicative Salt Creek Flow path

Sediment Basin North
Refer table for required volume
Batters 1 in 4

Perimeter Bunding
(constructed from topsoil
with vegetation cover)

Ponding inundation area to RL 60.0
Remove plant from this area
between extraction campaigns
and during significant rainfall events

5m Offset from Trees

Northern Pit
Maximum
Catchment C1
4.76Ha

Sediment Basin South
Refer table for required volume
Batters 1 in 4

Rehabilitation Area: 0.42ha

Sediment Basin Sizing Table

Area of Disturbance (Ha)	Required Volume (kL)	Length (m)	Width (m)	Depth (m)
0.50	60.00	10.00	6.00	1.00
1.00	120.00	15.00	8.00	1.00
1.50	170.00	20.00	8.50	1.00
2.00	230.00	25.00	10.00	1.00
2.50	280.00	30.00	10.00	1.00
3.00	340.00	35.00	10.00	1.00

Perimeter Bunding
(constructed from topsoil
with vegetation cover)



5m Offset from Trees

FILE NAME: F:\Jobs\SA\2024\5227.DRG.006 Erosion And Sediment Control Plan R3.dwg
JOB SUB #
CREATED: 1 July 2025

REV	DESCRIPTION	DATE	BY

Data Sources:
 Photography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07
 Topography: Groundwork Plus Pty Ltd, UAV Survey, 2024/02/07, DSM 75cm
 Cadastre: © The Government of South Australia, (DTI) 2022
 Ecosystem:
 LULU/Cover:

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Legend:
 Cadastral Boundary
 Extractive Minerals Lease

PROJECT: Long's Salt Creek	TITLE: Erosion and Sediment Control Plan
CLIENT: Long's Sand and Metal Pty Ltd	SCALE: 1:4500 0m 90m
GROUNDWORK plus	DRAWING NUMBER: 5227.DRG.006
PH: +61 7 3871 0411 WWW.GROUNDWORK.COM.AU	REVISION: 3
CREATE DATE: 1 July 2025 DRAWN: KB LAST SAVED BY: TOM.RICHARDSON CHECKED: TT	COORDINATE SYSTEM: GDA84 / MGA / AHD / 54

Native Vegetation and Weed Summary

Groundwork, part of SLR**Phone:** 1800 GW PLUS (1800 497 587)**Email:** info@groundwork.com.au**Website:** groundwork.com.au**ABN 93 642 089 683**

Date 20 August 2024

Ref: 5227.620.001

Christine Long
11-31 Rayson Street
Murray Bridge SA 5253

Dear Christine,

Native Vegetation and Weed Summary

Groundwork Plus (SA) Pty Ltd (Groundwork Plus) have been engaged by Christine Long to undertake a Native Vegetation and Weed Assessment to inform a review and input into a Defined Impact Program for the Department for Energy and Mining (DEM) in relation to a transitional Environment Protection and Rehabilitation (PEPR) for Extractive Minerals Lease (EML) 6140 on 25 June 2024. The Site is located along Reedy Creek Road, Pallamana, South Australia.

Inspection of the Site confirmed the presence of Native Vegetation as defined by the South Australian *Native Vegetation Act 1991* within small patches consisting of one (1) vegetation association which was heavily modified from cropping and grazing activities:

- Vegetation Association 1: *Eucalyptus odorata* very open woodland over *Rhagodia spinescens* +/- *Enchylaena tomentosa* shrub understorey

Remaining vegetation within the Site consisted of exotic grassland with emergent *Acacia ssp.* shrubs which have regrown since historical cropping and grazing disturbances.

Native vegetation is situated outside of the current extraction location and will not be impacted, refer to **Drawing No. 5227.DRG.010 - Vegetation** for a visual representation of native vegetation within the Site.

Additionally, several weeds were identified within the Site, with three (3) Declared weeds present:

- African Boxthorn (*Lycium ferocissimum*)
- Salvation Jane (*Echium plantagineum*)
- Prickly Pear (*Opuntia humifusa*)

Refer to **Drawing No. 5227.DRG.011 - Declared Weeds** for a visual representation of Declared weed locations within the Site.

An Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Protected Matters report listed 19 threatened fauna species and 13 threatened flora species that may occur or have habitat within five (5) kilometres (km) of the project area. Additionally, a search of *NatureMaps* (2024) identified a further five (5) threatened fauna species and one (1) threatened flora species recorded within the preceding 20 years and within a five (5) km radius of the Site, refer to **Table 1 - Threatened Species List**. Five (5) Threatened Ecological Communities (TECs) were identified as potentially occurring within the five (5) km buffer applied to the project area. Inspection of the Site confirmed none of these TECs

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PO Box 854, Nuriootpa SA 5355**Phone:** +61 8 8562 4158**GEOTECHNICAL LABORATORY**Unit 78/109 Leitchs Road
Brendale Qld 4500**Phone:** 0417 615 217

were present, refer to **Attachment 1 – Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Report** for full EPBC Act search results.

Table 1 - Threatened Species List

Common Name	Scientific Name	Conservation status	
		SA	EPBC
FAUNA			
Southern Whiteface	<i>Aphelocephala leucopsis</i>	V	VU
Australasian Bittern	<i>Botaurus poiciloptilus</i>	E	EN
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>		VU
White-winged Chough	<i>Corcorax melanorhamphos</i>	R	
Grey Falcon	<i>Falco hypoleucos</i>	R	VU
Latham's Snipe	<i>Gallinago hardwickii</i>	R	VU
Painted Honeyeater	<i>Grantiella picta</i>	R	VU
Little Eagle	<i>Hieraaetus morphnoides</i>	V	
Malleefowl	<i>Leipoa ocellata</i>	V	VU
South-eastern Hooded Robin	<i>Melanodryas cucullata cucullata</i>	R	EN
Jacky Winter	<i>Microeca fascinans</i>	R	
Blue-winged Parrot	<i>Neophema chrysostoma</i>	V	VU
Elegant Parrot	<i>Neophema elegans elegans</i>	R	
Plains-wanderer	<i>Pedionomus torquatus</i>	E	CE
Regent Parrot (eastern)	<i>Polytelis anthopeplus monarchoides</i>	V	VU
Australian Painted Snipe	<i>Rostratula australis</i>	E	EN
Diamond Firetail	<i>Stagonopleura guttata</i>	V	VU
Common Greenshank	<i>Tringa nebularia</i>		EN
Southern Bell Frog	<i>Litoria raniformis</i>	V	VU
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	R	VU
Flinders Ranges Worm-lizard	<i>Aprasia pseudopulchella</i>		VU
FLORA			
Menzel's Wattle	<i>Acacia menzeli</i>	V	VU
Neat Wattle	<i>Acacia rhetinocarpa</i>	V	VU
Crimson Spider-orchid	<i>Caladenia concolor</i>		VU
Greencomb Spider-orchid	<i>Caladenia tensa</i>		EN
Trailing Hop-bush	<i>Dodonaea procumbens</i>	V	VU
Peep Hill Hop-bush	<i>Dodonaea subglandulifera</i>	E	EN
Pink Gum	<i>Eucalyptus fasciculosa</i>	R	
Silver Daisy-bush	<i>Olearia pannosa subsp. pannosa</i>	V	VU
Pale Leek-orchid	<i>Prasophyllum pallidum</i>	R	VU
Monarto Mintbush	<i>Prostanthera eurybioides</i>	E	EN
Desert Greenhood	<i>Pterostylis xerophila</i>	V	VU
Large-fruit Fireweed	<i>Senecio macrocarpus</i>	V	VU
Yellow Swainson-pea	<i>Swainsona pyrophila</i>	R	VU
Metallic Sun-orchid	<i>Thelymitra epipactoides</i>	E	EN

No threatened fauna or flora species were observed within the EML during the Site visit. It is unlikely that any species identified within the flora and fauna desktop studies identified as potentially occurring within the Site would utilise the project area as it is heavily moderated and fragmented from historical clearance, grazing and current cropping with quarrying activities. Thus, none of the vegetation would be determined to be critical habitat for the aforementioned species.

A search of *NatureMaps* in March 2024 confirmed *Phytophthora* is not present within the Site or immediate surrounds. No vegetation onsite is known to be affected or potentially affected by economically significant pathogens.

Yours faithfully,



Georgia Wilson
Environmental Consultant
Groundwork Plus (SA) Pty Ltd

Attachment:

- **Attachment 1 – *Environmental Protection and Biodiversity Conservation Act 1999* Protected Matters Report**

Drawings:

- **Drawing No. 5227.DRG.010 – Vegetation**
- **Drawing No. 5227.DRG.011 - Declared Weeds**



Australian Government

Department of Climate Change, Energy,
the Environment and Water

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. Please see the caveat for interpretation of information provided here.

Report created: 26-Jun-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment 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 (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	32
Listed Migratory Species:	10

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity	Buffer Status
The coorong, and lakes alexandrina and albert wetland	20 - 30km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In feature area
Iron-grass Natural Temperate Grassland of South Australia	Critically Endangered	Community likely to occur within area	In feature area
Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	Community likely to occur within area	In feature area
Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia	Critically Endangered	Community likely to occur within area	In feature area
Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis anthopeplus monarchoides Regent Parrot (eastern) [59612]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In feature area
FROG			
Litoria raniformis Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Species or species habitat may occur within area	In buffer area only
PLANT			
Acacia menzeli Menzel's Wattle [9218]	Vulnerable	Species or species habitat known to occur within area	In feature area
Acacia retinocarpa Neat Wattle, Resin Wattle (SA) [11282]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caladenia tensa Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area	In feature area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dodonaea subglandulifera Peep Hill Hop-bush [11956]	Endangered	Species or species habitat may occur within area	In feature 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	In feature area
Prasophyllum pallidum Pale Leek-orchid [20351]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Prostanthera eurybioides Monarto Mintbush [2603]	Endangered	Species or species habitat known to occur within area	In buffer area only
Pterostylis xerophila Desert Greenhood [7997]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Swainsona pyrophila Yellow Swainson-pea [56344]	Vulnerable	Species or species habitat may occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area

REPTILE

Aprasia pseudopulchella Flinders Ranges Worm-lizard [1666]	Vulnerable	Species or species habitat may occur within area	In feature area
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Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Migratory Terrestrial Species

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
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Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
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Extra Information

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Unnamed (No.HA12)	Heritage Agreement	SA	In buffer area only
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Caveat

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The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

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Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and 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.

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The following species and ecological communities have not been mapped and do not appear in this report:

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- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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.

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Department of Climate Change, Energy, the Environment and Water

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REV	DESCRIPTION	DATE	BY

Legend:
 Extractive Mineral Leases
 Vegetation Association 1

Data Sources:
 Photography: UAV Survey 2024-03-07, Google Satellite Imagery accessed: 20-August-2024
 Topography: Cadastre: Data.sa.gov.au; Boundaries are indicative only, not at boundaries
 Ecosystems: Other:



PROJECT: Long's Salt Creek
 CLIENT: Long's Sand and Metal Pty Ltd

 PH +61 3671 0611 WWW.GROUNDWORKPLUS.COM.AU	SCALE: 1:4,500.000005 0 20 40 60 80 m (Scale bar)	DRAWING NUMBER: 5227.DRG.010 REVISION:
	DATE: 20-August-2024 PRINTED: 20-August-2024	DRAWN: GW CHECKED: MJ



Australian Government

Department of Climate Change, Energy,
the Environment and Water

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. Please see the caveat for interpretation of information provided here.

Report created: 26-Jun-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment 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 (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	32
Listed Migratory Species:	10

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 <https://www.dcceew.gov.au/parks-heritage/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 Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	16
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	4
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity	Buffer Status
The coorong, and lakes alexandrina and albert wetland	20 - 30km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In feature area
Iron-grass Natural Temperate Grassland of South Australia	Critically Endangered	Community likely to occur within area	In feature area
Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	Community likely to occur within area	In feature area
Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia	Critically Endangered	Community likely to occur within area	In feature area
Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis anthopeplus monarchoides Regent Parrot (eastern) [59612]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In feature area
FROG			
Litoria raniformis Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Species or species habitat may occur within area	In buffer area only
PLANT			
Acacia menzeli Menzel's Wattle [9218]	Vulnerable	Species or species habitat known to occur within area	In feature area
Acacia retinocarpa Neat Wattle, Resin Wattle (SA) [11282]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Caladenia tensa Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat likely to occur within area	In feature area
Dodonaea procumbens Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dodonaea subglandulifera Peep Hill Hop-bush [11956]	Endangered	Species or species habitat may occur within area	In feature 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	In feature area
Prasophyllum pallidum Pale Leek-orchid [20351]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Prostanthera eurybioides Monarto Mintbush [2603]	Endangered	Species or species habitat known to occur within area	In buffer area only
Pterostylis xerophila Desert Greenhood [7997]	Vulnerable	Species or species habitat may occur within area	In feature area
Senecio macrocarpus Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In feature area
Swainsona pyrophila Yellow Swainson-pea [56344]	Vulnerable	Species or species habitat may occur within area	In feature area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat may occur within area	In feature area

REPTILE

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Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
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The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

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

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

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

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Please feel free to provide feedback via the [Contact us](#) page.

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REV	DESCRIPTION	DATE	BY

Legend:
 Extractive Mineral Leases
 Vegetation Association 1

Data Sources:
 Photography: UAV Survey 2024-03-07, Google Satellite Imagery accessed: 20-August-2024
 Topography: Cadastre: Data.sa.gov.au; Boundaries are indicative only, not at boundaries
 Ecosystems:
 Other:



PROJECT:
Long's Salt Creek

CLIENT:
Long's Sand and Metal Pty Ltd

TITLE:
Vegetation

SCALE:
 1:4,500.000005
 0 20 40 60 80 m

DRAWING NUMBER:
5227.DRG.010

DATE: 20-August-2024
 PRINTED: 20-August-2024

DRAWN: GW
 CHECKED: MJ

DATUM: HORIZONTAL / VERTICAL /
 MGA / AHD / 54

REVISION:
 EPSG:7824



REV	DESCRIPTION	DATE	BY

Legend:
 Extractive Mineral Leases
● Declared Weed

Data Sources:
Photography: UAV Survey 2024-02-07; Google Satellite Imagery accessed: 26-June-2024
Topography:



PROJECT: Long's Salt Creek
CLIENT: Long's Sand and Metal Pty Ltd

 <small>PH: +61 3871 0411 WWW.GROUNDWORKPLUS.COM.AU</small>	SCALE: 1:4,500 <small>(When Printed On A3)</small>	 <small>0 20 40 60 80 m</small>	DRAWING NUMBER: 5227.DRG.011	REVISION:
	DATE: 26-June-2024		DRAWN: GW	DATUM: HORIZONTAL / VERTICAL / ZONE
PRINTED: 26-June-2024	CHECKED: MJ	MGA / AHD / 54		