REPORT

Erskine Park Landfill

Construction Environmental Management Plan

Submitted to:

ENVIROGUARD PTY LTD

Submitted by:

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1.0 INTRODUCTION

1.1 Background

This Construction Environmental Management Plan (CEMP) outlines a management framework for preparation of the Contractor's CEMP for construction works relating to the Mechanically Stabilized Earth (MSE) retaining wall (the Project) at the Erskine Park Landfill (the Site). The Site is located on Lot 4 DP1094504, Quarry Road, Erskine Park (refer Figure 1, Appendix A). Figure 2 shows the general site layout, including the footprint of the proposed construction works.

1.2 Purpose

This document forms a practical guide to identifying, addressing and managing environmental impacts associated with the construction works to ensure the Project Manager, Site Superintendant, Contractors and Subcontractors comply with the environmental conditions of approval for the Project and that the environmental risk are properly addressed and managed.

The Contractor shall use this document as a critical reference in the preparation of construction and when inspecting works.

1.3 Organisational Structure, Authorities and Responsibilities

1.3.1 Authorities for Implementing CEMP

The responsibility for environmental management lies with a number of parties as follows:

- Enviroguard Pty Ltd (Principal);
- Site Superintendent;
- Contractors and Subcontractors;
- NSW Environmental Protection Agency (EPA) (issuing the site environment protection licence) ; and
- Penrith City Council (assessment authority for the Project).

All works shall be implemented in accordance with the CEMP for the full duration of the project, from site establishment through demobilisation. However, the CEMP may be revised as required throughout the course of the project or during any project task, to better align the management of the works with changing site and project conditions. The Site Superintendent must approve any revisions to the CEMP. The CEMP should be implemented through the all activities including by not limited to; training all personnel, site induction, undertaking environmental monitoring and reporting and ongoing review of the CEMP.

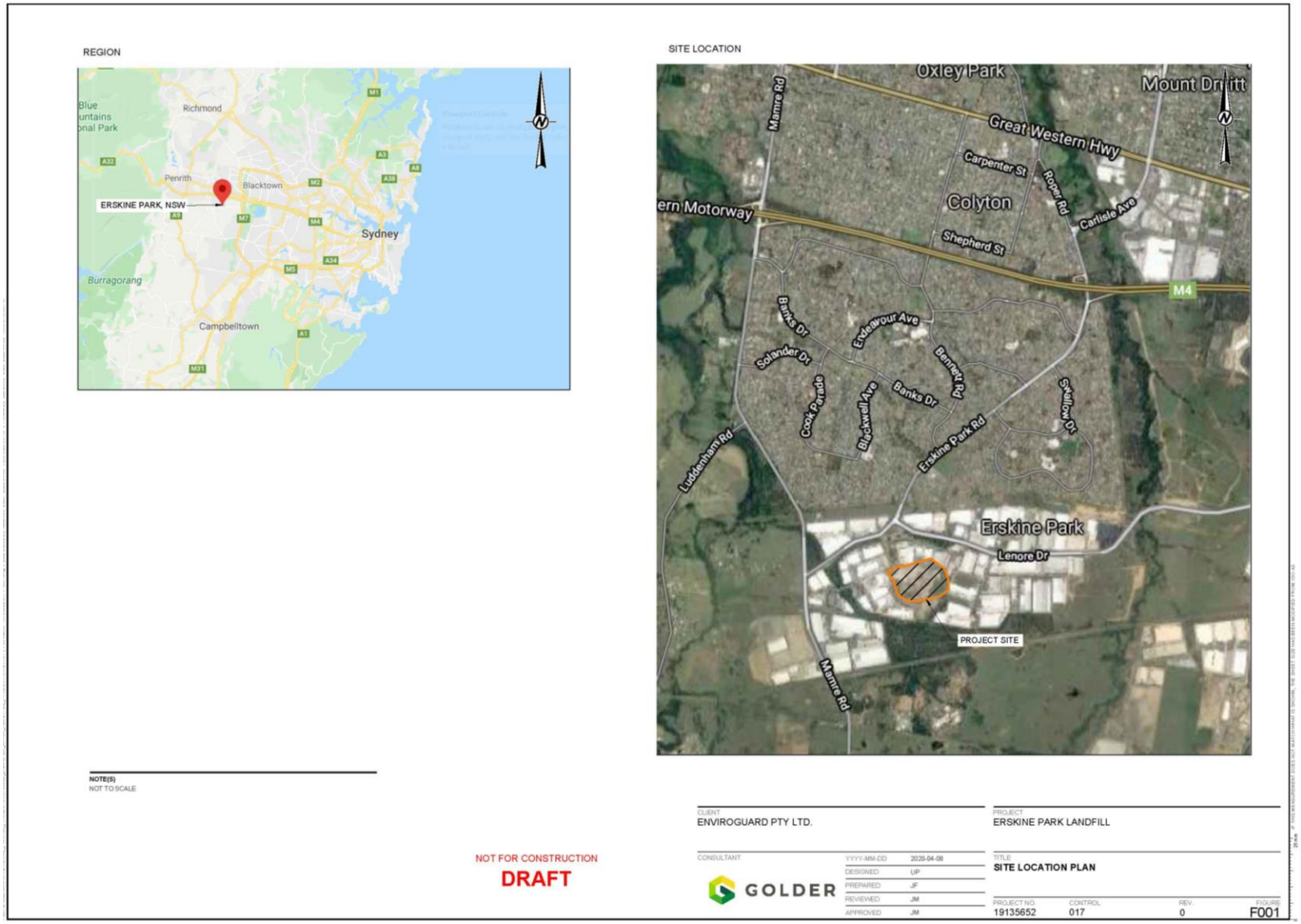

Figure 1: Site Location Plan

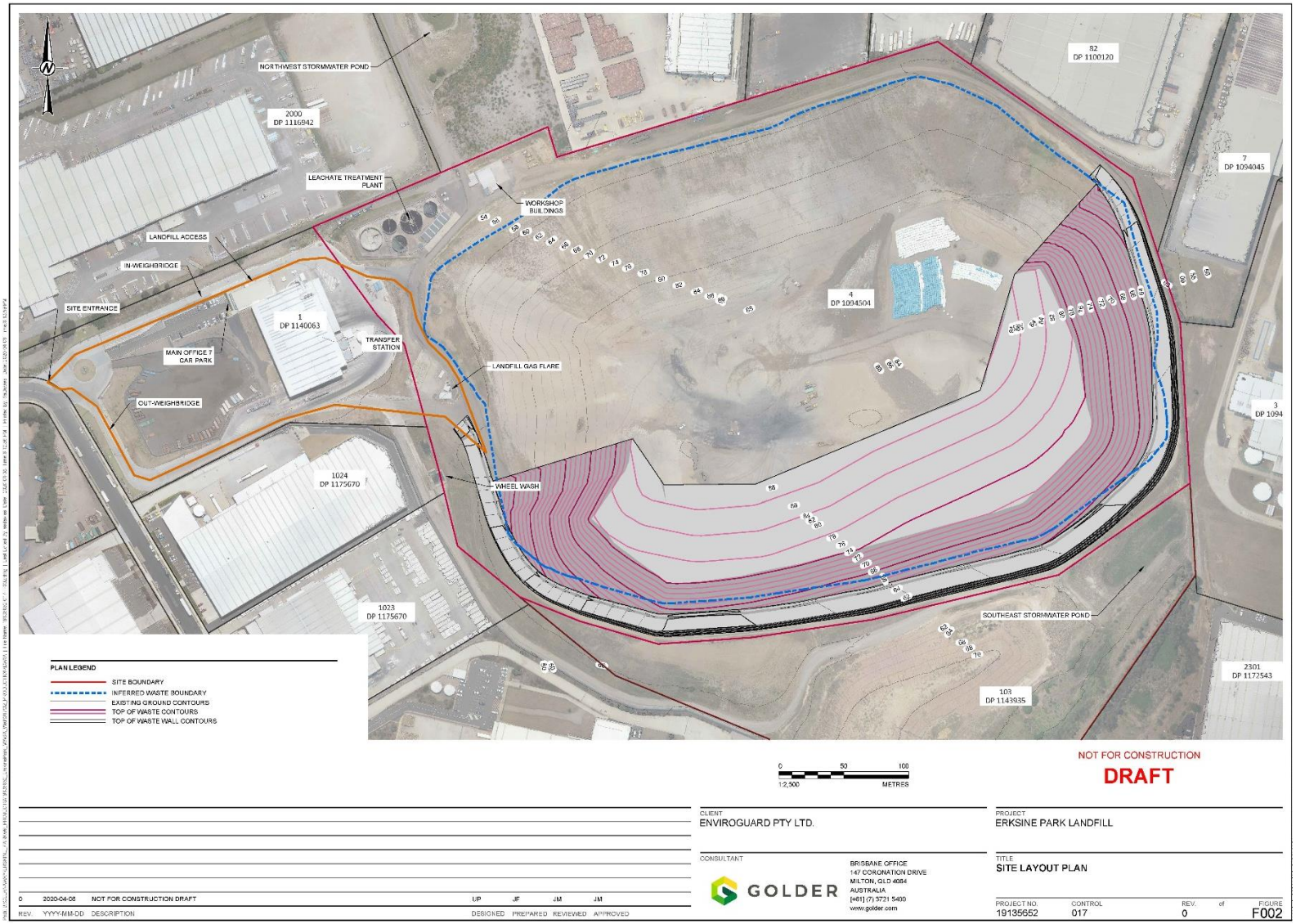

Figure 2: Site Layout Plan

2.0 CEMP REQUIREMENTS

2.1 Statutory Obligations, Regulatory and Legislative Requirements and Guidelines

The Contractor shall ensure all activities carried out onsite shall comply with all relevant legislation, regulations, and guidelines. These include but are not limited to the following NSW State legislation:

- *Environmental Planning and Assessment Act 1979*
- *Protection of the Environment Operations Act 1997*
- *Waste Avoidance and Resource Recovery Act 2001*
- *Contaminated Lands Management Act 1997*
- *Roads Act 1993*
- *Rural Fires Act 1997*
- *Biodiversity Conservation Act 2016*
- *Heritage Act 1977*
- *Fisheries Management Act 1994*
- *Water Management Act 2000*
- *Environmentally Hazardous Chemicals Act 1985*
- *Dangerous Goods (Roads and Rail Transport) Act 2008*
- NSW EPA (2016) “Environmental Guidelines: Solid Waste Landfills 2016 2nd edition”
- Landcom (2004) “Managing Urban Stormwater: Soils and Construction (Blue Book)”
- Penrith City Council (2017) “Penrith Waste and Resource Strategy (2017-2026)
- NSW EPA “Waste Avoidance and Resource Recovery Strategy 2007”
- NSW EPA (2017) “Noise Policy for Industry (2017)”
- Australian Standards and Codes of Practices

3.0 ENVIRONMENTAL MANAGEMENT

3.1 Air Quality

3.1.1 Environmental Aspects and Impacts

The most likely contributors to affect air quality at the site include but are not limited to:

- Vegetation removal during construction
- Haul Roads
- Equipment and Plant Emissions
- Dust generation during earthworks construction and stockpiling of materials
- Waste material excavation odour generation

3.1.2 Requirements

The CEMP will include procedures for air quality management, including dust and odour, to meet the following objectives:

- To conform with WorkCover, EPA and Council requirements for the management of odour, dust, landfill gas and asbestos containing material (if encountered); and
- To minimise odour and dust emissions from the site which could adversely affect air quality or the amenity of the local area.

Works would be conducted with reference to the following relevant guidance documents:

- National Environmental Protection Council (1998); National Environment Protection Measure (NEPM) on Ambient Air Quality.
- EPA, NSW (2016); Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.
- DEC, NSW (2007); Approved methods for the Sampling and Analysis of Air Pollutants in NSW.
- NW EPA (2016) “Environmental Guidelines: Solid Waste Landfills 2016 2nd edition”
- National Occupational Health and Safety Commission, 2nd Edition (NOHSC; 2002(2005)) Code of Practice for the Safe Removal of Asbestos.

3.1.3 Management Strategy / Control Measures

The Contractor, in order to limit air quality impacts shall as a minimum:

- Minimise the dust, odours and emissions generated onsite due to construction activities.
- Consider weather conditions prior to commencing work.
- Not burn any materials onsite.

Plant and Equipment

The Contractor will address the following requirements for machines:

- All plant used on site shall comply with EPA licence conditions.
- Operators of machinery will make a concerted effort to minimise unnecessary movements onsite.
- Operators of machinery must comply with speed limits onsite.

- Trucks carrying materials or travelling on public roads should be covered to prevent spills or dust emissions.
- Trucks travelling offsite must have their tires cleaned to prevent spillage of soils offsite.

Dust Suppression

Appropriate implementation measures for controlling dust generation and transport off-site will include:

- Watering of haul road;
- Progressive clearing to minimise the area of exposure subject to wind erosion;
- Erection of physical barriers such as wind breaks during earthmoving;
- Earth moving activities should be avoided or restricted during particularly unfavourable meteorological conditions;
- Restricting the speed of on-site traffic to minimise wheel-generated dust; and
- Compaction of construction site and stabilisation of vegetation to minimise dust lift off due to wind erosion.

Odour Control

The Contractor should manage the amount of odour, landfill gas or vapour generated from the proposed works, and ensures minimal impact on the air quality of the local area and health of onsite workers and the general community.

The Contractor should implement the following measures:

- The area of waste exposed at any one time would be minimised wherever possible by a localised staged program.
- Cover material should be applied of an increasing thickness to control odour whenever necessary.

Landfill Gas

- Landfill gas emissions will be monitored during the works in the waste excavation areas. If elevated readings are obtained work methods will be reviewed and changed as necessary.

3.1.4 Monitoring

Ambient air quality monitoring shall be conducted by the Contractor throughout the contract period. The purpose of the monitoring shall be to monitor the Contractor's compliance with ambient air quality standards at the boundaries of the site, and to demonstrate that site works undertaken by the Contractor have not adversely impacted surrounding areas.

- Monitoring shall involve dust monitoring, odour assessments and explosive gases (methane).
- Dust control measures will be monitored by qualitative assessment (i.e. visual inspection) and air quality monitoring. Visual assessments will be conducted at the start of each new construction activity. Quantitative air quality monitoring will be conducted on a monthly basis.
- Odour assessment should be performed prior to, during and completion of the proposed waste relocation works as required. Explosive gas monitoring will be conducted over areas where waste or leachate has been exposed at the commencement of an activity.

3.1.5 Corrective Action

The ambient air quality shall be considered to be unacceptable should any one result fail to meet the air quality standards.

In the event that the ambient air quality is found to be unacceptable, the Contractor shall immediately instigate works to rectify the ambient air quality in order that it reaches an acceptable quality within the shortest time period. Rectification of the ambient air quality shall initially involve the suspension by the Contractor of any activity that is contributing to the generation of unacceptable dust, odours, explosive gases.

3.2 Water Quality

3.2.1 Environmental Aspects and Impacts

Water quality impacts are most likely to be caused by:

- Haul Road Erosion
- Erosion of stockpiles
- Erosion due to vegetation removal during construction
- Off site impact by contaminated runoff

3.2.2 Requirements

The Contractor will include procedures for management of water to meet the following objectives:

- To prevent surface run off from becoming contaminated as a result of soil disturbance or contact with waste.
- To control erosion and sediment transport from the site, and thereby minimise the potential for off-site contamination of surface water by sediment.
- To control and manage run off in sediment control ponds prior to discharge from the site.
- To minimise potentially contaminated groundwater entering excavations.

3.2.3 Management Strategy / Control Measures

Surface water on this project falls into 3 categories as follows:

- ‘Clean’ stormwater – all water which falls on undisturbed areas of the site
- ‘Dirty; stormwater – all water which falls over disturbed areas. (i.e. cleared for construction or stockpiles of uncontaminated material) areas and is potentially contaminated with gross pollutants, sediments, etc.
- ‘Leachate’ – all water which falls over areas of exposed waste

Control and Management of “Clean” Stormwater

All “clean” stormwater shall be managed in accordance with the requirements of DECC, 2008, Managing Urban Stormwater, Soils and Construction, Volume 2B Waste Landfills, June 2008

“Clean” stormwater within the site shall be allowed to discharge directly into the existing natural drainage system with no treatment and/or containment required. “Clean” stormwater runoff will be diverted around disturbed areas to minimise the volume of “dirty” water generated.

The Contractor shall intercept and redirect runoff in a controlled manner by any appropriate means including but not limited to, use the existing drainage, construct new drains and temporary bunds to direct stormwater runoff from up-gradient around any construction onsite.

The Contractor may be allowed to use existing stormwater management infrastructure following negotiation with Enviroguard.

Control and Management of "Dirty" Stormwater

All "dirty" stormwater shall be managed in accordance with the requirements of DECC, 2008, Managing Urban Stormwater, Soils and Construction, Volume 2B Waste Landfills, June 2008

The Contractor shall implement the following control measures to manage "Dirty" Stormwater impacted by sediment as a minimum:

- Construction of temporary sediment ponds with disposal by:
  - Evaporation from the pond surface
  - Use for dust suppression
  - Use for irrigation of revegetated areas
  - Treated to remove the suspended solids and minor gross pollutants and disposal to the natural drainage system
- Erosion and sediment control must be installed prior to any earthworks or site disturbance.
- Construct upslope diversion drains to collect and divert clean water around the active construction areas. Diversions must be installed and maintained to prevent off-site surface water run-off from entering disturbed areas of the site.
- Keep working face and areas of open excavation to a minimum.
- Do not place stockpiles within 30 metres of any watercourse.
- Place an effective combination of sediment filters, barriers and/or basins at the down slope boundary of all disturbed areas. Place silt fence/erosion controls around stockpiles.
- Stabilise all disturbed areas as soon as practicable. Temporary vegetative destabilisation techniques must be applied to any disturbed soil to prevent areas remaining bare for more than 28 days.
- Stabilise all temporary and permanent drainage immediately.
- Maintain all sediments and erosion control measures in effective condition until the works are completed and the site is stabilised.
- Clean sediment traps when their capacity is reduced by 30 percent.
- Bund fuels, oils, paints, and other chemicals onsite to comply with the requirements of;
  - AS1940B 1993: The Storage and handling of Flammable and Combustible Liquids
  - AS4452B 1997; The Storage and Handling of Toxic Substances
  - *Dangerous Goods (Roads and Rail Transport) Act 2008*
- Bunds must be fitted with an impervious floor and must not be fitted with a drain valve.
- Construct vehicular crossings in a manner that prevents sediment from washing into the water course or stream.

- Remove accidental spills of soil or other materials.
- Release “Dirty” Stormwater, captured and stored by sediment and erosion control measures or site works, after treatment and testing to confirm compliance with relevant criteria.
- Rapid re-vegetation of exposed areas where possible.

Control and Management of Leachate

All leachate shall be managed in accordance with the requirements of DECC, (2008) Managing Urban Stormwater, Soils and Construction, Volume 2B Waste Landfills, June 2008 and NSW EPA (1996) Environmental Guidelines, Solid Waste Landfills, January 1996.

The general requirements for managing leachate are outlined in the following points:

- All leachate will be diverted to the leachate management system on site.
- Progressive construction of bunds around areas which can give rise to leachate to direct control and direct surface waters away from any exposed waste areas.
- Progressive covering of waste to minimise the available catchment area for the generation of leachate.
- Diversion of upgradient surface waters prior to coming in contact with areas which can give rise to leachate.

3.2.4 Monitoring

The Contractor shall regularly inspect the conditions and integrity of protection works at a frequency not less than:

- Prior to the commencement of each working day
- At hourly intervals throughout major storm events
- Prior to the re-commencement of work following rainfall of more than 1 mm

At each inspection the Contractor shall record the condition of the protective works, their performance, the extent of any maintenance, and the need for any additional works.

Surface water quality monitoring should be undertaken in accordance with the site EPL. The objective of the surface water monitoring is to effectively monitor and report surface water character and ensure early detection and reporting of possible pollution to surface water.

The water quality shall be considered to be unacceptable should any one result fail to meet the water quality standards. In the event that the water quality is found to be unacceptable, the Contractor shall immediately instigate works to rectify the water quality in order that it reaches an acceptable quality within the shortest time period.

The Contractor shall regularly inspect the conditions and integrity of protection works at a frequency not less than:

- Prior to the commencement of each working day
- At hourly intervals throughout major storm events
- Prior to the re-commencement of work following rainfall of more than 1 mm

At each inspection the Contractor shall record the condition of the protective works, their performance, the extent of any maintenance, and the need for any additional works.

3.2.5 Corrective Actions

If water quality exceeds site criteria the Contractor shall identify mechanisms to identify and address the cause of any sediment dispersion or leachate runoff.

3.3 Erosion and Sediment

3.3.1 Conditions of Approval

Condition 11 of DA05/1740 requires the following in relation to Erosion and Sediment Control.

Erosion and sediment control measures shall be installed ***prior to the commencement of works on site*** *including approved clearing of site vegetation. The erosion and sediment control measures are to be maintained* ***in*** *accordance with the approved erosion and sediment control plan(s) for the development and the Department of Housing's "Managing Urban Stormwater: Soils and Construction" 2004. (Note: To obtain a copy of the publication, you should contact Landcom on (02) 98418600).*

Certification that the erosion and sediment control measures have been installed ***in*** *accordance with the approved erosion and sediment control plan (s) for the development and "Managing Urban Stormwater: Soils and Construction 2004" shall be obtained and issued a minimum 2 days before any other site works are to commence, including earthworks and clearing of the site.*

The approved sediment and erosion control measures are to be installed ***prior to and maintained throughout. the construction phase of the development until the land, that was subject to the works, have been stabilised.*** *These measures shall ensure that mud and soil from vehicular movements to and from the site does not occur during the construction of the development.*

3.3.2 Environmental Aspects and Impacts

Impacts on erosion and sediment are most likely to occur during major rainfall events and heavy wind. The Contractor may combine the erosion and sediment controls with stormwater controls as these two issues are strongly correlated.

3.3.3 Requirements

Soil and erosion controls will meet the objectives of DECC, 2008, Managing Urban Stormwater, Soils and Construction, Volume 2B Waste Landfills, June 2008 and Condition 11 of DA05/1740.

Management of erosion and sediment will meet the following objectives:

- To control soils released as a result of site excavations and the handling, including stockpiling, loading and/or placement of site and imported materials.
- To control erosion and potential sediment transport from the site.
- To minimise the extent of soil transport and erosion by heavy machinery.

3.3.4 Management Strategy / Control Measures

Soil and erosion management during the construction activities may be controlled by:

- Construction of earth bunds and similar diversion drains around the perimeter of construction areas where surface disturbance occurs, to prevent surface water entering these areas.
- Erection of silt fences or straw bales at strategic locations (i.e. around stockpiles) to prevent the migration of fines.
- Construction of temporary sediment retention ponds.

- Installation of water recycling equipment for dust suppression as needed.
- Minimising the surface area disturbed by construction activities at any one time.
- Regular inspection and maintenance of erosion control structures.
- Protecting and retaining surface cover where possible.
- Restricting vehicles to designated access roads and paths where possible.
- Removing soil adhering to the wheels and undercarriage of trucks (e.g. by wheel wash) prior to departure from the site.

In addition, every effort will be made to limit both the site of any stockpile footprints and the time between excavation and removal off-site of materials.

3.3.5 Monitoring

The Contractor shall regularly inspect the conditions and integrity of erosion protection works at a frequency not less than:

- Prior to the commencement of each working day
- At hourly intervals throughout major storm events
- Prior to the re-commencement of work following rainfall of more than 1 mm

At each inspection the Contractor shall record the condition of the protective works, their performance, the extent of any maintenance, and the need for any additional works.

Surface water quality monitoring should be undertaken in accordance with the site EPL.

3.3.6 Corrective Actions

If water quality exceeds site criteria the Contractor shall identify mechanisms to identify and address the cause of any erosion and sediment dispersion.

3.4 Noise

3.4.1 Environmental Aspects and Impacts

Noise pollution will most likely be caused by plant and equipment during construction or traffic to and from the Site.

Sensitive Receivers

The nearest sensitive receivers have been identified based upon aerial photos and site visits and are considered to be the most likely noise sensitive receivers to be impacted by the Project based on the attenuation of noise at this location. The noise sensitive receivers are shown in Figure B and Figure D of the Acoustic RB (2020) “Environmental Noise Impact Assessment of Airspace Modification: Erskine Park Landfill, Erskine Park” (RB/20-1160.R01) and are identified as follows:

- Two residences to the north of Erskine Park Landfill (55 Coowarra Drive and 66 Chameleon Drive);
- 19 Mandalong Close Orchard Hills
- 21A Mandalong Close, Orchard Hills
- 573 Mamre Road, Orchard Hills

- 674 Mamre Road, Kemps Creek
- Three residences at 61-109 Bakers Lane Kemps Creek; and
- 59 Bakers Lane Kemps Creek.

3.4.2 Requirements

The objective of noise management measures will:

- Identify best management practice techniques to minimise noise from the construction and operation of the project; and
- adhere to regulatory limits for noise emissions.

Measures shall be undertaken by the Contractor to minimise the generation of noise from within the site. The Contractor shall use the best available technology and the best practicable means to prevent or mitigate the effects of noise emission from the works, and shall be prepared to demonstrate that plant, equipment and methods comply with these requirements at all times.

Project Noise Limits

The noise limits for the project set out EPL 4865 are as follows:

Table 1: Noise impact assessment criteria dB(A)

Residential Receiver Location	Day $L_{Aeq\ (day)}$
Mamre Road Residence	45
Erskine Park Road Residence	54

The Acoustic RB (2020) “Environmental Noise Impact Assessment of Airspace Modification: Erskine Park Landfill, Erskine Park” (RB/20-1160.R01) identifies there is no difference or change to the level of noise emissions from the site arising from construction of the Project.

3.4.3 Management Strategy/Control Measures

The Contractor is responsible for implementing all noise migration measures required by the CEMP from the start of construction. The Contractor will be responsible or limiting all noise produced on site.

The Contractor shall use the best practical means to minimise noise levels in all sections of work.

The Contractor will include construction noise issues in site induction of staff and sub-contractors. This will include communication of the restrictions on hours of construction, the number and types of known sensitive receivers and their location relative to the project site, and the requirements for implementing noise management set out below.

The Contractor shall implement the following control measures throughout the works:

- Standard construction working hours for normal construction of 7:00 am to 6:00 pm Mondays to Fridays and 8:00 am to 1:00 pm Saturdays. Blasting Monday to Friday 9am to 5 pm, Saturday 9am to 1pm. No construction works shall take place on Sundays or Public Holidays. These hours may be varied only with prior written consent of the EPA, which may be requested in the event of COVID-19 measures and guideline requirements.
- All vehicles shall enter and leave the site in accordance with the site entry controls.

- Equipment will be selected on the basis of its noise performance and will comply with regulatory standards for noise generation.
- Vibrations generated on the site shall be within relevant noise control guidelines.
- Emergency work may be carried out by the Contractor which is required outside the specified hours provided;
  - The site superintendent is satisfied that the proposed work is of an essential nature and cannot be carried out during specific hours.
  - The Contractor submits a report summarising the event to the Site Superintendent within 48 hours after the event commenced.

3.4.4 Monitoring

A noise monitoring program shall be conducted by the Contractors at the site throughout the construction period to monitor compliance with the noise emissions limits.

The following noise monitoring will be undertaken:

- Periodic noise monitoring at nominated sensitive receiver locations as identified within the EPL to determine effectiveness of mitigation measures against predicted impacts. Monitoring will include:
  - Compliance noise monitoring at the start of construction activities and subsequently on a monthly basis while significant noise generating activities are being undertaken
- Random spot checks of noise intensive plant and equipment if required, will be undertaken at project commencement and throughout construction to ensure compliance with the manufacturers specifications.
- Details of site activity and equipment usage will be noted during construction noise monitoring including the locations of mobile plant.
- Acoustic instrumentation employed in the use of noise monitoring surveys will comply with the requirements of AS1259.2-1990 Acoustics – Sound Level Meters, Part 2: Integrating – Averaging and carry appropriate NATA (or manufacturer) calibration certificates.

Noise monitoring reports will be prepared which will include the following information:

- locations and description of monitoring undertaken
- tabulation of results and notes identifying the principle noise sources and operations
- summary of any measurements exceeding the noise limits, and descriptions of the plant or operations causing these exceedences.
- details of any corrective actions and confirmation of their successful implementation.

3.4.5 Corrective Actions

Rectification of unacceptable noise levels shall initially involve the suspension by the Contractor of any activity that is contributing to the generation of unacceptable noise at the site. The rectification measures shall continue to be undertaken by the Contractor until the noise levels comply with the required limit.

3.5 Traffic and Public Roads Aspects and Impacts

3.5.1 Environmental Aspects and Impacts

As identified within the Traffix (2020) Traffic Impact Assessment Landfill Airspace Expansion, Quarry Road, Erskine Park (Ref 20.014r01v02), the site will continue to meet the approved average number of truck

movements per day to the site with the additional traffic movements generated during construction of the project.

The construction traffic management and vehicle circulation on the site is shown in Figure 3.

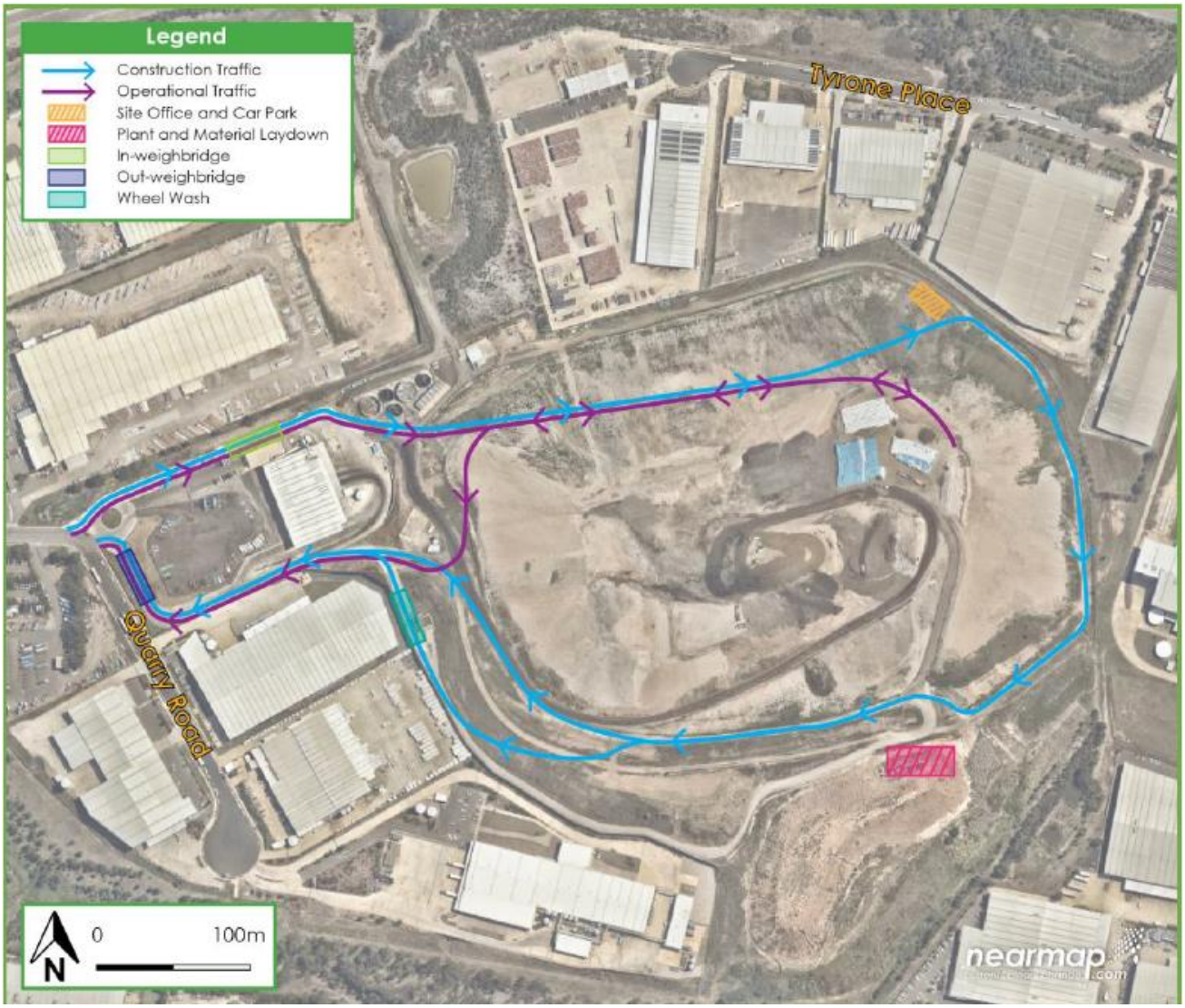

Figure 3: Vehicle circulation through the site (adopted from Traffix (2020) Traffic Impact Assessment Landfill Airspace Expansion, Quarry Road, Erskine Park Ref 20.014r01v02).

Condition of public roads adjacent to the Site will potentially be impacted by traffic travelling offsite.

3.5.2 Requirements

The objective of traffic management within the CEMP will be to undertake the works with regard to the safety and welfare of the general public and to alleviate the impact of traffic volumes of site access and traffic flow in the surrounding area.

3.5.3 Management Strategy/Control Measures

The Contractor would develop as a minimum the following control measures:

- Compliance with the requirements of Traffix (2020) Traffic Impact Assessment Landfill Airspace Expansion, Quarry Road, Erskine Park (Ref 20.014r01v02).

- Require all trucks travelling offsite to clean their tires and undercarriage of any loose soils.
- Ensure all trucks carrying loads offsite have covered any materials they are carrying.
- If necessary, stockpile materials on-site temporarily to regulate and control the truck movements.
- Retention of heavy equipment on-site where practicable.

All truck drivers carting materials to the site will be given a safety instruction brief. The brief will be concise and shall detail the procedures to be followed by the truck driver should spillage of loads occur. These will include, but not limited to:

- Vehicle Accident
- Mechanical Breakdown
- Rain commencing during transportation
- Payload (or other) loss

3.5.4 Monitoring

The Contractor shall implement a traffic Management Monitoring program at the site throughout the construction period to monitor compliance with traffic requirements.

3.5.5 Corrective Actions

Should road conditions near the Site go against the conditions established in the monitoring program, the Contractor shall restrict access to and egress from site until traffic conditions improve or the Contractor has addressed the violation.

3.6 Waste Management

3.6.1 Environmental Aspects and Impacts

Environmental impacts from waste are most likely to occur from impacted soils onsite and construction works.

3.6.2 Requirements

The Waste Management Plan for the site is Golder Associates (2020) Waste Management Plan: Erskine Park (19135652-009-Rev0) and provide measures:

- To comply with all relevant regulatory requirements;
- To minimise volumes of materials disposed off-site; and
- To recover or recycle materials where possible.

3.6.3 Management Strategy/Control Measures

The following waste management control measures will be implemented:

- The Contractor will abide and/or provide alternative improved approaches to the Golder Associates (2020) Waste Management Plan: Erskine Park (19135652-009-Rev0) .
- This would involve:
  - the pre-commencement identification of all waste streams, which will minimise waste from the site and wherever possible and reasonably practicable, recommend recovery and recycling.

- Identification of appropriately licensed waste transporters and waste management facilities for each waste stream.
- Implementation of a system for tracking of all waste movements including contaminated soils.

3.6.4 Monitoring

A waste management monitoring program shall be conducted by the Contractors at the site throughout the construction period to monitor compliance with the waste requirements.

3.6.5 Corrective Actions

Rectification of unacceptable waste handling and management procedures shall initially involve the suspension by the Contractor of any activity that is involved with waste management. The rectification measures shall continue to be undertaken by the Contractor until cleared by the Superintendent.

3.7 Contamination Management

3.7.1 Environmental Aspects and Impacts

Environmental impacts from contamination are most likely to occur from previously unidentified potentially contaminated soils onsite.

3.7.2 Requirements

Contamination Management shall provide measures:

- To comply with all relevant regulatory requirements
- To minimise volumes of materials disposed off-site

3.7.3 Management Strategy/Control Measures

The following contamination management control measures will be implemented:

- If required, EPA would be promptly notified of any suspected potentially contaminated ground that is exposed during construction activities;
- Advice would be immediately sought from a suitably qualified and experienced contaminated site consultant;
- Any suspected contaminated materials excavated during site works would be stockpiled on a sealed surface or on plastic sheeting. The stockpile would also be covered to prevent wind or rain removing any of the material. The stockpile would not be placed in the vicinity of sensitive environmental receivers such as vegetated areas. A spoon drain would be excavated on the downgradient side of the stockpile and any runoff would be appropriately treated prior to release.
- Stockpiles will be adequately secured to prevent unauthorised access.
- Stockpiled material would be sampled for testing. Reuse or disposal options would be based on the results of laboratory analysis in accordance with relevant legislation.
- Excavation of all confirmed contaminated material would and disposal of offsite in a suitably licenced facility in accordance with EPA requirements.
- Any workers who come in contact with suspected contaminated material would report the exposures and take appropriate precautions in terms of the project's adopted OH&S
- Disposal of any contaminated waste identified or generated during the works in accordance with EPA guidelines.

- If necessary, prepare and implement a Remedial Action Plan in accordance with EPA.

3.7.4 Monitoring

A contamination management monitoring program shall be conducted by the Contractors at the site throughout the construction period to monitor compliance with the contamination management requirements.

3.7.5 Corrective Actions

Rectification of unacceptable handling of suspected contamination material shall initially involve the suspension by the Contractor. The rectification measures shall continue to be undertaken by the Contractor until cleared by the Superintendent.

3.8 Hazardous Material Management

3.8.1 Environmental Aspects and Impacts

Due to the nature of the site, the Contractor may encounter hazardous material while conducting construction on site, in particular during excavation of waste. In accordance with the EPL, ACM is accepted at the site and while no hazardous waste is accepted, there is potential for this to be present on site.

3.8.2 Requirements

Hazardous materials requirements shall address:

- Procedure to follow if the Contractor does encounter hazardous waste material.
- Steps to be taken to minimise spread of hazardous waste.
- Ongoing monitoring and reporting records during construction.

3.8.3 Management Strategy/Control Measures

If hazardous waste is encountered during construction, the waste shall be identified and addressed appropriately (such as removed from the landfill and disposed of at an appropriate and licensed facility). The Contractor shall take appropriate measures to protect the health of workers and the impacts to the environment depending on the waste type encountered.

3.8.4 Monitoring

A hazardous materials monitoring program shall be conducted by the Contractors at the site throughout the construction period to monitor compliance with requirements for acceptable waste types.

3.8.5 Corrective Actions

Rectification of unacceptable handling of impacted material shall initially involve the suspension by the Contractor of any activity that is involved with the hazardous waste materials. The rectification measures shall continue to be undertaken by the Contractor until cleared by the Superintendent.

3.9 Excavation of Waste

3.9.1 Description

The Project requires some excavation of waste and construction over landfilled areas. Landfilled waste may potentially be exposed and /or excavated during these activities and the excavated and exposed waste will require management by the Contractor.

3.9.2 Environmental Aspects and Impacts

Environmental impacts from exposed waste may arise from, amongst others:

- Contaminated surface water runoff;

- Landfill fires;
- Landfill gas (fire, explosion, toxicity to workers, odour);
- Odour emissions; and
- Encountering hazardous materials.

3.9.3 Requirements

The Waste excavation shall be in prepared in accordance with all relevant legislation and guidelines. In particular, the requirements of the following guidelines and management plans shall be adhered to:

- DECC, 2008, Managing Urban Stormwater, Soils and Construction, Volume 2B Waste Landfills, June 2008; and
- NSW EPA (2016) “Environmental Guidelines: Solid Waste Landfills 2016 2nd edition”.

3.9.4 Management Strategy / Control Measures

The waste excavation shall be undertaken to address the following management and control measures:

- Works shall be conducted to avoid exposure of waste.
- Any area of exposed waste shall be limited at any given time.
- Odour will be minimised by covering excavation areas with minimum 150 mm soil as soon as the waste exposure has been identified.
- Leachate sumps may be needed in local areas if perched leachate is encountered. The leachate collected at sumps will be pumped to the existing landfill leachate system.
- Temporary dams may be needed to prevent leachate runoff from exposed waste areas (all water in contact with waste would have to be managed as leachate). Collected leachate would be direct to the existing leachate management system.
- Any excavated landfill waste shall be relocated to the active tipping face. For disposal of any significant quantities at the site (as determined by the Superintendent), traffic management for this activity will be required to be prepared and implemented by the Contractor.
- Landfill gas emissions will be monitored during the works in any exposed waste areas. If elevated readings are obtained work methods will be reviewed and changed as necessary.
- Diversion bunds will be constructed at the top of batters prior to excavation to stop clean surface runoff water running down excavation batters and onto the excavation floor and becoming impacted by the waste.
- If buried hazardous wastes are encountered during the process of excavating waste material work will stop until the nature of the hazardous materials and extent can be identified and management strategy developed.

3.9.5 Monitoring

Air, dust, water, noise and odour monitoring as outlined in the previous section of this report shall be carried out.

3.9.6 Corrective Actions

If a non-compliance with waste excavation occurs, the non-compliance shall be rectified and the control measures shall be reviewed and improved where possible.

3.10 Archaeological and Heritage

3.10.1 Environmental Aspect and Impact

Impact on archaeological and heritage sites may result from excavation of undiscovered objects during construction.

3.10.2 Requirements

The Archaeological and Heritage Protection measures shall provide details on:

- Procedure to follow if the Contractor does encounter archaeological or heritage items.
- Steps to be taken to minimise impact to heritage items should they be uncovered.

The Contractor shall undertake and manage all site works to ensure compliance with these requirements.

3.10.3 Management Strategy/Control Measures

The following contingency measures would address the discovery of unanticipated heritage material at the site.

- Should indigenous or non-indigenous cultural material be identified during any works, construction and/or operation will cease in the vicinity of the find and the appropriate representative at EPA will be contacted.

3.11 Flora and Fauna Protection

3.11.1 Environmental Aspects and Impacts

Impact on flora and fauna may result from vegetation removal.

3.11.2 Requirements

Assessments of Significance have concluded, providing recommended avoidance and mitigation measures are adhered to the Project is considered unlikely to have a significant impact on identified threatened species, populations and/or existing habitat at the Site.

3.11.3 Management Strategy/Control Measures

The Contractor shall:

- Minimise vegetation clearance;
- Follow the requirements of the Site Vegetation Management Plan during clearing of vegetation
- Remove and stockpile topsoil at the construction and excavation sites. At completion of works, ensure topsoil is re-laid to facilitate re-establishment of vegetation and expedite recovery time;
- Ensure construction activities are confined within the construction zone of the development area to minimise disturbance of sediments and vegetation.
- Installation of sediment and erosion controls as required including for potential indirect impacts to retained native vegetation.
- Ensure machinery parking, equipment or materials storage compounds, temporary stockpiling of excavated material and work areas are well outside sensitive natural features including retained native vegetation, wetlands and drainage line.
- Undertake revegetation of cleared and disturbed areas using a range of native species of local provenance for the purpose of managing weeds, controlling soil erosion, and maintaining fauna habitat.
- Maintain suitable buffer distances from nearby waterways. These buffer distances are recommended based on the stream orders of waterways and the subsequent categories identified within the Penrith DCP.

4.0 EMERGENCY RESPONSE MANAGEMENT

Emergency response measures shall be developed and implemented by the Contractor. Emergency response procedures shall be designed to minimise the impact of any contaminant release. In preparing these measures the Contractor shall undertake an assessment of the emergency scenario and the procedures to be followed by site personnel and the training of site personnel in emergency response techniques.

Materials and equipment to be used by the Contractor for emergency response must be present and in an operational state at all times during the works under this contract in sufficient quantities to ensure that all likely contingencies can properly be managed immediately.

4.1 Training

The Contractor is responsible for training all necessary staff of the procedures required by the CEMP. Prior to commencing work, all staff will undergo a Site Induction that includes a review of the CEMP.

All employees, Contractors and consultants will be required to provide evidence of appropriate licenses or permits to operate machinery or other equipment required to perform their work on the site.

The Contractor or his delegate will retain site induction records, evidence of appropriate licenses or permits, and other documents as necessary as training records for the project.

4.2 Environmental Awareness Site Induction

All construction personnel will be required to undertake an Environmental Awareness Site Induction. The Site Induction will cover the requirements of the CEMP. The Site Induction will include the requirements of the CEMP and in particular highlight the following:

- Air Quality – requirements for dust management, vehicle speed limits and wheel washing
- Water Quality – requirements for separation of waters and erosion protection
- Noise – limits on construction hours and other requirements set out under Noise Management
- Traffic – nominated truck routes, requirements for large vehicle floats and no queuing on public roads
- Waste – waste tracking requirements and requirements for construction on waste
- Contamination – management of contaminated soils and water
- Hazardous Materials – management of hazardous materials if encountered
- Heritage – procedures in the event of discovery of unanticipated heritage material at the site
- Flora and Fauna – awareness of biodiversity values of area, responsibilities under legislation and vegetation clearing protocol.

5.0 RECORDS

The Contractor is responsible for establishing, documenting and maintaining a quality system to ensure that all Contract requirements are achieved. The Contractor will also prepare a quality manual consisting of the requirements of the international standard.

6.0 REPORTING

The Contractor is responsible for reporting on progress of implementations of the CEMP throughout construction. The Contractor should prepare a report for any milestones established as well as regular progress meetings with the Site Superintendent.

7.0 COMPLAINTS

Complaints from the community in relation to construction activities will be received through the existing landfill operations complaints process, logged on a complaints record, and if determined to being associated with construction activities, will be passed on to the Contractor for appropriate consideration and action. Complaints records are maintained for the site to meet Environment Protection Licence requirements. A description of the complaints management process for the site is provided below.

7.1 Management Strategy, Tasks and Actions

A complaints register will be maintained to log public complaints regarding odours, vermin, litter, dust and noise etc received. The date, time and nature of any complaint is recorded and the subsequent actions taken to help minimise or eliminate the concerns will be logged. Records are maintained on site and reviewed as part of the Annual Review by the Site Superintendent.

All staff will be trained in the requirement to notify and record any public complaints.

8.0 ENVIRONMENTAL MANAGEMENT AUDIT PROCESS

The Contractor shall undertake internal audits once each month to verify compliance with this CEMP.

An audit report shall be submitted by the Contractors to the site superintendent within 10 workings days of the audit.

The Contractors shall address each of the non-conformances identified in the audit report. The independent environmental auditor shall verify the satisfactory implementation of the corrective actions.

9.0 REFERENCES

Legislation

Environmental Planning and Assessment Act 1979

Protection of the Environment Operations Act 1997

Waste Avoidance and Resource Recovery Act 2001

Contaminated Lands Management Act 1997

Roads Act 1993

Rural Fires Act 1997

Biodiversity Conservation Act 2016

Heritage Act 1977

Fisheries Management Act 1994

Water Management Act 2000

Environmentally Hazardous Chemicals Act 1985

Dangerous Goods (Roads and Rail Transport) Act 2008

Policy and Documents

Acoustic RB (2020) “Environmental Noise Impact Assessment of Airspace Modification: Erskine Park Landfill, Erskine Park” (RB/20-1160.R01)

DECC, 2008, Managing Urban Stormwater, Soils and Construction, Volume 2B Waste Landfills, June 2008

Golder Associates (2020) “Hazard and Risk Analysis: Erskine Park” (19135652-012-R-Rev0)

Golder Associates (2020) “Waste Management Plan: Erskine Park” (19135652-009-Rev0)

Golder Associates (2020) “Preliminary Site Investigation: Erskine Park” (19135652-016-Rev0)

Landcom (2004) “Managing Urban Stormwater: Soils and Construction (Blue Book)”

NSW EPA (2017) “Noise Policy for Industry (2017)”

NSW EPA (2016) “Environmental Guidelines: Solid Waste Landfills 2016 2nd edition”

NSW EPA (2007) “Waste Avoidance and Resource Recovery Strategy 2007”

NSW EPA, (1996) *Environmental Guidelines, Solid Waste Landfills*, January 1996

Penrith City Council (2017) “Penrith Waste and Resource Strategy (2017-2026)

The Odour Unit (2020) “Mechanically Stabilised Earth (MSE) Wall – Erskine Park Landfill Air Quality & Odour Impact Assessment Study”

Traffix (2020) Traffic Impact Assessment Landfill Airspace Expansion, Quarry Road, Erskine Park (Ref 20.014r01v02).

Signature Page

Golder Associates Pty Ltd

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Principal Planner

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Principal Engineer

TR/JM/tr

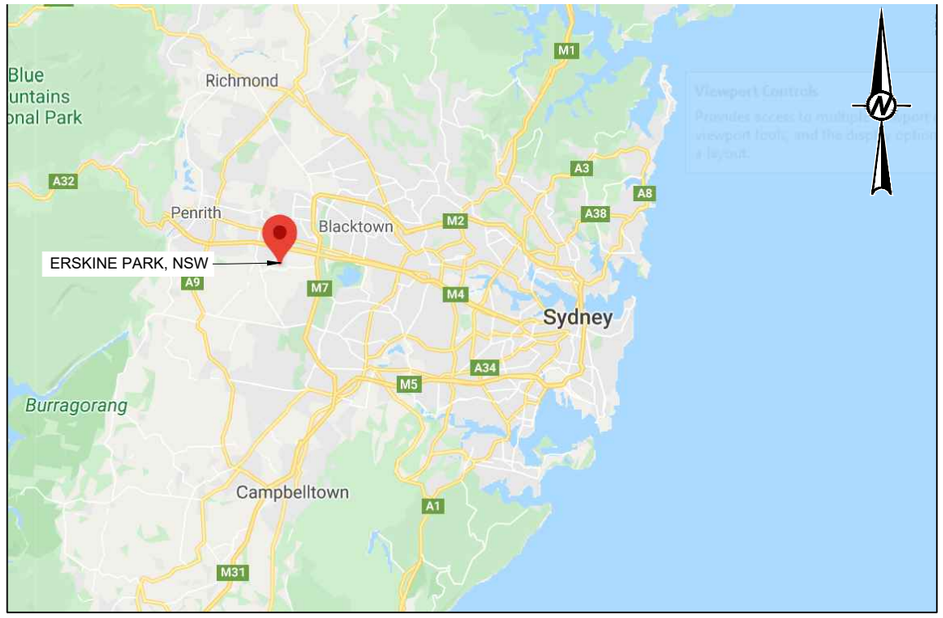
A.B.N. 64 006 107 857

https://golderassociates.sharepoint.com/sites/120150/project files/6 deliverables/19135652-017-r-cemp/19135652-017-r-rev1 cemp.docx

APPENDIX A

Figures

REGION



SITE LOCATION

NOTE(S)
NOT TO SCALE

NOT FOR CONSTRUCTION

DRAFT

CLIENT
ENVIROGUARD PTY LTD.

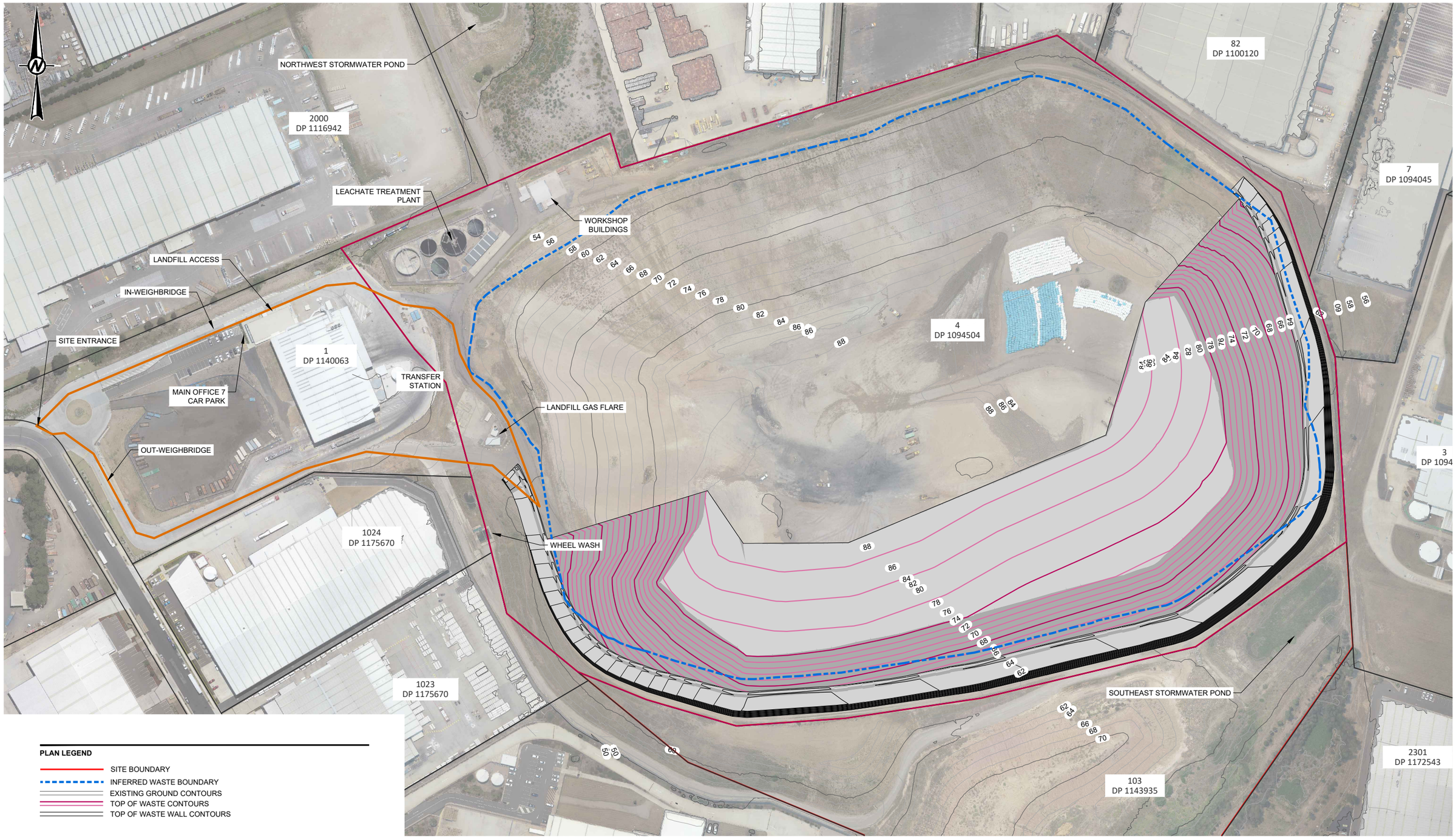
PROJECT
ERSKINE PARK LANDFILL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-04-08
DESIGNED	UP
PREPARED	JF
REVIEWED	JM
APPROVED	JM

TITLE
SITE LOCATION PLAN

PROJECT NO.	CONTROL	REV.	FIGURE
19135652	017	0	F001



PLAN LEGEND

- SITE BOUNDARY
- INFERRED WASTE BOUNDARY
- EXISTING GROUND CONTOURS
- TOP OF WASTE CONTOURS
- TOP OF WASTE WALL CONTOURS

0 50 100
1:2,500 METRES

NOT FOR CONSTRUCTION

DRAFT

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
0	2020-04-08	NOT FOR CONSTRUCTION DRAFT	UP	JF	JM	JM

CLIENT
ENVIROGUARD PTY LTD.

PROJECT
ERKSINE PARK LANDFILL

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TITLE
SITE LAYOUT PLAN

PROJECT NO.	CONTROL	REV.	of	FIGURE
19135652	017	0		F002

APPENDIX B

Study Limitations

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

This Report constitutes or is part of services ("Services") provided by Golder to its client ("Client") under and subject to a contract between Golder and its Client ("Contract"). The contents of this page are not intended to and do not alter Golder's obligations (including any limits on those obligations) to its Client under the Contract.

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This Report has been prepared in the context of the circumstances and purposes referred to in, or derived from, the Contract and Golder accepts no responsibility for use of the Report, in whole or in part, in any other context or circumstance or for any other purpose.

The scope of Golder's Services and the period of time they relate to are determined by the Contract and are subject to restrictions and limitations set out in the Contract. If a service or other work is not expressly referred to in this Report, do not assume that it has been provided or performed. If a matter is not addressed in this Report, do not assume that any determination has been made by Golder in regards to it.

At any location relevant to the Services conditions may exist which were not detected by Golder, in particular due to the specific scope of the investigation Golder has been engaged to undertake. Conditions can only be verified at the exact location of any tests undertaken. Variations in conditions may occur between tested locations and there may be conditions which have not been revealed by the investigation and which have not therefore been taken into account in this Report.

Golder accepts no responsibility for and makes no representation as to the accuracy or completeness of the information provided to it by or on behalf of the Client or sourced from any third party. Golder has assumed that such information is correct unless otherwise stated and no responsibility is accepted by Golder for incomplete or inaccurate data supplied by its Client or any other person for whom Golder is not responsible. Golder has not taken account of matters that may have existed when the Report was prepared but which were only later disclosed to Golder.

Having regard to the matters referred to in the previous paragraphs on this page in particular, carrying out the Services has allowed Golder to form no more than an opinion as to the actual conditions at any relevant location. That opinion is necessarily constrained by the extent of the information collected by Golder or otherwise made available to Golder. Further, the passage of time may affect the accuracy, applicability or usefulness of the opinions, assessments or other information in this Report. This Report is based upon the information and other circumstances that existed and were known to Golder when the Services were performed and this Report was prepared. Golder has not considered the effect of any possible future developments including physical changes to any relevant location or changes to any laws or regulations relevant to such location.

Where permitted by the Contract, Golder may have retained subconsultants affiliated with Golder to provide some or all of the Services. However, it is Golder which remains solely responsible for the Services and there is no legal recourse against any of Golder's affiliated companies or the employees, officers or directors of any of them.

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Any uncertainty as to the extent to which this Report can be used or relied upon in any respect should be referred to Golder for clarification

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