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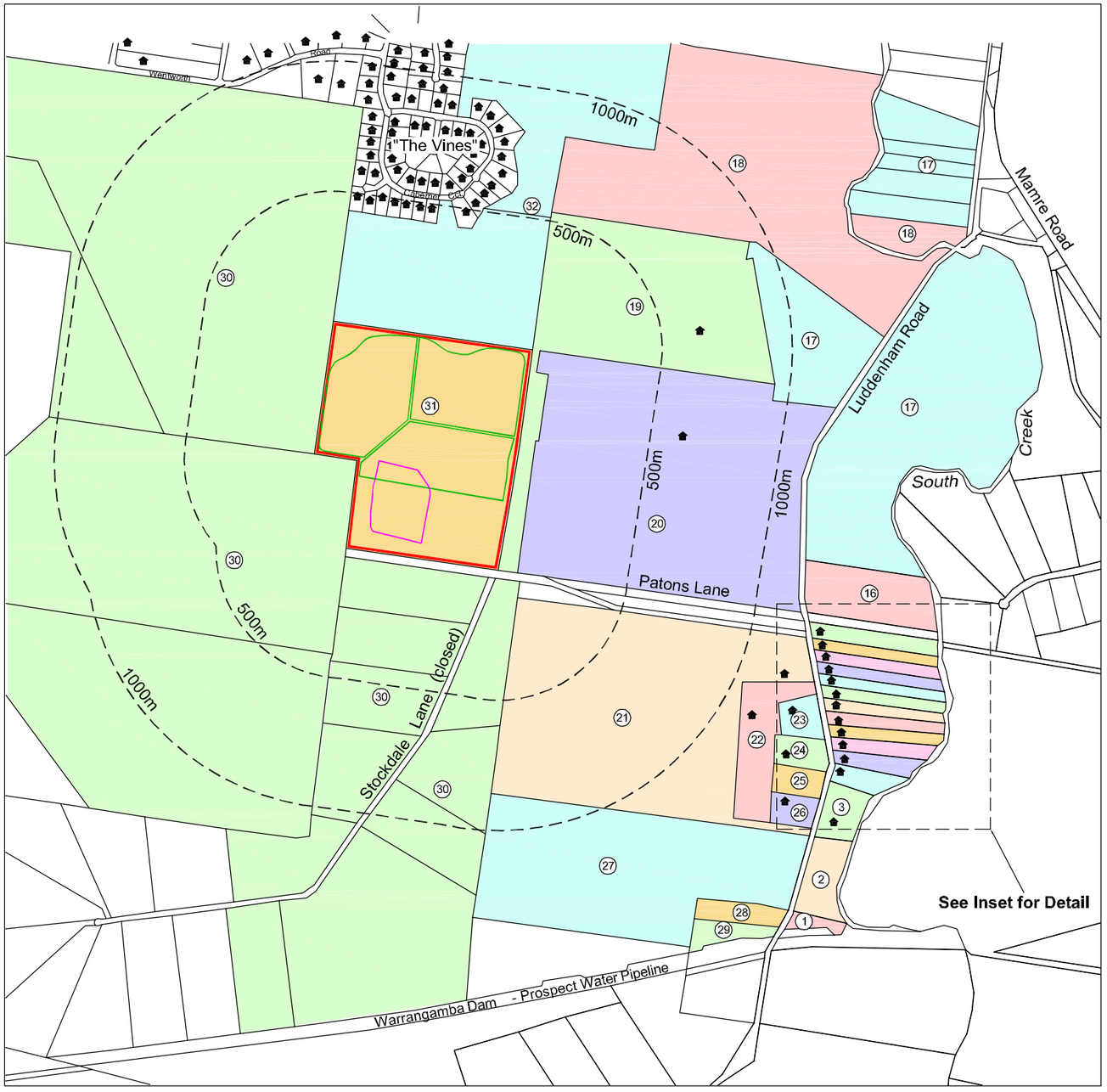
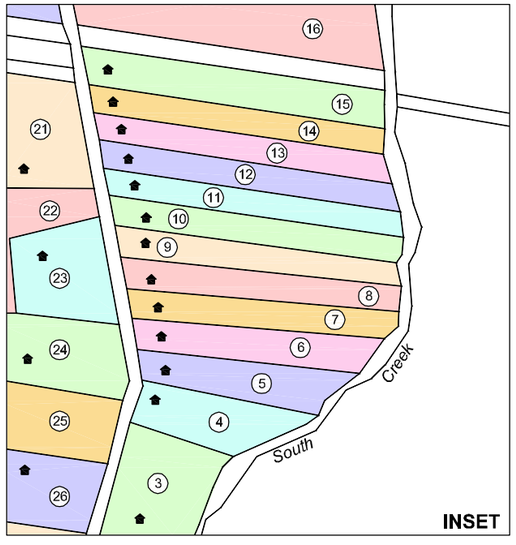


Land Owner Reference Schedule

No.	Owner	Lot / DP Number
1	A.J. & A.L. Carroll	1001/1036836
2	Mandalong Investments Pty Limited	1/111726
3	B.G. & L. Diggins	83/718828
4	I. Ovchinnikov	82/718828
5	P.J. & J.A. Rapa	815/734793
6	C.J. Sultana & C.P. Taylor	814/734793
7	M.A.G. Bell	8/28214
8	W.R. & M.R. Brown	7/28214
9	J. & D.L. Ormshaw	6/28214
10	A.P. Owen	5/28214
11	N.P. & D.M. Burgess	4/28214
12	R.A. & M.C. Robinson, J.F. & M.A. Doyle	3/28214
13	J. & B. Van Schelven	2/28214
14	J.J. & K. Mifsud, W.A. & K.A. Burgess	1/28214
15	J. & K. Mifsud	92/752022
16	J. & S. Balkema	1/547057
17	Minister Administering the EP & A Act 1979	1A/164099,1B/164099, 3/162900, 2/529668, 2/547057, 21/589547
18	Associated Dairies (St Marys) P/L	4/162900, A/403454
19	V.W. & Y.D. Bates	42/738126
20	Eric Newham Holdings Pty Limited	5/521268
21	Darley Australia Pty Limited	1/1099147
22	Croatian Culture Association	1/396972
23	E. Nahlous	1/520117
24	N.E. & B.L. Middlebrook	2/520117
25	M. & S. Cassar	3/520117
26	S. & S. Nahlous	4/520117
27	The Trustees of the Lebanese Maronite Missionary	242/1088991
28	J. & J.R. Dimech	2/219794
29	H.L. Kennett	2/629326
30	The Commonwealth of Australia	2/238092, 1/242968, 2/242968, 4/242968, 5/242968, 6/242968,
31	Dellara Pty Limited	7/242968, 8/242968, 2/586093, 11/598345, 1/629326
32	Vacik Pty Limited	40/738126 42/846098, 53/846098

(Source: NSW Department of Lands)



REFERENCE
- Project Site Boundary
- Cadastral Boundary
- (17) Land Owner Reference
- Residence
- Proposed Limit of Recycling and Re-processing Area
- Indicative Waste Emplacement Cell Boundary

SCALE 1:20 000

200 0 200 400 600 800 1000 m

Figure 2.2
SURROUNDING LAND OWNERSHIP AND RESIDENCES

The Proponent's preliminary market evaluation suggests that, once the facility is fully operational, approximately 50% of the waste received (150 000t per year on average) on site would be suited to re-processing and recycling.

3.4 Recycling and Re-processing Operations

3.4.1 Introduction

Waste loads received at the facility that are classified as containing material capable of being recycled would be directed through a recovery and re-processing process. The following subsections provide an overview of the likely recycling and re-processing plant design and operation, products produced and the handling of residual wastes.

3.4.2 Plant Design and Operation

As shown in **Figure 3.1**, the recycling and re-processing facility would be located within the southwestern corner of the Project Site covering an area of approximately 5.6ha. This area of the Project Site is the most accessible from Patons Lane and is, importantly located at the furthest distance to surrounding neighbours to the north and east. Furthermore, protection is provided by the existing perimeter bund walls that would assist to reduce potential amenity impacts. The area nominated as the recycling and re-processing facility on **Figure 3.1** would initially be backfilled to a level of approximately 56m AHD using general solid (non-putrescible) waste excavated from the northern bund wall and residual wastes from the initial mobile recycling and re-processing plant. This area would be effectively designed, constructed and managed as the initial waste cell in accordance with the information detailed in Section 3.5 of this document. Bund walls up to 6m high would also be constructed on the northern and eastern sides of the area (to a height comparable to the southwestern and southern bund walls). During the period of filling within the recycling and re-processing area, the recycling and re-processing plant would be mobile and relocated as required.

All trucks entering the Project Site would pass over the incoming weighbridge where the load would be inspected and loads able to be recycled would be directed to turn left into the recycling and re-processing facility. Any wastes not permitted to be received at the facility would not be accepted.

Within the recycling and re-processing facility, truck drivers delivering mixed loads would be directed to place their loads within a designated sorting area. Following delivery, these materials would be sorted and any materials unable to be recycled would be separated and loaded into a haul truck and taken back over the incoming weighbridge to the active waste emplacement area. Incoming trucks delivering loads comprising single waste types, eg. concrete, soil, etc. would be directed at the weighbridge to the relevant receival bay within the recycling and re-processing facility.

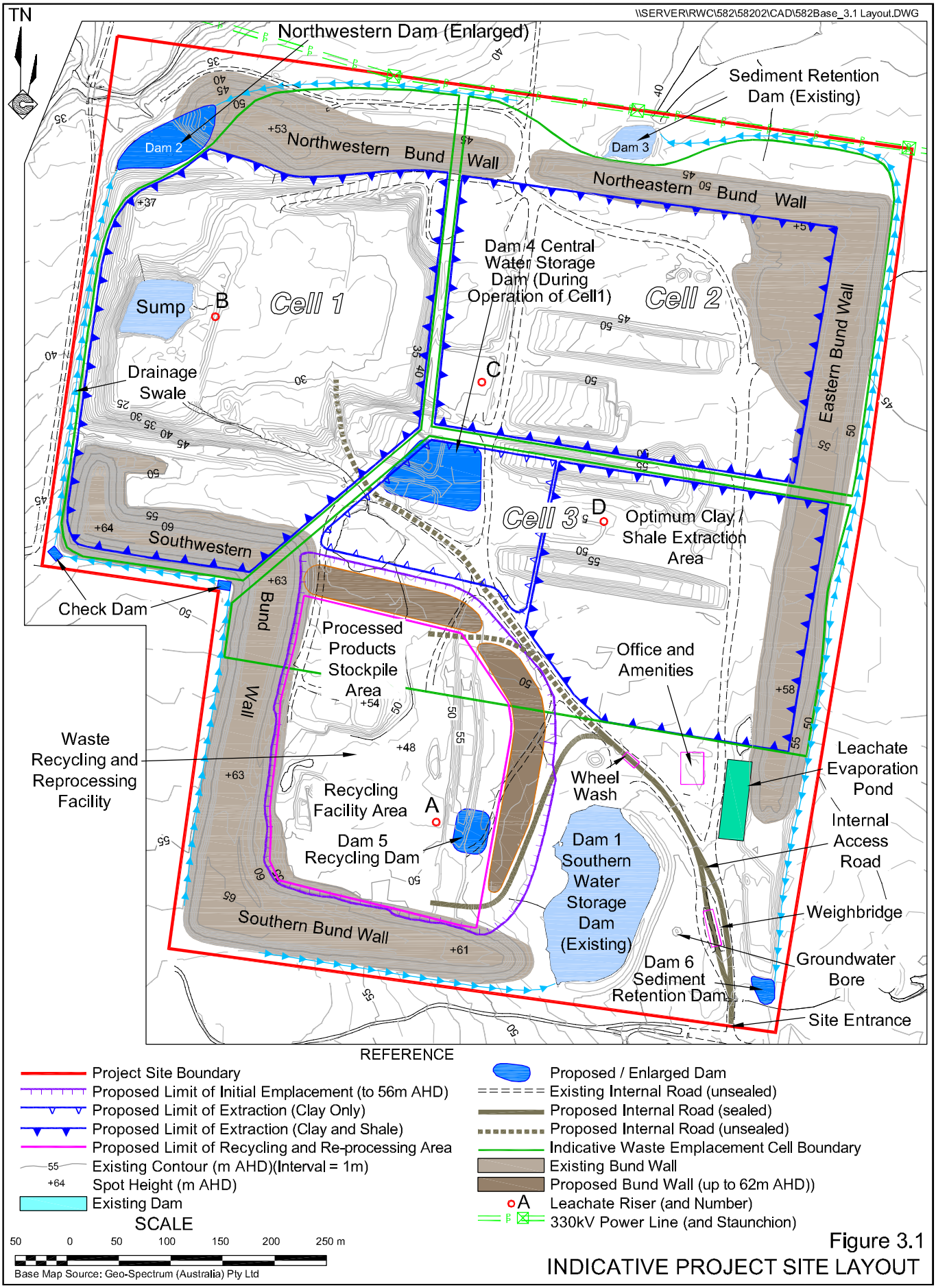


Figure 3.1
INDICATIVE PROJECT SITE LAYOUT

During sorting, steel would be recovered using magnetic separation, after which remaining recyclable material would be loaded either into either a trommel or a primary shredder, depending upon the type of waste. C&D waste would typically be passed through the trommel and effectively separated into recyclables (eg. bricks, concrete, etc.) and non-recyclable wastes. The recyclable materials would be stockpiled until sufficient quantities of materials accumulate after which they would be loaded into a simple crushing and screening circuit producing saleable aggregate and soil material. Any steel not recovered during sorting would also be recovered during this process.

C&I wastes would typically be passed through a shredder to reduce the size of the material after which the material would be passed through a trommel for separation. Depending on the market for the residual plastic and timber products, a secondary shredder may also be utilised for further size reduction, as required.

Other plants that may be utilised include eddie current separators which remove aluminium from waste streams and a waterbath to separate timbers from heavy materials.

The design of the recycling and re-processing plant will take into account the resource recovery exemptions available under the *Protection of the Environment Operations Act 1997*. The plant would also be reviewed annually taking into account any revisions to the targets provided within the Waste Strategy 2007. Currently, that design will aim to achieve a target recovery efficiency of 65% or greater, consistent with the target in the Waste Strategy 2007.

3.4.3 Products

Saleable products likely to be produced from the C&D recycling and re-processing would include the following.

- Recycled concrete.
- Standard fill (clean soil).
- Steel reinforcing.
- Ferrous metals.
- Varying sizes of aggregate (<12mm, 12mm to 35mm, 40mm to 75mm).

Saleable products likely to be produced from the C&I recycling and re-processing would include the following.

- Plastics.
- Cardboard.
- Woodchips (mulch/fired boilers)
- Green Wastes.
- Metal.

The resource recovery exemptions under the *Protection of the Environment Operations Act 1997* will be taken into account in producing the saleable products.

These items would either be stockpiled or stored within defined bays or storage enclosures located adjacent to the recycling plant for sale.

Throughout the life of the Project, new products would continue to be investigated as markets and additional resource recovery exemptions develop and new re-processing and recycling technologies become available. Such markets could include alternative fuel sources.

3.4.4 Residual Wastes

Following re-processing, the remaining residual wastes (ie. wastes that cannot be economically recycled or sold) would be loaded into a haul truck and taken back over the incoming weighbridge to the active waste emplacement area. Based on an average of 150 000tpa of waste received to site being suitable for re-processing and a recovery rate of 65%, an average of approximately 52 000t of residual wastes would be generated each year.

Additionally, as discussed in Section 3.3.2, materials that are unsuitable or uneconomical for recovery and recycling (eg. contaminated soil, waste containing asbestos and loads that cannot be physically sorted), would be directed at the weighbridge directly to the active waste emplacement area(s). The residual waste, whilst not being recovered, would be inspected to ensure compliance with the permitted waste classification able to be emplaced on site, ie. general solid (non-putrescible) waste and Special Waste (selected asbestos and tyres).

3.5 Ancillary Waste Emplacement

3.5.1 Introduction

The design and operation of the ancillary waste emplacement or landfill is based on achieving the environmental requirements nominated within:

- the *Protection of the Environment Operations Act 1997*; and
- the Environmental Goals in DECC's Environmental Guidelines: Solid Waste Landfills.

Additionally, a number of best practice environmental management techniques are proposed in the design and operation of the ancillary engineered waste emplacement to minimise the environmental impacts from the facility.

The following subsections outline the:

- concept design for the engineered waste emplacement cells;
- the operation of the waste emplacement;
- cell development;
- emplacement sequence;
- leachate management; and
- methane management.

3.5.2 Conceptual Design

The minimum design capacity (airspace) that is available to emplace waste on the Project Site (and its associated daily cover and capping) is approximately 4.8 million cubic metres (m^3) based upon the existing void space and the proposed final landform. Additional airspace would be created through ongoing extraction operations and sale of on-site clay and shale (see Section 3.6).

Subject to the volume of clay and shale extracted and despatched from site, the maximum design capacity could be as much as approximately 8.0 million m^3 ie. assuming extraction in Cells 1 and 2 and the eastern section of Cell 3 is undertaken to a depth of 28m AHD. Based upon approximately 50% (average 150 000tpa) of received material being suitable for re-processing and recycling, of which approximately 35% (52 000tpa) would constitute residual waste, approximately 202 000tpa of material on average would be emplaced each year. However, in some years, when large quantities of material that cannot be reprocessed or recycled (eg. contaminated soil) are received, emplaced tonnages may increase up to 500 000tpa.

Based on the DECC *Environmental Guidelines Solid Waste Landfills* target waste compaction of 0.85t/m^3 (excluding cover material) the average quantity of waste emplaced annually would equate to the use of approximately 240 000m^3 of air space each year. It is noted that greater compaction would likely be achieved for wastes such as contaminated soil material which would reduce the required air space per tonne of material received. It is anticipated that an average compaction rate of 1.0t/m^3 (excluding cover material) could be achieved equating to the use of an average of approximately 202 000m^3 of air space each year. Actual compaction rates achieved would be determined throughout operations and reported to the DECC.

The conceptual design of the ancillary engineered waste emplacement addresses the environmentally secure emplacement of waste classified as General Solid (non-putrescible) waste and selected Special Waste (selected asbestos and tyres) and encompasses the following principles and design elements.

Principle 1: Leachate will be contained to ensure that groundwater and surface water is not polluted off site.

The emplacement cells would be designed to meet the barrier requirements in DECC's *Environmental Guidelines: Solid Waste Landfills*. The base and the outer sides of cells would be lined with a compacted clay liner, where necessary (in accordance with DECC's Benchmark Technique), subject to observations and targeted testing of the natural geology. Should the natural geology be found to offer at least an equivalent level of performance to the compacted clay liner specification in DECC's Benchmark Technique, then those areas of the waste emplacement facility would not include an engineered barrier, but instead a natural equivalent barrier. Lining of the weathered section of Cell 1 along the northwestern quadrant may be necessary due to the possible higher permeability of the strata in this zone.

The emplacement cell floor would be graded up to 3% to a leachate sump and 1% to leachate collection pipes (in accordance with DECC's Benchmark Technique).

A leachate collection system would be installed across the base of each emplacement cell. The collection system would be connected to a single riser in each cell located generally in the locations shown on **Figure 3.1**. The basal leachate collection system would comprise either a gravel or geonet and the selected system would meet the performance standard detailed in DECC's *Environmental Guidelines: Solid Waste Landfills*. All underdrain leachate collection pipes would be designed to withstand the weight of the overlying material.

All leachate would be contained in the emplacement cells and/or an engineered leachate evaporation pond.

Principle 2: Gas will be contained within the Project Site such that it does not migrate off site through the subsurface. Furthermore, gas generated by the emplaced waste will be managed to ensure that it does not create offensive odour off site, and is oxidised to minimise greenhouse gas emissions.

As outlined above, the cells would be lined, if required, to meet the barrier requirements of DECC. Low volumes of gas would be generated as putrescible waste would not be disposed of at the site. These two controls in combination would ensure that there is a low risk of the subsurface migration of gas.

The most effective means of controlling the emission of gas would be through the application of a daily cover to the emplaced waste and progressively capping and revegetating each cell as it is completed. Gas would be tapped off in accordance with the regulatory requirements (which are soon to be promulgated) and the methane component would be oxidised, thereby reducing the site's greenhouse gas emissions. As a minimum, gas from the rehabilitated cells would be collected and oxidised.

The intended method for methane oxidation would involve the use of biofiltration in the revegetation zone of each rehabilitated emplacement cell reflecting the outcomes from the studies undertaken by GHD and UNSW on behalf of DECC (DEC, 2006).

Principle 3: Prevention of the degradation of the local amenity

The exit from the facility would include a dedicated wheel wash and other suitable controls to prevent mud and litter from being carried by vehicles from the facility and deposited on roads outside the facility. Mobile litter fences would also be provided.

Dust controls would include rapid stabilisation and/or revegetation of disturbed areas. Appropriate weed control would also be implemented together with vector control (eg. rodents).

Principle 4: Emplacement of Special Waste (Selected Asbestos)

Dedicated cells would be provided in the event it is necessary to manage any asbestos waste recovered from the perimeter bund walls or imported onto the site. These cells would meet the design and operational requirements in the *Protection of the Environment Operations (Waste) Regulation 2005*.

3.5.3 Indicative Operations

The operations of the engineered waste emplacement would involve the following general activities.

- Waste screening, emplacement, compaction and covering.
- Waste levy compliance.
- Leachate management, including stormwater management.
- Gas management.
- Litter, dust, odour, mud tracking, fire, weed and vector controls.

Specific operational controls would be implemented to ensure that the engineered waste emplacement meets its design objectives to minimise the risk of pollution and to ensure that the local amenity is not degraded. A summary of these operational controls is provided as follows.

- Waste screening procedures to ensure that only those wastes classified as General Solid (Non-putrescible) and Special Waste (asbestos and tyres) would be permitted to be disposed of on site. This would include those wastes present on site at the commencement of site operations.
- Filling and compaction of the waste in small compartments in each cell to minimise the use of daily cover. The dimensions of the compartments would be documented in Waste Emplacement Management Plan.
- All waste emplaced would be covered at the end of each day's operations using either 150mm of VENM or an approved alternative daily cover. It would be scraped back (other than cover above any dedicated asbestos cell) before placement of further waste above the compartment. Alternatively, some areas may be covered with a DECC approved biodegradable plastic film or foam.
- Waste levy recording and reporting procedures would be developed and implemented to the satisfaction of DECC so that the Proponent meets its levy obligations.
- Stormwater would be shed off the covered areas of the uncapped cell to a temporary stormwater pond and, provided it does not contain any leachate, it would be managed in the same manner as stormwater.
- Leachate would be extracted from the cells, when necessary, to control the head of leachate on the base of the cell and stored on site in an engineered leachate evaporation pond.
- Gas generated by the emplaced waste would be controlled by the application of cover and as the emplacement area is progressively rehabilitated, the gas would be collected and oxidised when the final cover is applied.
- Litter would be collected and managed daily during site operations.

- Site operations would be sequenced to minimise the emission of dust, disturbed areas would be stabilised and the on-site water tanker would be employed to wet down dusty surfaces, as necessary.
- Odour would be controlled by the application of daily cover, aerating the leachate evaporation pond and oxidising gas from rehabilitated cells.
- All vehicles exiting the Project Site would be monitored and their wheels cleaned where necessary to prevent the tracking of mud off site.
- A fire management protocol and procedures would be developed and documented.
- A weed and pest control program would be developed and implemented.

3.5.4 Cell Development and Sequence

Cells within the waste emplacement would be constructed in accordance with their design specifications and would follow a construction quality assurance plan. Prior to the emplacement of waste in any cell, DECC would be provided with drawings 'as constructed' at the time and the construction quality assurance documentation (with test results). It is proposed that the extraction of clay and shale would continue within each cell in the section of the cell not involved with the emplacement of waste.

Only those waste types which are unable to be recovered for re-use or recycling would be emplaced on site within engineered containment cells, and provided the waste is General Solid (non-putrescible) or Special Waste (selected asbestos, tyres).

The initial cell within the footprint of the recycling and re-processing area and the subsequent three cells would be constructed by standard engineering techniques and the residual waste emplaced within them. A Waste Emplacement Plan would be prepared for the initial cell and three subsequent cells which would document:

- waste disposal input rates;
- disposal capacity for the cell;
- vehicle types and movement constraints;
- cell preparation timing;
- emplacement locations for selected asbestos waste;
- water storage for the existing on-site water; and
- cell filling and the rehabilitation sequencing.

An indicative emplacement sequence is depicted in **Figure 3.2**. Essentially, wastes would be placed in an initial cell within the area designated for the recycling and re-processing facility followed sequentially be Cells 1, 2 and 3. Following completion of the waste emplacement in Cell 3, the emplacement of waste would revert to the initial cell to create the final landform in the area of the recycling and re-processing facility.

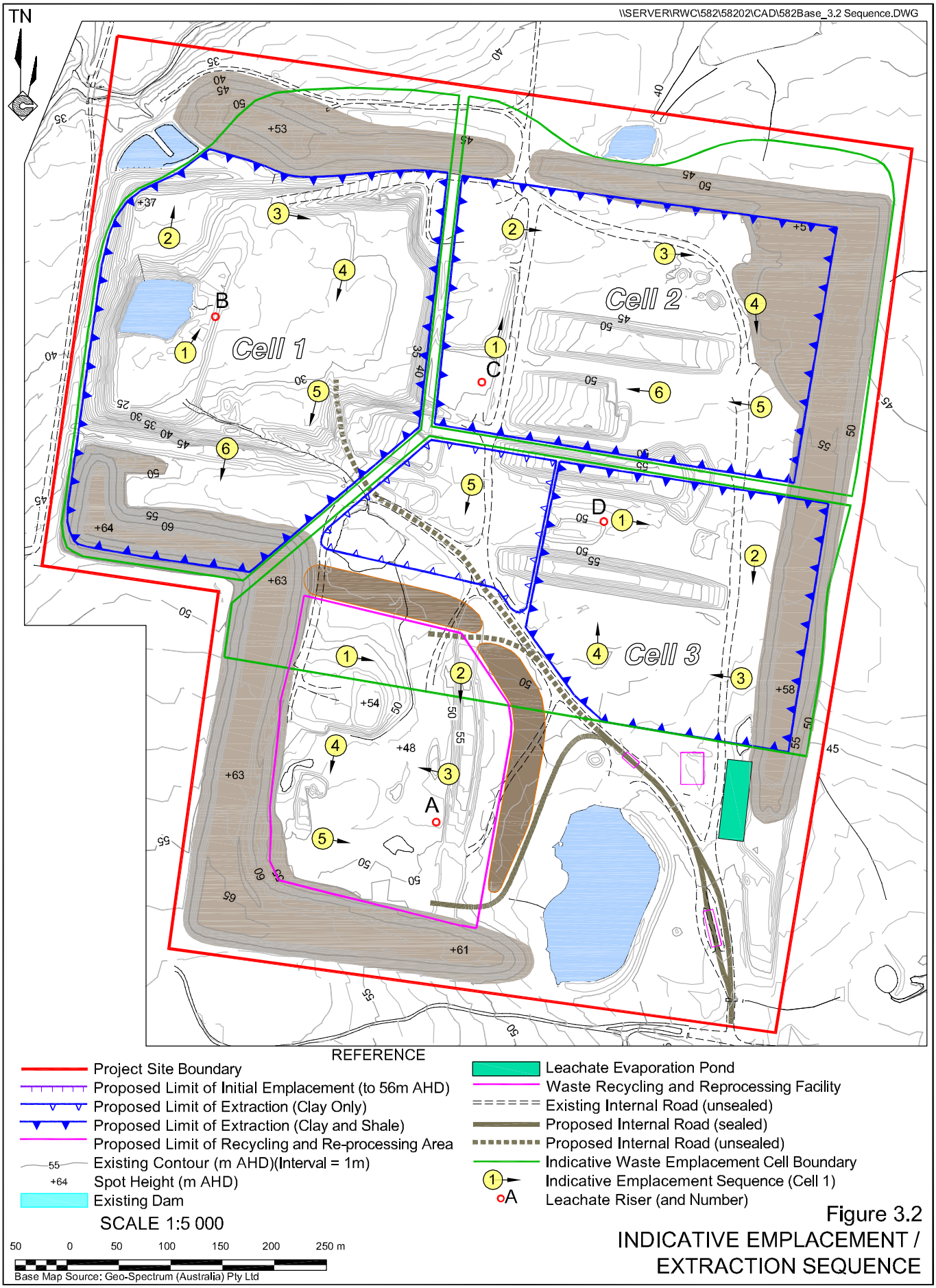


Figure 3.2
INDICATIVE EMPLACEMENT / EXTRACTION SEQUENCE

The Waste Emplacement Plan would also document the progressive re-shaping of the perimeter bund walls adjacent to each cell. This aspect of the plan would include the identification, classification of the waste contained in the bund walls on site, and its disposal on site, provided the waste is classified as General Solid (non-putrescible) or Special Waste (selected asbestos and tyres). If any waste is contained in the perimeter bund walls and is classified as not suitable for disposal on site, it would be managed in accordance with the requirements of the *Protection of the Environment Operations Act 1997*.

In some cases, General Solid (non-putrescible) and/or Special Waste (selected asbestos and tyres) located in the bund walls may be left in-situ and enveloped in a purpose designed low permeable cap to minimise the generation of leachate. For any asbestos retained in-situ, the depth of asbestos below the land's surface would be in accordance with the requirements of the *Protection of the Environment Operations (Waste) Regulation 2005*.

Regular volumetric surveys would be conducted of the premises in accordance with the requirements under the *Protection of the Environment Operations (Waste) Regulation 2005* to measure and record the volume of airspace consumed by the emplacement of waste at the premises.

3.5.5 Leachate Management

Leachate would be produced by water coming into contact with the emplaced waste (other than daily, intermediate and final cover). It would be contained on site by the application of engineered barriers, and in some areas (subject to testing) the natural geology.

The ancillary engineered waste emplacement component of the Project Site would include an underdrain leachate collection system extending across the entire base of each cell. Leachate would be able to drain through the underdrain collection system to low points and be removed from the cells through risers as required to control the head of leachate on the base of cells. Any leachate from the resource recovery facility or generated by any exposed waste when re-shaping the perimeter bund walls would also be contained and managed on site in accordance with DECC requirements.

There would be two stages of leachate management for the emplacement cells. Stage 1 applies when the cells are not capped and the volume of leachate able to be generated from rainfall infiltration is greatest. At this stage, leachate would be removed regularly to control the generation of leachate in the cells. During Stage 2 when the cells are capped (and rehabilitated) very little rainfall will infiltrate into the emplaced waste and consequently very little leachate would be generated. Leachate extraction would be infrequent and monitoring of leachate levels and groundwater quality around the rehabilitated cells would be undertaken to decide when to extract leachate.

Leachate head controls in the cells would be automated in accordance with best practice. Leachate would automatically be pumped out of the cells into the leachate evaporation pond when the set head level is exceeded. An interlock would be included to prevent any leachate being pumped out of the cells in the event that the leachate evaporation pond becoming full. It is environmentally safer to store leachate in an emplacement cell temporarily than to permit leachate to overflow from a storage pond and possibly pollute waters or land off site.

The leachate generation and disposal rates would be predicted using a site specific water balance which would take into account the area's rainfall pattern and the waste emplacement filling plan. This predictive water balance technique would adopt conservative parameters which are expected to over estimate leachate generation rates.

Currently, the site does not have access to sewerage which removes this as a possible disposal option for leachate generated on site. Although there is potential to investigate sewerage connections in the future, it is proposed that all leachate would be managed on site. It is considered that this would be an appropriate management system as, in Western Sydney, the annual rainfall is less than evaporation and the volume of stormwater coming into contact with waste materials could be effectively minimised.

In order to ensure that leachate generation volumes are manageable on site, the following best practice approaches would be adopted.

- Minimisation of the generation of leachate during waste emplacement activities (eg maintaining a small tipping face and use of daily cover to shed off stormwater).
- Progressive rehabilitation of Cells 1, 2 and 3 (using low infiltration capping) and including a low infiltration layer over the initial waste emplaced to 56m AHD within the Recycling and Re-processing Area.
- Disposal of all leachate via evaporation from the active emplacement area and directly from the leachate evaporation pond. Leachate would also be irrigated across the emplaced waste to utilise the waste's ability to act as a sponge and to facilitate the rapid biological stabilisation of any emplaced organic waste.

During site operations, leachate generated would be monitored to enable the predictive water balance to be refined (if necessary) and any changes needed can be introduced to ensure leachate volumes are not generated which are in excess of those which can be effectively managed.

Stormwater collected within the southern and central water storage dams (Dam No's 1 and 4) and planned sediment retention dams would be used to control dust emissions from the waste recycling and waste emplacement activities. Suitable measures would be detailed to ensure that clean runoff stormwater collected in these dams does not become contaminated by leachate.

3.5.6 Gas Management

Gas generated from the emplaced waste requires the following issues to be effectively managed.

- Ensuring that the gas does not present an explosive/fire or asphyxiation risk off site.
- Gas does not create offensive odour off site.
- Methane emissions are managed to minimise the facility's greenhouse impact.

Through a combination of a barrier around the emplaced waste and subsurface gas monitoring bores located at suitable intervals around the facility, the risk of subsurface migration of gas would be minimised. These measures are aimed at ensuring that the emplaced waste does not present an explosive/fire or asphyxiation risk off site.

Odour is not expected to be an issue due to the nature of waste to be accepted on site and waste disposal practices to be employed. Odour emissions reflecting the waste classification, site configuration and disposal practices would be modelled in the *Environmental Assessment* to confirm this expectation.

Odours would be minimised by a combination of activities including operating a small active emplacement area, airtight fittings on leachate risers and by installing and operating an aerator on the leachate evaporation pond.

Methane generated from the waste emplacement would be collected and oxidised in accordance with the State and Federal Regulatory requirements. Should these requirements not require the collection and oxidation of the methane, the Proponent would collect and oxidise methane when each cell is filled and rehabilitated. This would occur in a staged manner.

3.6 Clay/Shale Extraction

3.6.1 Clay/Shale Resources

The clay/shale resources within the Project Site occur within the Bringelly Shale, a geological unit comprising interbedded claystones, siltstones, laminites and minor sandstones and carbonaceous units. Within the Project Site, these units extend to a depth of approximately 60m from the surface although only the top 35m has been investigated in detail for their resource potential. The most sought-after resource is a light-firing claystone and siltstone (clay/shale), a product used by the brick industry to manufacture light coloured bricks. The remaining resources are suitable for the manufacture of darker bricks but is principally suitable for general purpose fill at construction sites. The Proponent has established the current depressed building industry has caused the brick industry to substantially reduce brick production which, in turn, has resulted in virtually no demand for imported light-firing clay/shale. All brick manufacturing plants are currently relying upon resources either extracted in quarries adjoining each brick plant or accumulated stocks. Furthermore, the demand for bricks manufactured from light-firing clay / shale has diminished in recent years as builders / home owners have increased the purchases of darker coloured bricks.

A comprehensive assessment of the clay/shale resources was undertaken by R.W. Corkery & Co. Pty Limited in 2004 to assist in defining the optimum areas for the recovery of light-firing claystone and siltstone. **Figure 3.1** displays an area within the southeastern section of the Project Site referred to as the "Optimum Clay/Shale Extraction Area". It is assessed that this area would yield approximately 800 000t of light-firing clay/shale (to a depth of up to 22m below ground level) but requiring the extraction of a similar quantity of clay and non light-firing clay/shale, principally as overburden (totalling 1 600 000t of material). A further 200 000 tonnes of light-firing shale could be recovered from Cell 2 in the event extraction in that cell achieves a depth of 28m AHD.

As discussed within Section 2.2, previous extraction operations have created a void within the northwestern section of the Project Site with a number of clay/shale stockpiles created on ground level east of the extraction area.

The project incorporates the ongoing extraction and off-site despatch of both red-firing and light-firing clay / shale. Whilst it is a difficult to forecast the likely market requirements over the next 30 years, the Proponent considers it is realistic that up to 1.65 million m^3 or approximately 3 million tonnes or an average of 100 000 tonnes per year could be extracted and sold off site.

The Proponent is mindful of the on-site requirements for red-firing shale for daily cover and capping and clay for localised lining and capping. Accordingly, it is proposed to limit the quantities of red-firing shale and clay despatched off site to 1 200 000t and 800 000t respectively.

3.6.2 Extraction/Resource Recovery Areas

For the purposes of the project outlined in this document it is proposed, based on the defined clay/shale resources on site, to extract/recover clay/shale from the following areas.

1. Cell 1 Margins

It is proposed during the development and operation of the Cell 1 emplacement that a quantity of clay/shale would be recovered from the margins of Cell 1 to facilitate development of the cell, provide locally sourced cover material and any sales for fill materials. The removal of construction fill off site would increase the overall capacity of the Cell 1 void. For the purposed of calculating available quantities of clay / shale in Cell 1, a limiting depth of extraction of 28m AHD has been adopted, although it is known that the shale continues to depths well below 15m AHD.

2. Perimeter Bund Walls

The perimeter bund walls contain a substantial quantity of clay/shale that was extracted from the area now nominated as Cell 1 (on **Figure 3.1**) that needs to be either relocated and used on site or sold and transported off site. The fact that the material is already extracted and loose would assist to cost-effectively remove it from site.

3. Cell 2

It is recognised that up to 1.6m of clay and shale would be required to cap the final landform to achieve the substrata necessary for the return of the land within the Project Site for grazing purposes. Quantities of clay may also be required for lining defined areas within the active cells used for the emplacement of wastes. The Proponent intends to recover the required clay and shale from stockpiles constructed with clay / shale extracted from Cells 2 and 3 or from nominated sections of the perimeter bund walls. A limiting depth of extraction of 28m AHD has also been adopted for proposed extraction in Cell 2. The sequence and rate of extraction and ultimate depth of extraction would depend largely on the quantities sold and despatched off site and the quantities used on site for cover materials and final capping.

4. Optimum Clay/Shale Extraction Area (Cell 3)

Figure 3.1 displays the location of the optimum clay/shale extraction area immediately north of the site office within Cell 3. This area has been designated as the "optimum" area as it has the greatest quantity of light-firing clay/shale and least overburden material. Hence, in order to provide the greatest opportunity to recover the light-firing clay/shale from this area, it would be desirable for as much of the materials that are required on site (and off site) to be extracted from this area. By the time the light-firing clay/shale is exposed, it is possible the demand for this raw material from the brick industry would be re-established. It is noted that the optimum clay / shale extraction area covers approximately 50% of the area of Cell 3.

5. Clay Extraction Area (Cell 3)

Figure 3.1 displays 2.2ha west of the optimum clay / shale extraction area which is proposed to be extracted solely for clay - for either sale or site use in capping the final landform. It is proposed extraction in this area would be approximately 4m to 5m deep.

3.6.3 Extraction Methods

Extraction operations would generally be undertaken on a campaign basis depending upon market demand and/or the on-site need for cover material. Extraction would be undertaken using ripping and pushing methods without the need for blasting. Extraction operations would typically be undertaken as follows.

- Topsoil and subsoil (where present - Cell 3 only) would be stripped to depths determined by the soil structure typically using a scraper and either stockpiled for future use in rehabilitation or directly transferred to an area awaiting rehabilitation.
- The clay present would be recovered using a scraper and stockpiled in an area not required for waste emplacement for some time.
- Underlying shale units would be ripped using a bulldozer and either loaded directly into road registered trucks for despatch off site or into a haul truck for stockpiling either in a product stockpile or a cover material stockpile.

Where extraction depths exceed 15m, operational benches would be formed with the following criteria generally adopted.

- Operational Face Height:.....15m
- Operational Bench Width:.....20m
- Operational Face Angle:..... typically 70°

Once the ancillary waste emplacement is operating at full capacity, it is expected that up to approximately 60 000t of clay/shale would be extracted each year (or recovered from the perimeter bund walls) for use as cover material on site.

3.6.4 Extraction Rates

It is the Proponent's intention to extract whatever clay/shale it can throughout the life of the Project to both satisfy available markets and to create additional airspace for waste emplacement. For planning purposes, it is assumed the annual clay/shale extraction rate (and quantity despatched from site) is approximately 100 000 tonnes/year which would create an additional 43 000m^3 of air space annually. An average of approximately 35 000t or 15 000m^3 of clay/shale would be extracted annually for cover material from one or more of the areas described in Section 3.6.2.

In the event that less than 600 000t of waste material is received in any one year, pending available markets, additional clay/shale may be extracted and transported off site. However, in no year would the tonnage of waste received and clay / shale transported off site exceed a combined total of 700 000t.

3.7 Waste Transfer Station

In the event the waste emplacement capacity of the Project Site is exhausted prior to the 30 year project life, and subject to demand at the time, it is proposed to continue the operation of the waste recycling and re-processing facility and effectively commence the use of the site as a Waste Transfer Station. As there would be no ancillary emplacement or landfill for non-recyclable residual waste to be disposed of on site, these materials would be transported from the site to alternative facilities licenced to accept such waste.

Those areas at the southern end of the Project Site to remain active would include the recycling and re-processing facility, material stockpile area, the site access and internal road access to and from the aforementioned areas, wheel wash, weighbridge and the office and amenities buildings. Maintenance of the waste emplacement area within Cells 1 to 3 would continue throughout the ongoing operation of the waste transfer station.

If the waste recycling and re-processing facility and waste transfer station uses were to cease on the site, the area of land upon which these uses occupy would also be rehabilitated and the site closed.

3.8 Site Rehabilitation and Site Closure

3.8.1 Rehabilitation Procedures

The Proponent's principal rehabilitation objective is to provide a low maintenance, geotechnically stable and safe landform that is commensurate with agricultural grazing. This would be achieved through progressive rehabilitation of finalised emplacement areas and rehabilitation of the waste recycling and re-processing facility at the end of the project life. The generalised rehabilitation procedure would be as follows.

- Creation of the final landform.
- Establishment of final capping for each emplacement cell.

- Placement of a suitable depth of soil material to sustain future grazing.
- Construction of long-term water management structures.
- Sowing of cover species appropriate for short-term soil stabilisation.
- Establishment of an appropriate grazing pasture with addition of fertiliser, as required.

Rehabilitated areas would be regularly inspected and any additional works completed to achieve successful rehabilitation.

Following closure of the waste transfer station, the Project Site would be decommissioned with all buildings not useful to future land uses removed and any concrete footings removed and hardstands ripped. Remaining perimeter bund walls and internal bund walls would be shaped to blend with the final landform and all areas established with appropriate pasture species. It is proposed that some additional VENM would be imported to supplement the materials pushed onto the former recycling and re-processing area to create the landform presented in **Figure 3.3**.

3.8.2 Final Landform and Land Use

The final landform would result in the creation of a gently sloping grassed knoll with an elevation of approximately 70m AHD (see **Figure 3.3**). The final landform would also incorporate the existing three dams and perimeter diversion banks providing long-term water management and storage.

It is intended that the Project Site would be returned to land suitable for grazing.

3.9 Services and Utilities

Electricity

Currently, no electricity is connected to the site with previous extraction related activities, offices etc utilising power from on-site diesel generators. It is proposed that diesel generators would initially continue to provide the necessary power requirements. However, it is proposed that a substation and transformer would be installed on site and three phase electricity connected to provide power for the office and facilities and to operate the recycling plant. Initial discussions with energy providers indicate that power could be brought to site from existing lines on Luddenham Road via Patons Lane using overhead lines.

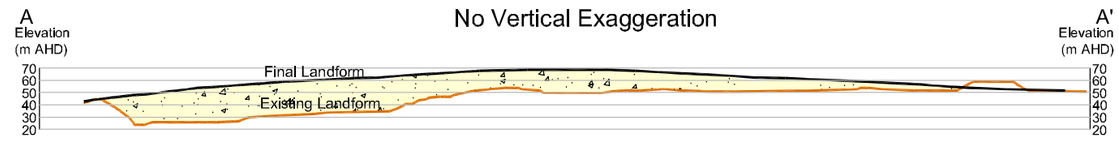
Sewage

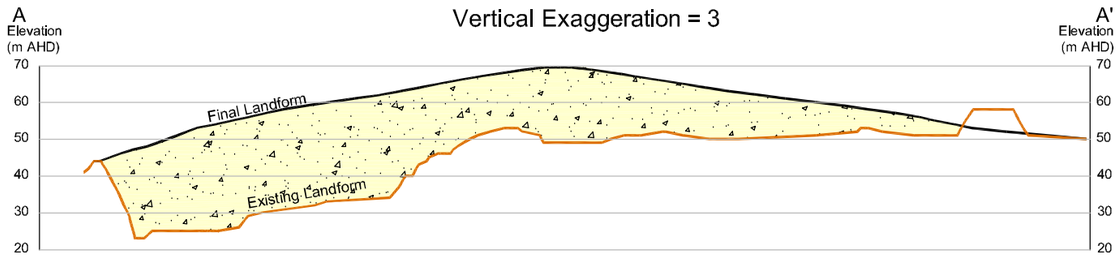
There are currently no sewerage lines on site with existing sewage treatment achieved using a septic tank system. The septic system would be upgraded as required to accommodate the expected number of employees on site and use by truck drivers. Connection to mains sewerage will also be investigated for on-site services. It is not intended that the sewer connection is used for disposal of leachate.

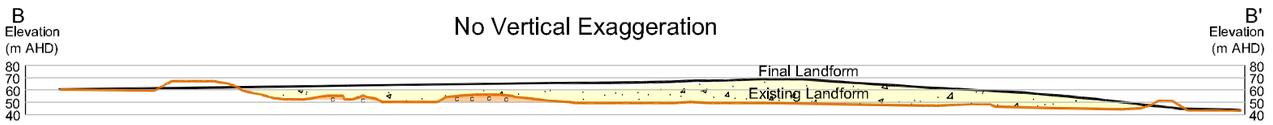
\\SERVER\RWC\582\58202\CAD\582Base_3.3 Final Landform.DWG

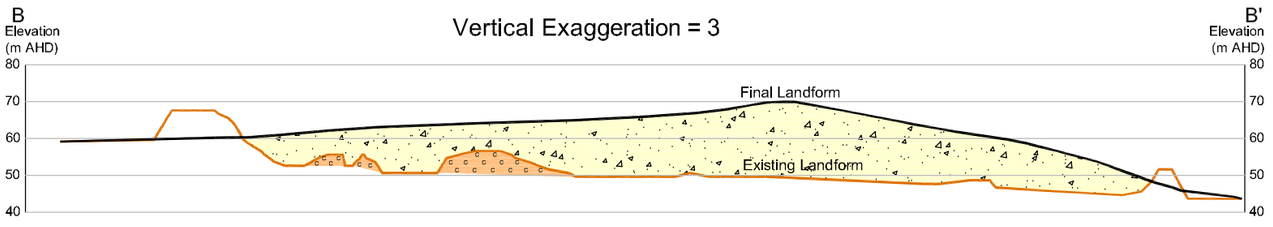
TN
MN

REFERENCE
- Project Site Boundary
- 55 Existing Contour (m AHD)(Interval = 1m)
- 55 Proposed Contour (m AHD)(Interval = 1m)
- Proposed Dam (and Number) (Indicative Size Only)
- Collection Drain (and Direction of Flow)
- Clay / Shale Stockpile
- Area of Native Vegetation
- 1 Leachate Riser









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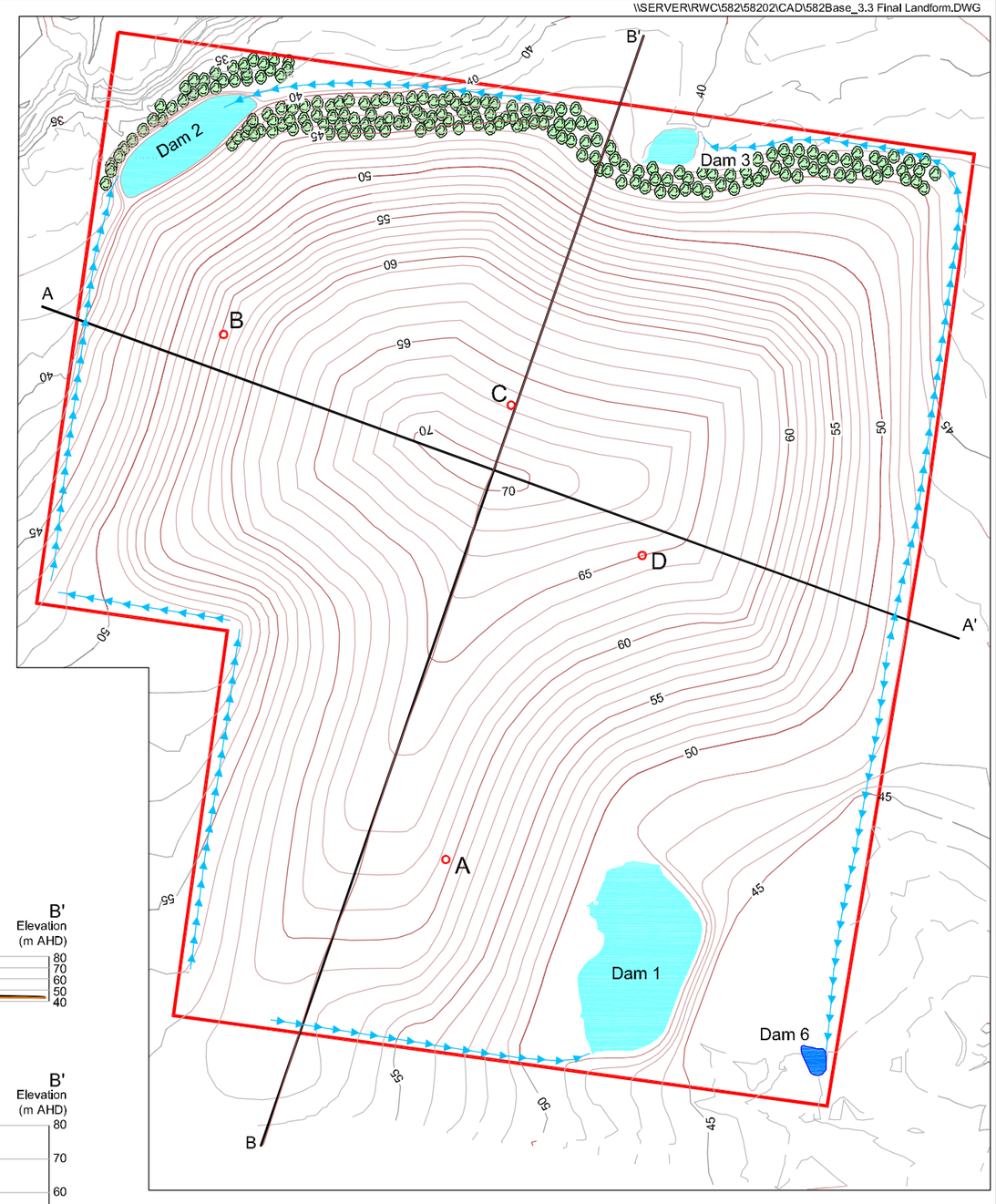

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Base Map Source: Geo-Spectrum (Australia) Pty Ltd

Figure 3.3
INDICATIVE FINAL LANDFORM

Water

Water is currently supplied on site via the existing water storage dam and a registered groundwater bore (GW 105054). It is considered that the existing water supply should be sufficient to supply both the recycling plant and dust control for the waste emplacement component of the site.

Potable water would be trucked to site, as required, and/or delivered in bottles.

Telecommunications

The site currently has telephone lines to operate phones, faxes and internet facilities. Mobile phones would also be utilised together with two-way radios for on-site communications.

3.10 Transportation

3.10.1 Vehicle Types and Traffic Levels

Trucks transporting waste to the Project Site would typically range from two axle rigid trucks including covered open bin vehicles (roll on/roll off) and compactor vehicles, truck and dog trailers and six axle semi-trailers. Based on the receipt of the maximum 600 000t of waste per year and an average pay load capacity of 15t, an average of approximately 130 truck loads would be received daily (260 movements) Monday to Saturday.

Trucks transporting clay/shale from the Project Site would invariably be truck and dog trailers. Back loading would be undertaken wherever possible, however, for assessment purposes, it is assumed that no back loading would be undertaken. Based on 100 000t of clay/shale transported from site per year and an average pay load capacity of 30t, clay/shale transport would generate an average of approximately 12 truck loads (24 movements) per day Monday to Saturday.

The estimated 97 500t of products produced form the recycling plant would be despatched from site, largely as backloads. For assessment purposes, it is estimated approximately 50% of the recycled products are backloaded and the remaining materials despatched in 25t loads generating an additional 7 loads or 14 truck movements per day.

The 85th percentile number of truck loads on any day (at maximum operating capacity) for all incoming and outgoing materials would be approximately 175 loads (350 movements). Based on an 11 hour day, this would equate to an average 16 loads per hour.

It is important to note that, on an average year, the total truck movements would be significantly lower with approximately half the number of trucks delivering waste to site, ie. 65 loads daily (130 movements) at 300 000t of waste received per year. Therefore in an average year the 85th percentile of total truck loads on any day for all incoming and outgoing materials would be approximately 100 loads (200 movements) or 9 loads per hour. It is expected that a similar number of truck movements would occur following completion of ancillary waste emplacement and clay / shale extraction with a large proportion of waste and reprocessed materials being back loaded into trucks delivering material to the site.

3.10.2 Transportation Routes

Figure 3.4 displays the road network in the vicinity of the Project Site and likely transportation routes. All vehicles would access the Project Site via Mamre Road, Luddenham Road and Patons Lane. Vehicles travelling to/from the north would likely exit/enter Mamre Road from either the M4 Western Motorway or Great Western Highway. Vehicles travelling to/from the south would enter/exit Mamre Road from Elizabeth Drive and subsequently the Westlink M7.

Vehicles would not travel on local roads between the Project Site and the Western Motorway or Westlink M7 except when materials are being received from/delivered to those areas.

For planning purposes, the Proponent estimates that 80% of the truck movements to and from the Project Site would occur from Mamre Road northwards whilst the remainder of truck movements would occur from Mamre Road southwards.

3.11 Operational Hours and Project Life

Table 3.1 records the proposed hours of operation for all activities. It is noted that non-audible maintenance activities may need to be undertaken outside the nominated hours, 7 days per week.

Table 3.1
Proposed Hours of Operation

Activity	Monday to Friday	Saturday	Sunday
Waste Receipt and Product/ Clay/Shale Transportation	6:00am to 5:00pm	6:00am to 4:00pm	-
Waste Re-processing	6:00am to 6:00pm	6:00am to 5:00pm	-
Waste Transfer Station	6:00am to 6:00pm	6:00am to 5:00pm	
Waste Emplacement Management	6:00am to 6:00pm	6:00am to 5:00pm	-
Extraction Activities	7:00am to 6:00pm	8:00am to 5:00pm	-

The life of the ancillary waste emplacement would be approximately 19 to 23 years based upon the current available air space of 4 600 000m^3 (not including additional air space created through future extraction activities) and the receipt of 300 000tpa of waste requiring between 202 000m^3 to 240 000m^3 of airspace. The life of the Project would vary, however, depending on the volume of waste received, the volume that is able to be recycled and sent back out the gate and the compaction rate achieved for emplaced waste. In any event, the Project life would be dependent on achieving the proposed final landform.

In the event that all light firing clay/shale and overburden within the optimum clay/shale extraction area (see Section 3.5.2) is able to be extracted and taken off site approximately an additional 700 000m^3 of air space would be created potentially extending the life of the Project by approximately a further 3 years. In the event that additional clay/shale is also transported off-site, the available air space, and hence life of ancillary waste emplacement activities, could be further extended.

Following the completion of ancillary waste emplacement activities, the site would continue to operate as a Waste Transfer Station until the end of the Project life which is proposed to be 30 years.

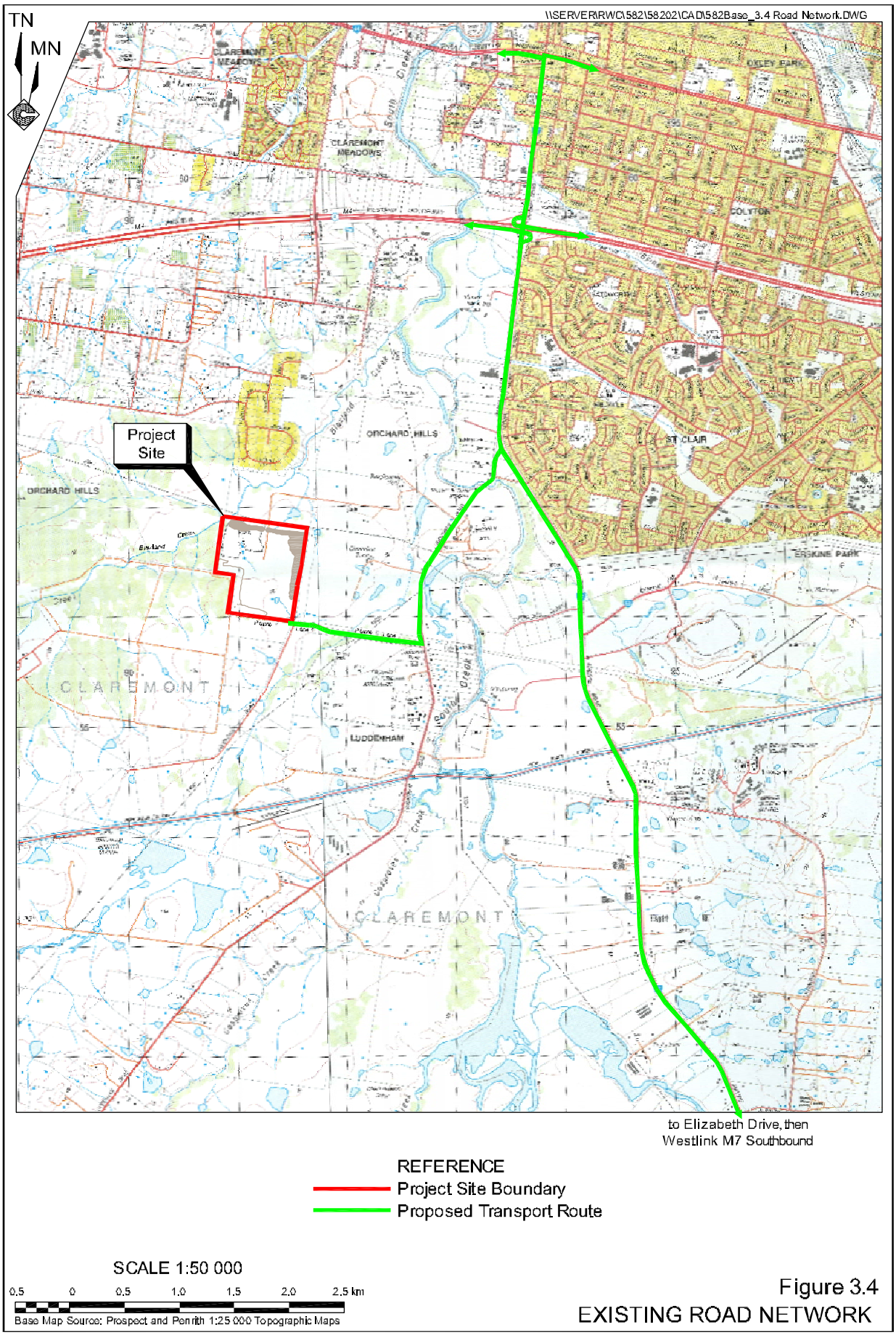

Figure 3.4
EXISTING ROAD NETWORK

4.0 PLANNING AND LEGISLATIVE REQUIREMENTS

4.1 Commonwealth

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires the approval of the Commonwealth Minister for the Environment for 'actions' that may have a significant impact on matters of national environmental significance. The EPBC Act also requires approval for certain 'actions' on Commonwealth land or on land adjoining Commonwealth land as in this case. Matters of national environmental significance under the EPBC Act include:

- world heritage properties;
- natural heritage places;
- Ramsar wetlands of international importance;
- threatened species or ecological communities listed in the EPBC Act;
- migratory species listed in the EPBC Act;
- Commonwealth marine environments; and
- nuclear actions.

A search of the Department of the Environment, Water, Heritage and the Arts (DEWHA) Protected Matters database confirmed that the site is not a world heritage property or a natural heritage place, does not comprise a Ramsar wetland of international importance or a Commonwealth marine environment and does not include nuclear actions.

An assessment of the impact of the Project on threatened species, endangered ecological communities and migratory species listed under the EPBC Act will be completed during the preparation of the *Environmental Assessment*. A referral to the Commonwealth Government Department of the Environment, Water, Heritage and the Arts has been made both in respect of matters of national environmental significance and the site's proximity to Commonwealth owned land, to determine if approvals for any 'controlled actions(s)' would be necessary.

4.2 State

4.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (the 'EP&A Act') provides the statutory framework for assessment of the Project. Under the provisions of section 75B of the EP&A Act, the Project was declared a Major Project on 11 November, 2008 by the Director-General of the Department of Planning.

The Project is therefore a development to which Part 3A of the EP&A Act applies. This Project Application has therefore been prepared in accordance with Division 2 Environmental Assessment and Approval of Projects in Part 3A of the EP&A Act.

4.2.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) provides an integrated system of licensing for industries. Schedule 1 of the POEO Act identifies types of development that require an Environment Protection Licence (EPL) for industries and land uses. The applicable scheduled activities, as defined by the POEO Act, that would be undertaken on site include the following.

- Extractive industries

  It is proposed that approximately 100 000t per year of clay/shale would be extracted and transported from site which exceeds the 30 000t per year threshold specified by the POEO Act.

- Resource recovery

  It is expected that an average of approximately 150 000t of waste received per year would be suitable for recycling and re-processing which exceeds the threshold of 30 000t of waste received per year. It is also expected that approximately 35% of this waste would form residual waste requiring emplacement which also meets the threshold of less than 50% of waste requiring disposal after processing.

- Waste disposal (application to land)

  It is expected that approximately 150 000t per year of waste received would be directly emplaced on site together with 52 000t per year of residual waste from the re-processing facility within the ancillary waste emplacement. The proposed activity therefore does not meet any of the exceptions to the need for licencing this activity.

- Waste Storage and Waste Transfer Station

  It is expected that approximately 150 000t per year of waste would be directed through the Waste Recycling and Re-processing Facility. This would exceed the threshold of 30 000t of waste received per year from off site.

As discussed in Section 1.5, it is the Proponent's intention to seek separate Environment Protection Licences covering the ancillary waste emplacement area and Waste Recycling and Re-processing Facility. It is intended that the Environment Protection Licence covering the ancillary waste emplacement would include the scheduled activities for extractive industries and waste disposal whilst the licence covering the Waste Recycling and Re-processing Facility would include resource recovery and waste storage.

In addition to seeking the Environment Protection Licences, the Proponent would establish appropriate financial assurances as is required for waste disposal activities.

It is noted the former clay/shale extraction operation is licensed by the DECC under Environment Protection Licence 11706.

4.2.3 State Environmental Planning Policies

State Environmental Planning Policy (Major Projects) 2005

The purpose of State Environmental Planning Policy (Major Projects) 2005 (SEPP Major Projects) is to define those projects of state significance or proposed on state significant sites and therefore require Ministerial approval under the provisions of Part 3A of the Act. SEPP Major Projects and Part 3A of the Act is a system introduced to specifically deal with the complexity of major projects and to streamline the assessment process of related applications.

Section 6(1) in SEPP Infrastructure states:

"Development that, in the opinion of the Minister, is development of a kind:

> *(a) that is described in Schedule 1 or 2 .....*
> *is declared to be a project to which Part 3A of the Act applies."*

Group 9 in Schedule 1 of SEPP Infrastructure defines those resource and waste related industries that are Major Projects including *'Resource recovery or waste facilities'*, which meet the following criteria.

'Development for the purpose of resource recovery or recycling facilities that handle more than 75,000 tonnes per year of waste or have a capital investment value of more than $30 million.'

This Waste and Resource Management Facility Project proposes to receive up to 600 000 tonnes of waste material per annum. The development is therefore defined as a Major Project and was declared so by the Director-General of the Department of Planning on 11 November 2008. The proposal is therefore a project to which Part 3A of the Act applies and hence, the application will be prepared accordingly.

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (SEPP Infrastructure) was introduced to facilitate the delivery of infrastructure across the State by improving regulatory certainty and efficiency.

The aims of the SEPP Infrastructure are to provide a consistent planning regime under the Act that:

- provides greater flexibility in the location of infrastructure and services by identifying a broad range of zones where types of infrastructure are permitted;
- allows for the efficient development, redevelopment or disposal of government owned land. This is achieved by permitting additional uses on State land and allowing adjacent land uses to be undertaken on State land (except conservation lands) if the uses are compatible with surrounding land uses;

- outlines the approval process and assessment requirements for infrastructure proposals; and
- identifies works of minimal environmental impact as exempt or complying development to improve turnaround times for maintenance and minor upgrades.

Part 3, Division 23 in SEPP Infrastructure provides development controls for Waste and Resource Management Facilities. SEPP Infrastructure applies to the State.

Clause 120 of SEPP Infrastructure defines a 'waste or resources management facility' as meaning 'a waste or resource transfer station, a resource recovery facility or a waste disposal facility.' Clause 121(1) in SEPP Infrastructure permits 'any person' to carry out development for the purposes of a 'waste or resource management facility' in a 'prescribed zone'.

A *'prescribed zone'* for the purposes of Waste or Resource Management Facilities in SEPP Infrastructure includes zone RU2 Rural Landscape (RU2 zone). The RU2 zone is the proposed and predominant new zoning for the site under the provision of draft Penrith Local Environmental Plan 2008 (draft PLEP 2008) (see discussion below in Section 4.4). A small portion in the northwestern corner of the site, where Blaxland Creek cuts through the land is proposed to be zoned E2 Environmental Conservation (E2 zone). Both the RU2 and E2 zones on and surrounding the Project Site are displayed on **Figure 1.1**. The draft PLEP 2008 is discussed further in Section 4.4.2.

Clause 6(3)(b) of SEPP Infrastructure provides the Director General with the authority to determine that the site's current 1(a) (Rural "A" Zone – General) under the provisions of Penrith Local Environmental Plan No.201 (Rural Lands) is '*equivalent'* to a '*prescribed zone'*. The Project would therefore be permissible and approval may be granted to it prior to gazettal of draft PLEP 2008. .

Clause 123 requires that consideration be given to whether a justifiable demand exists for the waste emplacement having regard to the Waste Strategy 2007 (see Section 1.3). Further details regarding the justifiable demand will be provided within the *Environmental Assessment* to be prepared for the Project.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

As outlined in Section 1.1 of this document, the Project Site has an existing development consent (DA No.116/80) for clay/shale extraction. Given the downturn in the demand for clay/shale in the past 3 to 4 years, this site is now commercially unviable. This situation is reflected by the fact that clay/shale extraction has not occurred on the site for almost 2 years.

The site still retains a quantity of light-firing clay/shale that has not been extracted. Despite the current reduced demand for clay/shale, the NSW Department of Primary Industries-Mineral Resources has advised the Proponent that it has a preference not to see these existing mineral resources sterilised. However, the Department is cognisant of the implications of the requirements of the brick industry and the need to rehabilitate the Project Site.

The Project has been designed such that it would be possible for clay/shale extraction to be carried out concurrently with the residual waste emplacement operations for many years into the life of the site. Furthermore, emphasis would be placed upon the recovery of materials from an area recognised to be the optimum area for light-firing clay/shale. This is a practice which is commonly undertaken with a number of waste management facilities around Sydney.

As the continuation of clay/shale extraction forms part of the Project, if approved, Development Consent DA No.116/80 would be surrendered under the provisions of 75YA(2)(b) of the Act and the ongoing clay/shale extraction operations being permitted to continue as part of the overall project approval.

The continuation of clay/shale extraction from the Project Site would remain subject to the matters for consideration in State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (SEPP MPPEI) including land compatibility, natural resource management and environmental management, resource recovery, transport and rehabilitation. All of these matters would be comprehensively addressed in the *Environmental Assessment*.

State Environmental Planning Policy No 33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33) requires development consent for *'hazardous or offensive development.'* It aims to ensure when determining whether a development is a *'hazardous or offensive industry'* that any measures proposed to be employed to reduce the impact of the development are taken into account.

The DoP [formerly the Department of Urban Affairs & Planning (DUAP)] prepared *Applying SEPP 33 - Hazardous and Offensive Development Application Guidelines,* which outlines the assessment criteria to determine whether a proposal constitutes a *'potentially offensive or potentially hazardous industry.'*

Potentially Offensive Industry

SEPP 33 defines a potentially offensive industry as *"a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment."*

The DUAP (1997) Guidelines state that *"the key consideration in the assessment of a potentially offensive industry is that the consent authority is satisfied there are adequate safeguards to ensure emissions from a facility can be controlled to a level at which they are not significant. An important factor in making this judgement is the view of the EPA (now DECC) (for those proposals requiring a pollution control licence under EPA legislation). If the EPA considers that its licence requirements can be met, then the proposal is not likely to be 'offensive industry'. In most cases, compliance with EPA requirements should be sufficient to demonstrate that a proposal is not an offensive industry."*(DUAP, 1997).

The Project is required to obtain licences from DECC with respect to recycling and use of the existing quarry to accept and emplace solid wastes, ie. in addition to the ongoing clay/shale extraction. Schedule 1 of the POEO Act details the licence requirements. The potential impacts of the Project on air quality, groundwater, surface water, noise and other environmental aspects would be assessed and the results provided in the *Environmental Assessment*. It is unlikely that the Project would not be able to achieve the requirements of the DECC licences. Therefore, although the Project falls within the definition of a *'potentially offensive industry'*, it is unlikely to be an '*offensive industry*.'

Potentially Hazardous Industry

SEPP 33 defines a potentially hazardous industry as *"a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:*

(a) to human health, life or property, or
(b) to the biophysical environment, and includes a hazardous industry and a hazardous storage establishment."

A SEPP 33 screening exercise is to be undertaken in order to determine whether any chemicals (for example, diesel) to be stored/used on the site are classified as Dangerous Goods under the Dangerous Goods Code. If classified Dangerous Goods are to be stored or used on the site, the amounts would need to be compared with the storage thresholds detailed in the DUAP (1997) Guidelines. If the Project stores quantities of Dangerous Goods below the SEPP 33 thresholds the Project would not be a *'potentially hazardous industry*.'

State Environmental Planning Policy No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 (SEPP 55) requires the consent authority to consider whether land is contaminated prior to granting consent to any development. The consent authority must be satisfied that any necessary remediation is undertaken to an acceptable standard has occurred before use of the land is permitted.

A preliminary contamination assessment has not been carried out on the site to date, however, it is understood the previous owners accepted demolition waste containing asbestos without authorisation when constructing the northeastern and eastern perimeter bund walls on site. In order to satisfy the provisions of SEPP 55, the Project Application would need to include a Phase 1 and 2 contamination assessment and the preparation of an appropriate remedial action plan to ensure the site is progressively remediated and becomes suitable for the proposed use upon completion of its rehabilitation.

4.3 Regional

Sydney Regional Environmental Plan No. 9 – Extractive Industry (No2 – 1995)

Sydney Regional Environmental Plan No. 9 – Extractive Industry (No2 -1995) (SREP 9(2)) identifies regionally significant extractive resources within the Sydney Region to facilitate their utilisation.

The plan ensures extraction is carried out in an environmentally acceptable manner and prohibits extraction from certain environmentally sensitive areas. SREP 9(2) also ensures that decisions on future urban expansion take into account the ability to realise the full potential of important deposits. The provisions of SREP 9(2) were used during the planning of "The Vines" residential area to the north of the Project Site. The separation distance between the Project Site and the closest residential land was set at a minimum of 500m.

As previously outlined, the Project includes provision for continued extraction/shale clay, if there is sufficient demand, or for the purposes of capping the ancillary waste emplacement operations. The Project Site is identified in SREP 9(2) as an area of regional significance for clay/shale extraction. The provisions of SREP 9(2) would therefore be addressed and included in the *Environmental Assessment.*

Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean River (No.2-1997)

The Project Site is located within the Hawkesbury Nepean River catchment area. Therefore, the provisions of Sydney Regional Environmental Plan No. 20 – Hawkesbury Nepean River (No.2-1997) (SREP HNR) apply. This policy aims to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land use are considered in a regional context.

The specific planning policies and recommended strategies relating to total catchment management, environmentally sensitive areas, water quality, cultural heritage, fauna and flora, riverine scenic quality, agriculture and related matters would be addressed where relevant and incorporated into the *Environmental Assessment*.

4.4 Local

4.4.1 Penrith Local Environmental Plan No.201 – Rural Lands

The site is zoned 1(a) (Rural "A" Zone – General) [zone 1(a)] under the provisions of the Penrith Local Environmental Plan No.201 (Rural Lands) [the 'PLEP-RL']. The development control table in PLEP-RL for zone 1(a) only lists those uses that are prohibited or those permitted without consent. A *'waste or resources management facility'* is not listed as being prohibited or permitted without consent in zone 1(a).

The PLEP-RL, however, does not define a *'waste or resources management facility'*. Similarly, the Environmental Planning and Assessment Model Provisions 1980 adopted by PLEP-RL, does not provide a definition for this use.

However, clauses 33 and 33A in PLEP-RL do specifically identify development for the purposes of *'Waste Disposal'*. Clause 33 refers to a series of sections in the Act that would apply to development for the purposes of *'Waste Disposal.'*

The Project would also be consistent with the objectives of zone 1(a) in the PLEP-RL namely:

- the associated future rehabilitation of the site would enhance the scenic quality and rural character of the locality; and
- the environmental capabilities of the land and the enhancement of natural resources would be utilised to its full potential.

Moreover, the Penrith Rural Lands Study 2001, prepared to assist with the planning for the future of Penrith's rural areas, clearly states that *'The management of solid waste for both the urban and rural areas takes place in the rural lands.'*

The ambiguity as to whether all of the proposed activities would be permissible under PLEP-RL is subsequently resolved under the provisions of SEPP Infrastructure and the site's proposed and predominant new RU2 zone in draft PLEP 2008 (see Section 4.4). As detailed in Section 4.2.3 above, SEPP Infrastructure permits, with consent, all of the proposed activities under the site's impending '*prescribed*' RU2 zone or where, in the opinion of the Director General, the site's current 1(a) zone is deemed as being 'equivalent' to the RU2 zone.

4.4.2 Draft Penrith Local Environmental Plan 2008

Under the provisions of draft Penrith Local Environmental Plan 2008 (draft PLEP 2008) the Project Site is proposed to be predominantly zoned *RU2 Rural Landscape* (zone RU2) with a small portion of the northwestern corner proposed to be zoned E2 Environmental Conservation (E2 zone) (see **Figure 1.1**).

Zone RU2 permits, with development consent, *'Waste or resource management facilities.' 'Waste or resource management facilities'* in draft PLEP 2008 are defined as and include a *'waste or resource transfer station, a resource recovery facility or a waste disposal facility.' 'Waste disposal facilities'* are, however, listed as prohibited development in zone RU2. Therefore, the only *'waste or resources management facilities'* permitted in zone RU2 would be a *'waste or resource transfer station'* or a *'resource recovery facility.'*

The E2 zone permits with development consent, *Drainage; Earthworks; Environment facilities; Environmental protection works; Flood mitigation works; Public utility undertakings; Recreation areas;* and *Roads.*

The proposed Waste and Resource Management Facility would be permissible under draft PLEP 2008 as it fits within the definition of a *'resources recovery facility.'* Furthermore, as discussed in Section 4.2.3, SEPP Infrastructure also permits '*waste disposal facilities*' within the '*prescribed'* RU2 zone, or where, in the opinion of the Director General, the site's existing zoning is deemed as being '*equivalent*' to the RU2 zone.

No waste recycling, waste transfer operations, waste emplacement or resource extraction activities will be undertaken within the proposed E2 zone on the site as they are prohibited in this zone. The only works proposed in the E2 zone as part of the project are drainage and earthworks, which are permissible uses with consent.

5.0 ENVIRONMENTAL ISSUES AND PRELIMINARY ASSESSMENT

5.1 Environmental Sustainability Objectives

The Minister is required to consider the objects in Section 5 of the Act when assessing and determining a Project Application. Object 5(a)(vii) requires the '*encouragement of ecologically sustainable development (ESD).'*

With regard to ESD, the Act adopts the definition in the *Protection of the Environment Administration Act 1991* (PEAA, 1991). Section 6(2) of PEAA, 1991 states that ESD *'requires the effective integration of economic and environmental considerations in decision-making processes'* and that ESD *'can be achieved through'* the implementation of principles and programs including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms. In applying the precautionary principle, public decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment and an assessment of the risk-weighted consequences of various options.

This Project has a number of ESD features including:

- assistance in the reduction of greenhouse gas emissions through recycling and re-use of materials;
- non-sterilisation of the existing clay/shale resources on the site for future use;
- sustainable rehabilitation of a significantly disturbed area of land via non-putrescible waste emplacement, with the aim that the Project Site would be able to be re-used for future grazing purposes;
- incorporation of surface water, air emission, leachate and methane management features in the design to limit adverse environmental impacts; and
- minimisation of potential impacts on important biodiversity characteristics of adjoining land.

In summary, the Project would integrate all significant economic and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment.

5.2 Groundwater

5.2.1 Existing Hydrogeological Status

Based upon the May 2004 investigations conducted by R.W. Corkery & Co. Pty Limited, it was established that the upper 4m – 8m of materials below the natural surface are largely clays and highly weathered shales. The clays and weathered shales grade into fresh unweathered interbedded claystones, siltstones and laminites that are typical of the Bringelly Shale. The current lowest level of extraction within the northeastern corner of the Project Site lies approximately 50m above the base of the Bringelly Shale.

The groundwater within the Wianamatta Shale (of which Bringelly Shale is part of this sequence) is characterised by high salinity and high ammonia concentrations (>10mg/L) (Old 1942). The high salinity levels reflect the estuarine origin of the shale, although the quantities of water trapped in the shales is negligible. The groundwater movement within the Bringelly Shale is recognised to be of low flow due to its low permeability (Herbert 1979).

Based on visual observations within the current extraction area, it is concluded that the excavated areas may be above the level of saturated rock. The absence of groundwater encountered during the 2004 drilling investigations further confirmed the extraction area lies above the regional groundwater table.

5.2.2 Key Groundwater Management Issues and Preliminary Assessment

The groundwater would be protected from being contaminated by leachate and gas generated by emplaced waste, by a combination of engineered controls working in concert including:

- the application of an engineered liner (or the equivalent in-situ rock barrier) with a permeability of less than $1x10^{-9}$m/s and a thickness of greater than 0.9m;
- leachate extraction and controls on the base of all cells;
- measures to minimise the generation of leachate during emplacement and when progressively rehabilitated, via a low infiltration cap; and
- gas pressure relief measures in the completed cells.

The *Environmental Assessment* will detail a series of studies to characterise the groundwater regime at the site and justify the measures proposed to protect groundwater (in accordance with the requirements in DECC's *Environmental Guidelines: Solid Waste Landfills*.)

5.3 Surface Water

5.3.1 Existing Environment

The Project Site is located within the catchment of Blaxland Creek which is a tributary of South Creek, a tributary of the Hawkesbury/Nepean River system. Blaxland Creek flows generally in a northeasterly direction with a section of the creek approximately 100m in length flowing through the northwestern corner of the Project Site (see **Figure 2.1**). A water storage dam with a capacity of approximately 30ML is also located in the southeastern section of Project Site with two smaller sediment retention dams located in the northwestern corner and adjacent the central northern boundary of the Project Site. Preliminary results from water quality sampling within Blaxland Creek, the on-site dams and extraction area void indicate that the water is of a generally acceptable quality with pH ranging between 7.5 and 9.0. A full water quality analysis will be completed as part of the surface water assessment to accompany the *Environmental Assessment*.

The topography within the Project Site has been altered through the creation of voids, depressions and bunding. Drainage surrounding the Project Site is generally towards the northeast.

5.3.2 Key Surface Water Issues, Management and Preliminary Assessment

The key surface water management issue relates to the prevention of 'dirty' water flowing off site. The principal sources of pollution requiring management would include sediments from disturbed areas, waste and recycled/reprocess material stockpiles and leachate.

Currently, clean run-on water from undisturbed areas external to the Project Site is diverted around disturbed areas by the existing perimeter bund walls whilst runoff from disturbed areas within the Project Site is directed either to the water storage dams or collects within the existing quarry void.

The proposed surface water controls that would be implemented would include, but not be limited to the following.

- The continued diversion of "clean" water away from disturbed areas and the capture of "dirty water".
- Re-assessment and, if necessary, upgrade of existing water storage dams to ensure sufficient retention time so that any water discharged from site meets relevant water quality criteria.
- Separation of leachate water from all other surface water to reduce the volume of leachate required to be managed.
- In-cell stormwater diversion to minimise the generation of leachate.
- Installation of scour protection and other erosion control measures as required.

The design of all surface water and erosion control structures would be undertaken using a water balance and in accordance with the Soils and Construction handbook (Landcom 2004). With the implementation of these operational management measures, it is considered that surface water quality could be appropriately controlled so as not to result in any adverse off site impacts.

The final landform would be designed to be a predominantly free draining knoll with appropriate water management structures, including water storage dams, and stabilised with appropriate pasture species. Considering these measures and the fact that there would be limited run-on water, it is expected that the final landform would not present a significant surface water management issue or cause adverse impacts upon local surface water quality or quantity.

5.4 Dust

5.4.1 Existing Environment

The existing levels of dust in the vicinity of the Project Site is expected to be typical of a rural-urban fringe area where the principal sources of dust would be from agricultural activities, vehicle movements on the surrounding road network and construction or industrial activities. The exposed areas within the current approved extractive activities within the Project Site would also contribute to the existing dust levels. Quantitative deposited dust data will be obtained during the compilation of the *Environmental Assessment*.

5.4.2 Key Dust Issues, Management and Preliminary Assessment

The key issues relate to deposited dust and suspended particulate levels received at surrounding residences.

The Proponent would include regular watering of exposed surfaces and highly trafficked areas of the Project Site to reduce dust levels. Suspension of clay/shale extraction and despatch of clay/shale products would occur on days predicted and/or observed to experience high temperatures and wind speeds.

Emplacement cells would be progressively rehabilitated to reduce the area of non-vegetated surfaces.

Deposited dust monitoring gauges would be established at up to four surrounding locations to record existing dust levels and monitor any increases in deposited dust levels resulting from the Project.

5.5 Odour

5.5.1 Existing Environment

There is currently no odour generated within the Project Site, however, to the east of the Project Site, is rural land with associated livestock and grazing. This type of land-use activity has associated with it a degree of odour due to livestock and related activities.

5.5.2 Key Odour Issues and Preliminary Assessment

General solid (putrescibles) waste would not be received at the Project Site and as such the odour potential from the activities on site would be low.

Potential odour sources at the site would be associated with the following activities.

- Stockpiling of wood waste (grass, leaves, trees, shrubs and timber). No composting activities are proposed to be undertaken on site.
- Emplacement of general solid (non-putrescible) waste and its decomposition.
- Leachate evaporation.

To minimise odour emissions from the premises and to ensure that no offensive odour is emitted beyond the Project Site boundary, the following controls would be adopted.

- Operating a small active tipping face to minimise the area of uncovered waste in the emplacement area.
- Covering all waste at the end of each day's emplacement activities in accordance with DECC requirements.
- Collecting and oxidising gas from the rehabilitated cells.
- Controlling the pH of the leachate that is evaporated to minimise its odour, if necessary.
- Managing stockpiles to ensure that anaerobic conditions don't develop in the stockpiled wood waste.
- Airtight fittings to be included on the surface of the leachate risers.
- Operating an aerator on the leachate evaporation dam.

Odour emissions reflecting the site's design and operations will be modelled in the *Environmental Assessment* to confirm the expectation that offensive odour would not be detected at nearby residences above the levels specified by DECC.

5.6 Greenhouse Gases

5.6.1 Existing Environment

The Federal Government has released a White Paper which proposes the industries that will be captured by the Carbon Pollution Reduction Scheme (the Scheme). The Scheme proposes to cover landfill facilities that emit 25 000 tonnes or more of carbon dioxide equivalent a year.

5.6.2 Key Greenhouse Gases Management Issues and Preliminary Assessment

It is possible that the Federal Scheme will be made law. It is unlikely the proposed emplacement activities would generate greater than 25 000 tonnes of carbon dioxide equivalent per year, based on the waste types proposed to be emplaced. It is expected that mostly biologically inert waste would be emplaced (eg soils, lignin and plastics).

Regardless, if the Project is captured by the Federal Scheme, the Proponent would as a minimum capture and oxidise the methane component of the gases generated by the emplaced waste in all rehabilitated cells.

One large greenhouse benefit from the Project is having recover/recycling and waste emplacement operations all at one facility. Considerable greenhouse gas emissions would be avoided by not having to transport the unrecoverable/unrecyclable residual general solid (non-putrescible) waste off site to another facility.

The greenhouse gas contribution from the Project will be estimated as part of the *Environmental Assessment* and the implementation of appropriate mitigation measures outlined.

5.7 Litter

Litter would be controlled at the facility by regular clean-up campaigns during windy conditions and through the application of mobile litter fences, trash racks on stormwater flow lines and the collection of all litter on a daily basis if it leaves the Project Site.

5.8 Fire

5.8.1 Existing Environment

The western boundary of the Project Site is separated by at least a 5m buffer (in the form of an onsite road) from the adjoining Department of Defence land, which is forested. All other land adjoining the Project Site is generally cleared grazing land.

5.8.2 Key Fire Management Issues and Preliminary Assessment

Materials which present a fire risk on site would include:

- the stockpiles of combustible materials arising from the recycling operations; and
- the emplaced waste, a portion of which would be combustible.

The combustible materials that would be stockpiled on site for recycling are timber, paper, cardboard, tyres and plastics. Small proportions of these materials would be emplaced on site.

The risk of a fire would be minimised by:

- limiting the size of stockpiles of combustible materials;
- separating the stockpiles so that a fire cannot continue between them;
- regularly removing stockpiles of combustibles so that the risk of spontaneous combustion is minimised;
- not placing stockpiled combustibles on emplaced waste (as methane from the decomposition of the waste could potentially leach up into the stockpile and increase the risk of fire);
- inspecting all waste stockpiles and the emplacement areas for fire at a regular frequency;
- covering all emplaced waste with an inert material (eg VENM) on a daily basis;
- maintaining the buffer (in the form of a road and stormwater diversion channel) around the Project Site);
- oxidising gas biologically so that there is no naked flames (eg from flares) on site;
- controlling entry to the Project Site; and
- training staff in fire fighting procedures.

It is not expected that fires would occur at the Project Site and any in the event a fire did occur, it would be rapidly extinguished.

5.9 Traffic

5.9.1 Existing Conditions

As discussed in Section 3.8.2, access to the Project Site is provided from Mamre Road (MR 536), Luddenham Road (RR 7286) and subsequently Patons Lane. Patons Lane is a single lane approximately 5m to 6m wide sealed road without line markings or guideposts. The intersection of Patons Lane and Luddenham Road includes a deceleration lane on Luddenham Road for right-turning vehicles and flared turning paths on Patons Lane to accommodate the swept path of heavy vehicles. Luddenham Road is a two lane, approximately 7m wide sealed road with centre and shoulder line markings and guideposts. The posted speed limit on Luddenham Road in the vicinity of Patons Lane is 60km/hr, increasing to 80km/hr approximately 450m north of Patons Lane.

The intersection of Mamre Road and Luddenham Road includes decelerations lanes for vehicles turning right or left on Mamre Road into Luddenham Road. A short protected lane is also provided on Mamre Road vehicles turning right out of Luddenham Road.

Available RTA traffic data from 2005 for Mamre Road indicates annual average daily traffic (AADT) levels between 14 074 (south of Luddenham Road) and 32 534 (north of the ramps to the F4 Western Freeway). The 2005 AADT for Luddenham Road in the vicinity of Patons Lane was 2977.

5.9.2 Key Transportation Issues, Management and Preliminary Assessment

Key management issues relating to traffic include potential impact on the road pavement, traffic congestion and road safety.

A range of safeguards and management procedures would be adopted by the Proponent to ensure that all vehicles travelling to and from the Project Site operate in a manner that does not cause unacceptable impacts. These safeguards may include, but not necessarily be limited to the following.

- Patons Lane would be upgraded to a standard suitable to carry the proposed number of heavy vehicle movements.
- All drivers would be required to adhere to a "code of conduct" or similar during the delivery of materials to the site or transport of materials from the site.
- No trucks would be permitted to turn right from Patons Lane into Luddenham Road.
- All loaded trucks would exit the Project Site via the outgoing weighbridge to ensure trucks comply with RTA loading requirements and ensure overloading does not occur.

The potential impacts of the predicted volume of trucks entering and exiting the Project Site on traffic flows and road safety will be considered in detail as part of the *Environmental Assessment* for the Project. This assessment will be undertaken in accordance with the *Guide to Traffic Generating Development* and *Road Design Guide* (Roads & Traffic Authority), and/or relevant Austroad standards.

5.10 Noise

5.10.1 Existing Noise Climate

The existing noise environment is typical of a rural-urban fringe environment with the principal sources of noise in the vicinity of the Project Site including traffic on Luddenham Road, Mamre Road, the M4 Motorway, activities on the adjoining Commonwealth land, rural activities including stock, wind in the trees and birds. When operational, the approved clay/shale extraction operations within the Project Site would also contribute to the ambient noise levels.

5.10.2 Key Noise Issues, Management and Preliminary Assessment

A number of the major noise sources associated with the Project would not greatly differ from those associated with the existing approved operations with additional noise sources principally associated with the waste recycling facility but would likely be of a similar nature as to operations commonly undertaken during extraction operations.

Measures to reduce potential noise impacts would include the following.

- Use of silencing equipment including mufflers and low frequency modulated reversing alarms.
- Effective use of existing acoustic bunding.
- Maintenance of internal site access roads to minimise truck body noise.
- Strict adherence to operational hours.

It is considered that, with the implementation of appropriate measures and the separation distance to surrounding residences, noise could be effectively managed. In order to demonstrate compliance, noise monitoring would be undertaken by the Proponent at the closest potentially affected residences. Noise monitoring would also be undertaken should a legitimate noise-related complaint be received.

A complete noise and vibration assessment will be completed for the Project, to be undertaken by an appropriately qualified acoustic consultant in accordance with the *NSW Industrial Noise Policy* and *Environmental Criteria for Road Traffic Noise*. It is noted that the assessment of noise attributable to Project-related traffic under the latter document would relate to traffic on both Patons Lane and Luddenham Road.

5.11 Visual Amenity

5.11.1 Existing Visual Environment

The existing visual environment reflects that of a rural-urban fringe area with surrounding stands of native vegetation, predominantly to the west and grassed fields north, east and south. A residential area ("The Vines") is also located approximately 0.5km to 1.5km north of the northern Project Site boundary.

The existing perimeter bunds on the perimeter of the Project Site together with existing vegetation adjacent Blaxland Creek provide a significant level of visual protection from surrounding vantage points (see Plates 5.1 and 5.2)**.**

Plate 5.1 View South Towards Project Site from Cabernet Cct ("The Vines")

Plate 5.2 View North Towards "The Vines" Estate from Top of Northwestern Bund within the Project Site

5.11.2 Key Management Issues and Preliminary Assessment

The key management issue would be the minimisation of additional visual exposure of the proposed operations. It is intended that the perimeter bunds on the northern and eastern boundaries of the Project Site would be initially retained until they are required to be incorporated into the waste emplacement. Once the elevation of each emplacement cell reaches the level at which these activities become visible, emplacement activities would be undertaken such that the tipping face would preferentially be open to the south or west, thereby limiting visibility to residential areas to the north and east.

In order to monitor the visibility of the site over time, the Proponent would photograph the operation from vantage points to the north, east and southeast on an annual basis.

5.12 Aboriginal Heritage

5.12.1 Site Surveys and Investigations

No Aboriginal heritage sites are known to occur within the Project Site.

5.12.2 Key Heritage Issues, Management and Preliminary Assessment

As no sites of Aboriginal heritage significance are known to occur within the Project Site and the fact that the majority of the site has been heavily disturbed, no key Aboriginal heritage issues or management measures have been identified. However, the site will be re-inspected during the preparation of the *Environmental Assessment* in accordance with relevant guidelines and in consultation with relevant Aboriginal stakeholders**.**

Additionally, the Proponent is aware of its obligations under the *National Parks and Wildlife Act 1974* and should any item of suspected Aboriginal heritage significance be uncovered during extraction-related activities, work in the area surrounding the suspected relic would cease and the DECC and relevant Aboriginal stakeholders would be contacted for advice.

5.13 Flora and Fauna

5.13.1 Existing Environment

The Project Site has previously been heavily disturbed with little natural vegetation remaining on site. Native vegetation is essentially restricted to the section of Blaxland Creek that flows through the northwestern corner of the Project Site. Surrounding the Project Site, areas to the north, east and south are also largely cleared. However, as discussed in Section 2.2, land owned by the Commonwealth immediately to the west of the Project Site contains a significant remnant area of Cumberland Plain Woodland, an Endangered Ecological Community listed under both the EPBC Act and *Threatened Species Conservation Act 1995*.

A preliminary fauna survey of the Project Site completed by Aquila Ecological Surveys did not identify any Threatened species within the Project Site with potential habitats both severely degraded and well represented off site.

A flora survey will be undertaken as part of the *Environmental Assessment*. An important component of the survey will be identification of weeds on site to assist in preparing a weed management strategy, particularly for the perimeter bund walls.

5.13.2 Key Ecological Management Issues and Preliminary Assessment

The principal ecological management issue relates to minimising the potential for off site impacts or impacts upon the section of Blaxland Creek and its riparian zone within the Project Site. Through the avoidance of disturbance of this area and implementation of appropriate surface water management controls, it is considered that there would not be any significant ecological constraints to the Project.

Comprehensive flora and fauna assessments will be completed as part of the *Environmental Assessment* to be prepared for the Project.

5.14 Socio-economic

An analysis of the socio-economic impact would be undertaken as part of the *Environmental Assessment* to identify any changes (both positive and negative) to the culture, community, political systems, environment, health and wellbeing of people in the surrounding local and regional communities that may arise as a result of this Project.

The nearest residential suburbs to the Project Site include the southern part of Orchard Hills, St Claire and Erskine Park to the west. The Proponent has commenced community consultation with the nearest residential properties surrounding the site in Orchard Hills, which have been determined as those most likely to be potentially impacted on by the Project. The outcome and data obtained from this consultation will be provided in the *Environmental Assessment*.

The key anticipated socio-economic impacts likely to result from the Project would include:

- traffic and access;
- odour and dust;
- visual amenity;
- regulation and monitoring;
- employment generation;
- future land use; and
- impact on property prices.

With respect to the anticipated social impacts, the Project would focus on ensuring that both the off-site and on-site impacts are effectively managed to maintain the existing amenity of surrounding residents at the level established in the approval of the clay/shale extraction operations.

Some of the likely positive social impacts of the Project would include:

- improved visual amenity of the site via its progressive rehabilitation in order to reinstate a final landform consistent with the surrounding rural landscape;
- receipt of non-putrescible waste only, which would significantly limit the potential for adverse odour generation;
- operational hours consistent with the site's existing approval for clay/shale extraction, with the exception of an additional opening period on Saturdays;
- traffic generation generally consistent with the site's existing approval for clay/shale extraction; and
- significant upgrades to Patons Lane that would assist in reducing dust and noise generation.

In terms of economic impacts, approximately 6 to 10 equivalent full-time people are likely to be employed to assist in developing the Project. Subsequently, approximately 10 and 15 persons would be employed on the site once the Project is in full operation.

With respect to property prices, given the distance between the site and the nearest established residential area (500m), the Project is unlikely to have any adverse impact on the basis that the potential environmental issues are managed in an effective manner. In the long term, the rehabilitation of this site, if anything, is likely to improve the general locality and, therefore, potentially have positive flow on effects with respect to local property prices. The site's rehabilitation may also permit in the future, a further release of surrounding land for the purposes of new residential development.

6.0 CONSULTATION

6.1 Government Agencies

The Proponent has held preliminary discussions with Penrith City Council, the DECC and DoP regarding the status of the existing site and the proposed Project.

The outcomes from these discussions have been supportive and constructive. As a result of suggestions from Council, the Proponent has planned to return the current disturbed site to a landform suitable for grazing which is consistent with the scenic and land use objectives of the Rural A Zone 1(a) zoning outlined within the Penrith Local Environmental Plan No.201 (see Section 4.4 above). The Proponent intends to continue discussions with relevant government agencies and seek their Director-General Requirements to be addressed within the *Environmental Assessment*.

6.2 Local Residents

Three of the four immediately adjoining neighbours (the fourth being the Commonwealth of Australia) have been contacted directly by the Proponent to inform them of the proposed Project. Additionally, a further approximately 55 residents and land owners have been informed through a mail out and letter box drop with a commitment to provide an information and feedback package following the finalisation of the preliminary design and investigations.

The Proponent is committed to community consultation and will maintain an ongoing dialogue with the community to keep them informed of the Project and to seek constructive feedback and comments during the preparation of the detailed *Environmental Assessment.*

7.0 CONCLUSION

It is concluded, based upon the outcomes of the preliminary assessment, that it would be possible to present a conceptually designed and assessed proposal, focusing upon the key environmental management issues identified for the Project, for determination by the Minister for Planning.

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