



FINAL DECOMMISSIONING AND CLOSURE PLAN

Clay Excavation, Apple Street, Upper Swan





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PTY LTD**

Trading as Midland Brick

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TABLE OF CONTENTS

Page

1.0	INTRODUCTION	1
1.1	Background	1
1.2	Landownership.....	2
1.3	Clay Excavation Activities	3
2.0	MANAGEMENT OBJECTIVES.....	5
3.0	REMOVAL OF PLANT AND INFRASTRUCTURE	7
3.1	Site Clean-up.....	7
3.2	Decommissioning of On-site Drainage Works	7
4.0	DRAINAGE MANAGEMENT	9
4.1	Surface Water.....	9
4.2	Groundwater.....	10
5.0	COMPLETION AND REHABILITATION	13
5.1	Rehabilitation and Site Contours.....	13
5.2	Revegetation	15
5.3	Care and Maintenance	16
6.0	IDENTIFICATION OF CONTAMINATED AREAS	17
7.0	STAKEHOLDER CONSULTATION	19
8.0	COMPLETION CRITERIA	21
9.0	REFERENCES	23

TABLES

(contained within report text)

	Page
Table 1: Condition M10.2 of Ministerial Statement 657	2
Table 2: Species Suitable for Revegetation	15

FIGURES

(compiled at rear of report)

Figure 1: Site Location	
Figure 2: Predicted Final Ground Levels	

PLATES

(contained within report text)

	Page
Plate A: Apple Street Southern Amenity Lake (May 2013).....	9
Plate B: Apple Street Site Configuration 7 May 2011, Showing Amenity Lake Creation	14
Plate C: Apple Street Site Configuration 12 May 2015, Showing Subsequent Fill in the South-west Corner, and Stargaze’s Activity in the North-east Corner	14

APPENDICES

APPENDIX 1: Statement 657 Audit Table (2013)	
APPENDIX 2: Preliminary Decommissioning and Rehabilitation Plan, 2006	
APPENDIX 3: Lot 42 and 43 Apple Street EMP, 2006	

1.0 INTRODUCTION

1.1 Background

Boral Bricks Western Australia Pty Ltd (trading as Midland Brick) commenced excavation from Lots 42 and 43 Apple Street, Upper Swan (previously Lots 21 and 22, then Lots 40 and 41) in March 2002, following approval granted by the Minister for the Environment. The site is now known as Lot 1491 Great Northern Highway, Upper Swan (Figure 1).

The seasonal clay excavation project is simple and relatively small, with the site covering an area of approximately 14.6 ha of former pastureland. The site is operated by Midland Brick under an arrangement with the current landowner, Stargaze Asset Pty Ltd (see Section 1.2).

The site is located adjacent to the Ellen Brook Nature Reserve (EBNR), and a 100 m buffer to the reserve is maintained, as approved. Similarly, all surface water drainage has been permanently diverted from entering the EBNR, under an approved drainage diversion strategy.

The Ministerial approval currently applicable, Statement 657 (previously Statement 265), is subject to a range of environmental conditions, the majority of which have now been satisfied. Midland Brick has also lodged Performance and Compliance Reports over the operational period. The most recent (RPS 2013) Audit Table for the project is attached as Appendix I.

Ministerial Condition M10.1 required the preparation and implementation of a Preliminary Decommissioning and Rehabilitation Plan (RPS 2006a, Appendix 2), which was submitted to the (then) Department of Environment and Conservation (DEC) on 14 September 2006, and approved in January 2007.

Midland Brick now estimates that clay excavation activities will cease at the site in approximately two years (dependent upon market demands), and the Office of the Environmental Protection Authority (OEPA) – Compliance Branch has agreed that it is timely to prepare the Final Decommissioning Plan, required by Condition 10.2 (Table 1).

Table 1: Condition M10.2 of Ministerial Statement 657

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken
657:M10:2 Final Decommissioning Plan	<p><u>Action</u> Prepare a Final Decommissioning/Closure Plan designed to ensure that the site is left in an environmentally acceptable condition.</p> <p><u>How</u> Address:</p> <ol style="list-style-type: none"> 1 Removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders. 2 Long-term management of ground and surface water systems. 3 Rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s). 4 Identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities. <p><u>Objective</u> To ensure that the site is left in an environmentally acceptable condition.</p> <p><u>Evidence</u> Final Decommissioning Plan</p>	Operation At least 12 months prior to the anticipated date of decommissioning.
657:M10:3 Final Decommissioning Plan	<p><u>Action</u> Implement the Final Decommissioning/Closure Plan.</p> <p><u>How</u> In accordance with the approved Final Decommissioning/Closure Plan (see M10:2).</p> <p><u>Objective</u> To ensure that the site is left in an environmentally acceptable condition.</p> <p><u>Evidence</u> CR</p>	Closure Until such time as the Min Env determines that the proponent's decommissioning/ closure responsibilities have been fulfilled.
657:M10:4 Final Decommissioning/ Closure Plan	<p><u>Action</u> Make the Final Decommissioning/Closure Plan required by Condition 10-2 publicly available.</p> <p><u>How</u> Carry out the following:</p> <ol style="list-style-type: none"> 1 Request DoE to advertise the availability in the EPA weekly advertisement in the Monday edition of "The West Australian" newspaper. 2 Provide free copies of the documentation when approved for release to organisations nominated by EPA, such as the DoE library (2 copies), local government authority (2 copies), J.S Battye Library (2 copies) and local public libraries (2 copies each). Also make a copy available on a website if the proponent has one. <p><u>Evidence</u> Contact Audit section when plan is ready for advertising.</p>	Operation When the plan has been approved for release.

1.2 Landownership

Since the original approval, the ownership of the land has changed, and the new landowner is Stargaze Asset Pty Ltd (Stargaze).

At present, under Ministerial Statement No. 657, Midland Brick (as Boral) is deemed responsible for the final rehabilitation plan for the site, which was initially planned as four small lakes (ex-clay pits) surrounded by pasture. However, Stargaze is implementing an alternative rehabilitation and final land use plan to that previously approved for Midland Brick, essentially filling the site (~200,000 m³) to pre-excavation levels and stabilising with pasture grasses and native trees, commencing in the south-west corner.

Stargazes' alternative plan was submitted as a Development Application (DA) to the City of Swan by Site Environmental and Remediation Services (SERS) on behalf of Stargaze, on 16 April, 2013 (these documents are available on request).

The DA was subsequently forwarded to the OEPA by the Shire of Swan for comment, but was not a formal referral under Section 38 of the *Environmental Protection Act 1986*. The status of approvals for the activities proposed in the Stargaze DA is unknown.

Consequently, this Final Decommissioning/Closure Plan describes the decommissioning process undertaken by Midland Brick, and rehabilitation activities that will be (or are being) undertaken by the landowner, Stargaze. The water management and rehabilitation descriptions are based primarily on the information provided in the Stargaze Development Application and in subsequent discussions regarding responsibility.

However, it is not the purpose of this plan to seek any approvals, environmental or otherwise, for the fill activities being undertaken by Stargaze, but to provide and describe the associated commitments in the landowners DA in relation to post clay excavation environmental management as part of the fill program.

This Final Decommissioning/Closure Plan is also based on the guidance provided by the Department of Environmental Regulation/OEPA Guidelines for Mine Closure Plans (2015).

1.3 Clay Excavation Activities

Prior to excavation commencing at the site, topsoil from part of Cell 1 was windrowed into a 1.5 m tree planted bund in readiness for the 2001–2002 summer campaign. Excavation has continued within cells in accordance with the approved EMP staging plan (Appendix 3), and market demand.

During the earthworks program (topsoil and overburden removal), approximately 0.5 ha of the clay resource is exposed at one time to reduce the potential for disturbance to local residents. Only a relatively small quantity of clay (approximately 30–50,000 tonnes) is excavated during the single campaign each year. Excavation occurs to a maximum depth of approximately 7 m below ground surface, which is above the regional water table.

Trucks are loaded directly from the pit with an excavator working on a ~3 m high face, with no clay stockpiling on site. The clay excavation and cartage program is short, generally running for four to six weeks between November and May each year, depending on the tonnage removed.

No permanent infrastructure is located at the site. Mobile machinery is brought to the site for each short campaign but removed at the end of the excavation period. No fuel or other noxious materials are stored at the site by Midland Brick. Vehicles are refuelled via a mobile refuelling truck.

No excavation has occurred within the 100 m EBNR buffer and the boundary of the buffer, which has been bunded to prevent access.

Prior to commencement of excavation, drainage from the site and the locality entered the Ellen Brook Nature Reserve (EBNR). All drainage waters have since been diverted from entering the EBNR in accordance with Ministerial Statement 657.

All turbid waters generated during excavation have been contained on site through the construction of excavation pits as stormwater collection basins.

2.0 MANAGEMENT OBJECTIVES

The primary objective of rehabilitation of the site has been to provide a landform that is aesthetically acceptable, functional, and capable of supporting a viable end use to the satisfaction of the landowners. The final land use originally planned was four relatively shallow (3 m deep) “amenity lakes” within the excavated area.

However as described in the previous section, the present landowner is implementing an alternative rehabilitation proposal to that approved for Midland Brick, which is returning the land to its pre-excavation level to allow for possible further development. Sand and fill material is being used to fill the excavation pits which have been created through the extraction process. Therefore it is not anticipated that any lakes will remain on the site.

In accordance with 657:M10:2, this Final Decommissioning and Closure Plan considers:

- removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders
- long-term management of ground and surface water systems (drainage)
- rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s)
- identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

Each factor is described in detail in the following sections.

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3.0 REMOVAL OF PLANT AND INFRASTRUCTURE

The objective of decommissioning is to remove and dismantle any machinery, debris and structures used/generated during the life of the project such that the site could be rehabilitated to the proposed land use. No fixed structures are located at the site as described in Section 2.0.

Decommissioning of the site will comprise the following activities.

3.1 Site Clean-up

The site will be cleaned up through the removal of any debris. Debris will be disposed to landfill and products that can be reused (former signage, temporary fencing, hydrocarbon spill kits, etc.) will be collected and relocated on another Midland Brick site.

3.2 Decommissioning of On-site Drainage Works

The Drainage Management Plan (BBG 1998) requires that drainage waters from the south-western side of Great Northern Highway be diverted from entering the tortoise habitat area of the Ellen Brook Nature Reserve (EBNR). This was completed through installation of the Diversion Drain in 1994–1995. These management provisions were also highlighted and reflected in the revised EMP (RPS BBG 2006b), which was approved the (then) DEC.

Run-off from the excavation areas of the site is currently collected and contained within the southern pits. This is achieved by the presence of the surrounding bunds and strategic contouring of disturbed areas.

Run-off from disturbed areas is contained within the pits, which are isolated from the remainder of the site by perimeter bunds. The perimeter bunds were visually inspected by RPS on 15 May 2013 and again in 2015. The bunds appeared to be maintained in accordance with the management plan. At the commencement of the annual excavation program, any surface water present in the active pit is pumped to a non-active pit to allow for evaporation over summer.

Once vacated by Midland Brick, it is anticipated that the on-site drainage will be managed by Stargaze (see Section 4), and the EBNR drainage diversion will be maintained to ensure continued protection of the reserve in perpetuity by the Shire of Swan and Main Roads WA. See also Section 4 – Drainage Management.

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4.0 DRAINAGE MANAGEMENT

Midland Brick has constructed and managed the surface and groundwater at the Apple Street site in accordance with Ministerial conditions for the project. However, Stargaze, as the landowner, is now managing and filling the site, and Midland Brick has no direct or indirect control over these activities. On this basis, the post-excavation water management at the site is described based on the Development Application lodged by SERS (2013).

4.1 Surface Water

SERS (2013) states that the landowner (Stargaze) is filling the northern and south-western portion of the property initially, and all surface waters associated with the proposal will be diverted to the southern amenity lake by means of spoon drains and newly created falls/slopes. Water will not be allowed to pond at the property except within the current amenity lakes while the development is being undertaken.

Plate A shows the characteristics of the southern amenity lake.



Plate A: Apple Street Southern Amenity Lake (May 2013)

The amenity lakes will be used as a source of water for dust suppression throughout the project. When it is the time to develop/fill the on-site amenity lakes, the excess of water in the amenity lakes will be pumped out and carted off site for dust suppression use at Stargaze's property at Lot 5 Walyunga Road, Bullsbrook.

SERS (2013) states that there will be no surface water run-off from the property. There are current separation bunds on site that contain/divert surface water on the property and these shall be maintained throughout the lifespan of the filling and development project. Upon completion the site will slope from the north-eastern corner to the south-western corner at a slope of 0.2% across the site (away from the Ellen Brook Nature Reserve). It is envisaged that once the property has been filled, that a stormwater collection basin be developed at the south-western portion of the property in order to collect future stormwater across the property and maintain the commitment to not allow any surface water leave the property.

Figure 2 (from SERS 2013, Figure 6) shows predicted finished levels for the site once filled.

4.2 Groundwater

Midland Brick has been regularly monitoring and reporting groundwater levels and quality throughout the clay excavation activities, in accordance with Ministerial approvals.

The water table is approximately seven metres below ground level, and the base of the aquifer is about 20 metres below ground level. The existing excavation on site has not reached the water table and no dewatering has taken place as part of the clay extraction. Monitoring of nested bores indicates that there has been no significant change to groundwater quality or quantity since the commencement of excavation activities (Appendix I).

As part of its Development Application, SERS (2013) states that the management of water on the site is a critical part of the successful management of both extraction and rehabilitation activities, and no changes to the current management strategy are proposed, with the following commitments by Stargaze:

- transport all used plant off-site
- any grease canisters, fuel filters, oil filters and top-up oils be recovered and removed from site
- a vehicle wash-down is not to be used
- no bulk storage of fuels, oils and lubricants on the site

- regular inspections of plant fuels lines and oil and hydraulic fluids are carried out
- servicing of plant and equipment occurs off site
- accidental spill containment and clean-up protocol is in place
- rubbish generated is recycled or taken to an approved landfill site
- the site is maintained in a tidy manner by removing all rubbish regularly off site.

Further, the groundwater monitoring that currently occurs (by Midland Brick) is proposed to continue throughout the lifespan of the project by Stargaze.

It is proposed that groundwater be monitored for a range of analytes at the existing six borehole locations on the property and undertaken prior to the development commencing, and at six month intervals thereafter (at least five months apart). All reports will be made available to the City of Swan and the DEC (sic).

On this basis, once Midland Brick discontinues clay excavation at the site, all groundwater management and monitoring will be the responsibility of the landowner, Stargaze Asset Pty Ltd, in accordance with commitments within its Development Application (SERS 2013).

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5.0 COMPLETION AND REHABILITATION

5.1 Rehabilitation and Site Contours

The objective of rehabilitation is to restore the site to a stable landform that is aesthetically acceptable and capable of supporting a viable end use to the satisfaction of the landowners. The original landowners requested a number of amenity lakes be designed to rehabilitate the area, contoured to create shallow basins, together with the re-establishment of pasture grasses and native vegetation with a landscape function.

However SERS (2013) states that the present landowner (Stargaze Asset Pty Ltd) wishes to implement a “more comprehensive, sustainable and effective rehabilitation proposal”, which will return the land to its pre-excavation level and allow for further development.

Sand and clean fill material will be used to fill the excavation pits which have been created through the clay extraction process. It is not anticipated that lakes will remain on the site. There are three broad elements to the works which will take place on site as follows:

- the tipping of material
- the spreading of material
- the compaction of material.

Clean fill material comprising of sand and clay only will be used to rehabilitate the application site.

SERS (2013) examples of clean fill material are virgin excavated material (e.g. clay, gravel, sand, soil, rock), or such material that is mixed with:

- waste that has been excavated from areas that are not contaminated as a result of industrial, commercial, mining or agricultural activities, with manufactured chemicals and does not contain sulfuric ores or soils (AAS or peats)
- materials not from a “clean excavation” that have been validated to meet relevant Ecological Investigation Levels (EILs).

All fill will be certified clean (excavated from sites with no suspicion of contamination or, if so, validated showing levels below EILs) prior to use as clean fill on the site. It is estimated by SERS that ~200,000 m³ of material will be imported to the site over approximately four years.

In terms of fill activities conducted to date, the Apple Street site configuration in May in 2011 and then 2015 are shown in Plates B and C. The amenity lake in the central west of the site has been filled.



Plate B: Apple Street Site Configuration 7 May 2011, Showing Amenity Lake Creation



Plate C: Apple Street Site Configuration 12 May 2015, Showing Subsequent Fill in the South-west Corner, and Stargaze’s Activity in the North-east Corner

Cover material will be used for the final capping of the rehabilitated area. Cover material is available on the site in the form of the constructed boundary bunds. The final cover layer will not be placed until the final levels are achieved. The rehabilitation of each pit shall commence at the completion of each stage to allow for periodic reclamation of land. The cover material is expected to be as follows:

- infiltration drainage layer: >300 mm of permeability >-5 m/s
- topsoil layer: >100 mm.

Rehabilitation of the site will include the stages described in the following sections from SERS (2013).

5.2 Revegetation

The bunded areas around the perimeter of the site were planted with native tree species at the commencement of the project.

The following native species have been identified in the surrounding areas, and are suggested for revegetation given their suitability for the soil type and hydrological regime (Table 2). These species are consistent with the rehabilitation planting scheme which was approved in the 2006 preliminary rehabilitation plan.

Table 2: Species Suitable for Revegetation

Scientific Name	Common Name
Trees	
<i>Allocasuarina fraseriana</i>	Common sheoak
<i>Corymbia calophylla</i>	Marri
<i>Eucalyptus accedens</i>	Powderbark wando
<i>Eucalyptus rudis</i>	Flooded gum
<i>Eucalyptus wandoo</i>	Wandoo
<i>Melaleuca raphiophylla</i>	Freshwater paperbark
Shrubs	
<i>Acacia pulchella</i>	Prickly moses
<i>Acacia saligna</i>	Golden wreath wattle
<i>Callistemon phoeniceus</i>	Lesser bottlebrush
<i>Hakea trifurcate</i>	Two leaf hakea
<i>Hakea varia</i>	Variable leaf hakea
<i>Jacksonia furcellata</i>	Grey stinkwood
<i>Jacksonia sternbergiana</i>	Green stinkwood
<i>Viminaria juncea</i>	Swishbush
<i>Hardenbergia comptoniana</i>	Native wisteria
<i>Hypocalymma robustum</i>	Swan River myrtle
<i>Hypocalymma angustifolium</i>	White myrtle

Pasture species will be planted in areas between lakes to assist with surface stabilisation and prevent erosion and dust generation.

5.3 Care and Maintenance

SERS (2013) states that the proposed revegetation plan will ensure the long-term restoration of the site. The planting of vegetation will provide stability for the soil and reduce the uplift of dust.

Similarly to the original preliminary decommissioning plan, planting of tree seedlings will be undertaken during autumn, prior to winter rains. Local native species will be used exclusively in the rehabilitation program and any lost seedlings will be replaced in the following winter.

6.0 IDENTIFICATION OF CONTAMINATED AREAS

As previously described, the seasonal clay excavation activities are short, spanning only six weeks or less duration.

In accordance with the approved EMP for the project (RPS Bowman Bishaw Gorham 2006b), no permanent infrastructure is located at the site. Mobile machinery is brought to the site for each short campaign but removed at the end of the excavation period.

No fuel or other noxious materials are stored at the site by Midland Brick. Vehicles are refuelled via a mobile refuelling truck.

Water quality monitoring at the site has not identified any contamination issues.

No dumping of rubbish has been undertaken at the site by Midland Brick.

On this basis there are no areas of contamination by Midland Brick's activities identified on the site, and consequently there is no requirement for provision of evidence of notification and proposed management measures to relevant statutory authorities.

However, Midland Brick notes that the new owners are storing machinery at the site (see Plate C), but has no control in any form over that (or other) activity by the land owner.

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7.0 STAKEHOLDER CONSULTATION

The stakeholders involved in the site end use decision and their responsibilities include Midland Brick (who will undertake the decommissioning of clay excavation at the site), the City of Swan (who has issued an extractive industries licence to Midland Brick which includes a requirement for site decommissioning and some form of rehabilitation), the Environmental Protection Authority – Compliance Branch, and the landowner (now Stargaze Asset Pty Ltd) who will take over management of the site as a whole once Midland Brick ceases excavation (however this aspect has already progressed).

The process to agree and implement the end use includes:

- 1 Midland Brick, in consultation with the landowner, prepare a Final Decommissioning and Closure Plan which includes the information required by the Ministerial Statement (this report).
- 2 Final Decommissioning and Closure Plan to be submitted to the City of Swan and OEPA – Compliance Branch for comment.
- 3 Comments to be incorporated into report and resubmitted to the OEPA – Compliance Branch for assessment and approval.
- 4 The landowner to implement the approved Final Decommissioning and Closure Plan.

It was subsequently requested that the organisations nominated to receive copies of the FDCP (see Condition 657:M10.4) be changed to the (then) DEC library (two copies) and the local government authority (two copies).

However, given that the Apple Street operation is small and will be returned to pasture, and there is little (if any) public interest in the project, Midland Brick requests that the requirement to publically advertise the Final Decommissioning Closure Plan be changed to consultation with the OEPA – Compliance Branch and City of Swan only.

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8.0 COMPLETION CRITERIA

The Apple Street clay excavation site is cleared land in a rural setting, in private ownership.

Completion criterion for the successful decommissioning and rehabilitation of the site has been defined as when the site becomes stable (i.e. no significant erosion evident and tree growth and pasture is maintained) and can be managed for its proposed land use. Midland Brick considers the final land use to be rural pasture; however, the landowner, Stargaze Asset Pty Ltd, may ultimately consider other uses.

The site will be assessed at least twice per year (following summer and winter) to determine the progress of the rehabilitation and whether any maintenance work is required in terms of erosion and revegetation. As previously noted, native species which have not survived will be replaced by the following winter, by Stargaze Asset Pty Ltd.

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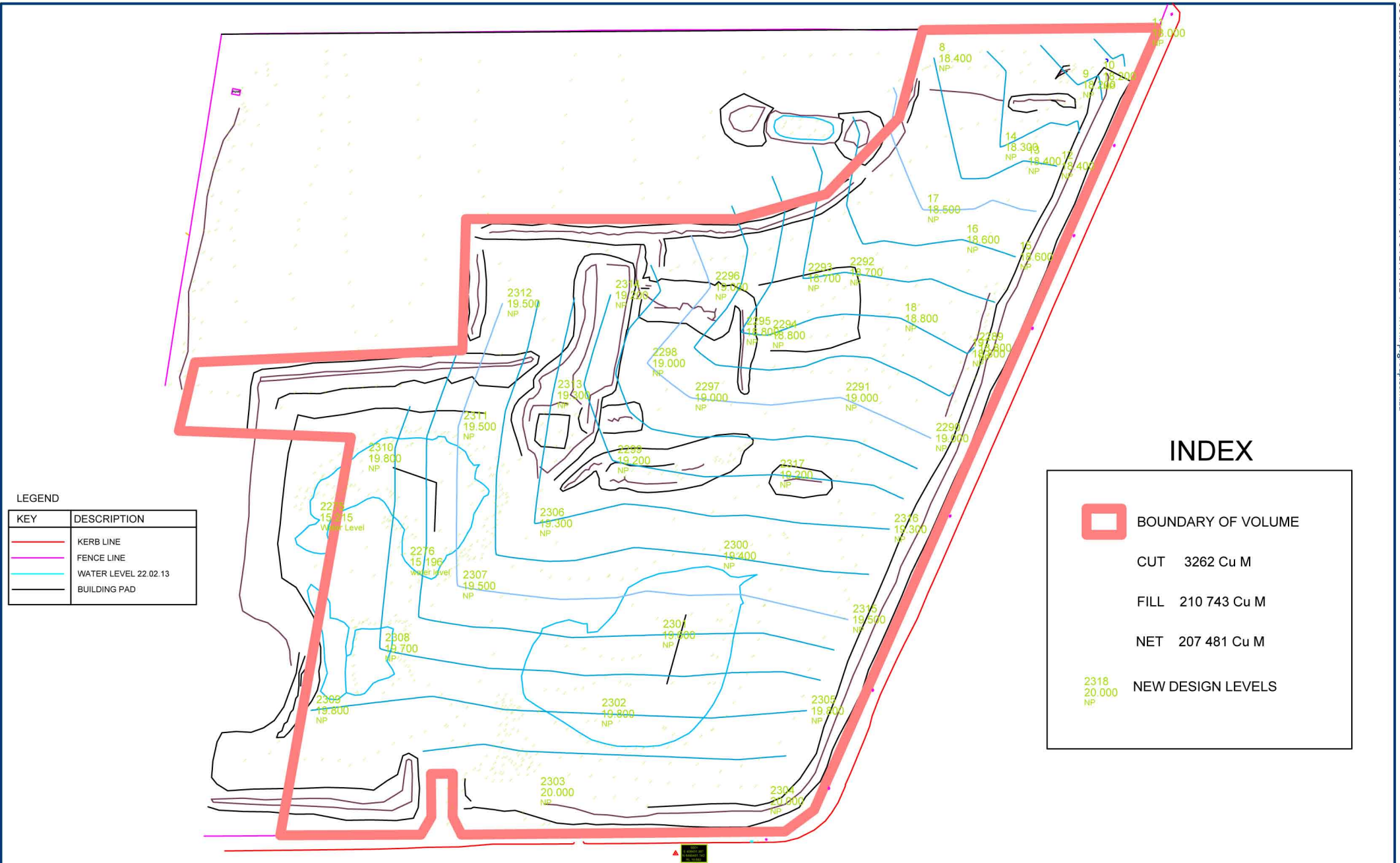
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FIGURES





LEGEND

KEY	DESCRIPTION
	KERB LINE
	FENCE LINE
	WATER LEVEL 22.02.13
	BUILDING PAD

INDEX

	BOUNDARY OF VOLUME
	CUT 3262 Cu M
	FILL 210 743 Cu M
	NET 207 481 Cu M
	NEW DESIGN LEVELS

APPENDIX I

**Statement 657 Audit Table
(2013)**

APPENDIX I: Statement 657 Audit Table (2013)

Table I-1: Current and Requested Status of Commitment and Conditions for Lots 42 and 43 Apple Street, Clay Excavation Project (Ministerial Statement 657) 2013

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:M1:1 Implementation	<u>Action</u> Implement the proposal as documented in Schedule 1 of Statement 657, subject to the conditions of this statement. <u>Objective</u> To avoid any unforeseen impacts.	Overall As required by the commitments.	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.1)
657:M2.1 Proponent Commitments	<u>Action</u> Implement the environmental management commitments documented in Schedule 2 of Statement 657. <u>Objective</u> To minimise unforeseen impacts.	Overall Implementing the proposal.	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.1)
657:M3.1 Nominated Proponent	<u>Action</u> The proponent nominated by the Minister for the Environment, under S38(6) or (7) of the EP Act is responsible for the implementation of the proposal until the Minister has revoked this nomination and nominated another person in respect of the proposal under S38(7) of the EP Act. <u>Objective</u> To ensure legal responsibility for the project rests with a nominated proponent.	Overall Proposing to change the implementation of the proposal.	Min. Env.	Satisfactory to date	This PCR (Section 3.2)
657:M3.2 Change in Proponent	<u>Action</u> Any request for a change in proponentship shall be accompanied by a copy of the Minister's statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the Statement 657. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided. <u>Objective</u> To ensure that the Minister is able to appoint a replacement proponent. <u>Evidence</u> 1. Letter applying for a transfer of proponent and a copy of the Statement endorsed by the proposed replacement proponent; 2. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal.	Overall	Min. Env. EPA	Not required at this stage	This PCR (Section 3.2)

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:M3.3 Proponent	<p><u>Action</u> Notify the DoE of any change of proponent contact name and address.</p> <p><u>Objective</u> To ensure the DoE is able to maintain contact with the proponent.</p> <p><u>Evidence</u> Notification of change of proponent contact name and address.</p>	Overall Within 60 days of any change of name or address.	DEC	Satisfactory to date	This PCR (Section 3.2 and Appendix 3)
657:M4:1 Commencement	<p><u>Action</u> If the proposal has not been substantially commenced within five years of the date of the statement published on 29 May 1992, the approval to implement the proposal as granted in that Statement, shall lapse and be void.</p> <p><u>How</u> The Minister will determine any question as to whether the proposal has been substantially commenced.</p> <p><u>Objective</u> To ensure that the data used in the assessment of the proposal represents current scientific knowledge.</p>	Overall	DEC	No longer relevant	This PCR (Section 3.3)
657:M4:2 Commencement	<p><u>Action</u> Make an application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of the Statement published on 29 May 1992</p> <p><u>How</u> An approval may be granted for an extension of the approval period if;</p> <ol style="list-style-type: none"> 1 The environmental factors of the proposal have not changed significantly. 2 New, significant environmental issues have not arisen. 3 All relevant government authorities have been consulted. Note: the minister for the environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal. <p><u>Objective</u> To ensure that the project is implemented using the most recent information and technology available.</p> <p><u>Evidence</u> Letter regarding extension required stating that the proposal is to be implemented as approved.</p>	Overall At least six months prior to the expiration date of the five year period (date of statement is 29 May 1992).	Min. Env. EPA	No longer required	This PCR (Section 3.3)

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:M5:1 Compliance Auditing	<p><u>Action</u> Prepare an audit program and submit compliance reports to the DoE</p> <p><u>How</u> Compliance reports to address:</p> <ol style="list-style-type: none"> 1 The status of implementation of the proposal as defined in Schedule 1 of Statement 657. 2 Evidence of compliance with the conditions and commitments. 3 The performance of the environmental management plans and programs. Note: Under sections 48(1) and 47(2) of the <i>Environmental Protection Act 1986</i>, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement. <p><u>Objective</u> To provide evidence that the proposal is being implemented as approved, and the relevant conditions and commitments are being met.</p> <p><u>Evidence</u> Annual CRs</p>	Overall	DEC	Satisfactory to date	This PCR (Section 3.4)
657:M5:2 Performance Review	<p><u>Action</u> Submit a Performance Review report every five years after the start of the operations phase.</p> <p><u>How</u> The Performance Review report shall address the following:</p> <ol style="list-style-type: none"> 1 The major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets. 2 The level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable. 3 Significant improvements gained in environmental management, including the use of external peer reviews. 	Operation	Min. Env. EPA	Not required at this stage	This PCR (Section 3.5)

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
	<p>4 Stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed.</p> <p>5 The proposed environmental targets over the next five years, including improvements in technology and management processes.</p> <p><u>Objective</u> To document the outcomes, beneficial or otherwise; and, to review the success of goals, objectives and targets; and, to evaluate the environmental performance over five years.</p> <p><u>Evidence</u> Performance Review Report every five years.</p>				
657:M6.1 Drainage Management	<p><u>Action</u> Prepare a Drainage Management Plan</p> <p><u>How</u> Address the following:</p> <ol style="list-style-type: none"> 1 Monitoring of drainage to detect, report on and manage and drainage impacts on the Wildlife Sanctuary for the Western Swamp Tortoise at Ellen Brook Nature Reserve. 2 Remediation of any unacceptable drainage impacts on the Wildlife Sanctuary cause by this proposal. 3 Detention of all drainage waters on-site for the first three years of operation, so that they do not enter the Wildlife Sanctuary at the Ellen Brook Nature Reserve nor create an unacceptable impact elsewhere. 4 Diversion of all drainage waters from the eastern side of the Great Northern Highway to prevent their entering the Wildlife Sanctuary area at Ellen Brook Nature Reserve within two years following the date of the statement published on 29 May 1992, and in doing so, ensuring that this action does not cause an unacceptable impact elsewhere. <p><u>Objective</u> To protect the fenced-off habitat of the western swamp tortoise at Ellen Brook Nature Reserve from external surface water drainage impacts of the proposal.</p> <p><u>Evidence</u> Drainage Management Plan.</p>	Pre-mining	Min. Env. CALM, MRWA, SRT, City of Swan	22/6/06 Cleared	-

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:M6.2:1 Drainage Management	<u>Action</u> Implement the Drainage Management Plan. <u>How</u> In accordance with the approved Drainage Management Plan (see 6:1)	Operation For the duration of the project.	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.6)
657:M6.2:2 Drainage Management	<u>Action</u> Make the Drainage Management Plan publicly available <u>How</u> Carry out the following: 1 Request DoE to advertise the availability in the EPA weekly advertisement in the Monday edition of "The West Australian" newspaper. 2 Provide free copies of the documentation when approved for release to organisations nominated by EPA, such as the DoE library (2 copies), local government authority (2 copies), J S Batty Library (2 copies) and local public libraries (2 copies each). Also make a copy available on a website if the proponent has one.	Operation When the plan has been approved for release.	Min. Env. EPA	Cleared	This PCR (Section 3.7)
657:M7.1 Wildlife Sanctuary Buffer	<u>Action</u> The proponent shall not quarry within 100 metres of the boundaries of the Wildlife Sanctuary at Ellen Brook Nature Reserve, until further investigations demonstrate that adverse effects upon tortoise habitat will not occur.	Operation	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.8)
657:M8.1:1 Environmental Management Program	<u>Action</u> Prepare Environmental Management Program. <u>How</u> Plans should include 1 A staged quarrying strategy. 2 Drainage management (see condition 6). 3 Groundwater management and protection. 4 Progressive rehabilitation of the site. 5 Procedures to minimise noise, dust and visual impacts associated with the quarrying and transport operations. 6 Public safety and mosquito breeding. 7 Periodic reporting of monitoring results. 8 Consequential changes to project management from unacceptable impacts. <u>Objective</u> To enable detection, reporting and management of any environmental impacts. <u>Evidence</u> Environmental Management Program	Pre-mining Prior to quarrying activities.	Min. Env. EPA	22/6/06 Cleared	-

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:M8.1:2 Environmental Management Program	<p><u>Action</u> Make publicly available the Environmental Management Program.</p> <p><u>How</u> Carry out the following:</p> <ol style="list-style-type: none"> 1. Request DoE to advertise the availability in the EPA weekly advertisement in the Monday edition of "The West Australian" newspaper. 2. Provide free copies of the documentation when approved for release to organisations nominated by EPA, such as the DoE library (2 copies), local government authority (2 copies), J S Battye Library (2 copies) and local public libraries (2 copies each). Also, make a copy available on a website if the proponent has one. 	Operation	Min. Env. EPA	Cleared	This PCR (Section 3.9)
657:M8.1:3 Environmental Management Program	<p><u>Action</u> Implement the Environmental Management Program.</p> <p><u>How</u> In accordance with the approved EMP (see M8:1.1)</p>	Operation	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.10) Revised Environmental Management Plan (RPS 2006a)
657:M9:1 Regional Development, Drainage and Rehabilitation	<p><u>Action</u> Contribute to the preparation of a regional development, drainage and rehabilitation strategy for the Upper Swan locality in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan and other current and known proposed clay producers in the area, such that the strategy can be prepared within two years following the date of the statement published on 29 May 1992.</p>	Overall Within two years of the date of statement published on 29 May 1992.	Min. Env. EPA	22/6/06 Cleared	-
657:M10:1 Preliminary Decommissioning Plan	<p><u>Action</u> Prepare a Preliminary Decommissioning/Closure Plan, which provides the framework to ensure that the site is left in an environmentally acceptable condition.</p> <p><u>How</u> Addressing:</p> <ol style="list-style-type: none"> 1 Rationale for the siting and design of plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure. 	Overall Within two years of the date of the statement published on 29 May 1992.	Min. Env. EPA	Cleared/ Completed	Preliminary Decommissioning Plan (RPS 2006b) This PCR (Section 3.11)

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
	<p>2 Long-term management of ground and surface water systems.</p> <p>3 A conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders.</p> <p>4 A conceptual plan for a care and maintenance phase.</p> <p>5 Management of noxious materials to avoid the creation of contaminated areas.</p> <p><u>Objective</u> To provide a framework to ensure that the site is left in an environmentally acceptable condition.</p> <p><u>Evidence</u> Preliminary Decommissioning Plan</p>				
657:M10:2 Final Decommissioning Plan	<p><u>Action</u> Prepare a Final Decommissioning/Closure Plan designed to ensure that the site is left in an environmentally acceptable condition.</p> <p><u>How</u> Address:</p> <p>1 Removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders.</p> <p>2 Long-term management of ground and surface water systems.</p> <p>3 Rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s).</p> <p>4 Identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.</p> <p><u>Objective</u> To ensure that the site is left in an environmentally acceptable condition.</p> <p><u>Evidence</u> Final Decommissioning Plan</p>	Operation At least 12 months prior to the anticipated date of decommissioning.	Min. Env. EPA	Not required at this stage	This PCR (Section 3.12)

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:M10:3 Final Decommissioning Plan	<p><u>Action</u> Implement the Final Decommissioning/Closure Plan.</p> <p><u>How</u> In accordance with the approved Final Decommissioning/Closure Plan (see M10:2).</p> <p><u>Objective</u> To ensure that the site is left in an environmentally acceptable condition.</p> <p><u>Evidence</u> CR</p>	Closure Until such time as the Min Env determines that the proponent's decommissioning/closure responsibilities have been fulfilled.	EPA	Not required at this stage	This PCR (Section 3.12)
657:M10:4 Final Decommissioning/Closure Plan	<p><u>Action</u> Make the Final Decommissioning/Closure Plan required by Condition 10-2 publicly available.</p> <p><u>How</u> Carry out the following:</p> <ol style="list-style-type: none"> 1 Request DoE to advertise the availability in the EPA weekly advertisement in the Monday edition of "The West Australian" newspaper. 2 Provide free copies of the documentation when approved for release to organisations nominated by EPA, such as the DoE library (2 copies), local government authority (2 copies), J S Batty Library (2 copies) and local public libraries (2 copies each). Also, make a copy available on a website if the proponent has one. <p><u>Evidence</u> Contact Audit section when plan is ready for advertising.</p>	Operation When the plan has been approved for release.	Min. Env. EPA	Not required at this stage	This PCR (Section 3.12)
657:P1 Long-term Strategic Planning	<p><u>Action</u> Consult with the planning authorities to facilitate derivation of a long-term strategic plan for the locality that recognises and accepts the interim priority land use of clay excavation.</p> <p><u>How</u> See condition 9.</p>	Overall	Min. Env. EPA	22/6/06 Cleared	-

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:P2 Inter-company Liaison Group	<u>Action</u> Address potential cumulative operational effects and overall rehabilitation goals. <u>How</u> Establish an inter-company liaison company mechanism to enable coordination.	Pre-mining As soon as possible and maintain for the duration of the project.	Min. Env. EPA	22/6/06 Cleared	-
657:P3 Management	<u>Action</u> Implement management techniques described in both Sections 5 and 6 of the CER. <u>How</u> So as to ensure that adverse effects are not experienced.	Operation	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.13)
657:P4 Monitoring	<u>Action</u> Monitor critical parameters. <u>How</u> Implement routine surveillance of the quarries to assess the critical parameters identified in the monitoring program.	Overall At regular intervals throughout the year.	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.14)
657:P5 Rehabilitation	<u>Action</u> Rehabilitate previously worked areas. <u>How</u> In accordance with the rehabilitation objectives developed in consultation with CALM, Department for Planning and Infrastructure, City of Swan and the land owner.	Overall As soon as is practicable.	EPA CALM, DPI, City of Swan and land owner.	Satisfactory to date	This PCR (Section 3.15)
657:P6 Turbid Water	<u>Action</u> Contain any turbid water within excavations and immediate surroundings. <u>Objective</u> Turbid water to not flow into tortoise habitat.	Operation	EPA	Satisfactory to date	This PCR (Section 3.16)
657:P7: 1 Environmental Management Program	<u>Action</u> Prepare an Environmental Management Program. <u>How</u> See condition 8.	Overall	Min. Env. EPA	22/6/06 No longer relevant (superseded by Condition M8:1.1) – Audit Branch	-

Audit Code Subject	What Action Must be Taken How Action Must be Taken and/or Objective of Action Objective Evidence that Action has Been Taken	Project Phase When Action to be Taken Where it is to be Taken	To Requirements of On Advice from	Status/ Requested Status	Verification (Where Required)
657:P7:2 Environmental Management Program	<u>Action</u> Implement the Environmental Management Program. <u>How</u> See condition 8.	Overall	Min. Env. EPA	22/6/06 No longer relevant (superseded by Condition M8:1.3) – Audit Branch	-
657:P8 Tortoise Habitat	<u>Action</u> Protect tortoise habitat. <u>How</u> Stage and monitor the excavation to verify that no adverse hydrological effects are experienced within the tortoise habitat.	Operation Throughout the excavation.	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.17)
657:P9 Water Table	<u>Action</u> Protect the water table during excavation. <u>How</u> Do not excavate below the permanent water table. if excavation reaches the water table, the area is to be back filled to maintain at least 1 metre of cover	Operation Throughout the excavation process.	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.18)
657:P10 Archaeological Survey	<u>Action</u> Undertake archaeological survey. <u>How</u> In areas currently undisturbed by clay excavation within the project area (see Figure 2 of Statement 657)	Operation Prior to clay excavation in identified areas.	Min. Env. EPA	Cleared	Archaeological Survey Report (Fisher Research 2005) This PCR (Section 3.19)
657:P11 Aboriginal Cultural Deposits	<u>Action</u> Protect Aboriginal cultural deposits. <u>How</u> In the event that Aboriginal cultural deposits are discovered during the archaeological survey referred to in commitment 10 or uncovered as a result of clay excavation or any other activities, work in the immediate area will cease immediately and the discovery will be reported to the Department of Indigenous Affairs	Operation	Min. Env. EPA	Satisfactory to date	This PCR (Section 3.20)

APPENDIX 2

Preliminary Decommissioning and Rehabilitation Plan, 2006

**MIDLAND BRICK CLAY EXCAVATION
LOTS 42 & 43 APPLE STREET, UPPER SWAN
PRELIMINARY DECOMMISSIONING PLAN**

Prepared for:

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Report No: L99195:2

Rev 0, September 2006

**MIDLAND BRICK CLAY EXCAVATION
LOTS 42 & 43 APPLE STREET, UPPER SWAN
PRELIMINARY DECOMMISSIONING PLAN**

Document Status

Version	Purpose of Document	Prepared By	Reviewer	Review Date
Draft A	Draft to Client	R.Epworth	K.Bennetts	04/09/2006
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Date

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TABLE OF CONTENTS

	Page No.
1.0 INTRODUCTION	1
2.0 MANAGEMENT OBJECTIVES	2
3.0 EXCAVATION ACTIVITIES AND DRAINAGE MANAGEMENT	3
4.0 DECOMMISSIONING	4
4.1 Site Clean-Up	4
4.2 Decommissioning of On-Site Drainage Works	4
5.0 COMPLETION AND REHABILITATION	5
5.1 Topsoil Harvesting and Storage	5
5.2 Landform and Lake Construction	5
5.3 Rehabilitation	6
5.3.1 Revegetation	6
6.0 COMPLETION CRITERIA	8
7.0 REFERENCES	9

LIST OF TABLES
(Contained within report text)

	Page No.
Table 1: Suggested Species for Revegetation	7

LIST OF FIGURES
(Compiled at rear of report)

Figure 1: Site Location	
Figure 2: Aerial Photograph showing site layout – 1999	
Figure 3: Preliminary Rehabilitation Concept	

1.0 INTRODUCTION

Midland Brick Pty Ltd (Midland Brick) commenced excavation from Lots 42 and 43 Apple Street, Upper Swan (Figure 1) (previously Lots 21 & 22 and Lots 40 & 41) in March 2002, following approval granted by the Minister for the Environment. The Ministerial approval currently applicable, Statement 657 (previously Statement 265), is subject to a range of environmental conditions, the majority of which have now been satisfied. However, Condition M10.1 requires the preparation and implementation of a Preliminary Decommissioning and Rehabilitation Plan and remains outstanding.

Condition M10.1 of Ministerial Statement 657 states:

“Prepare a Preliminary Decommissioning Plan for the additional areas of clay extraction.”

Addressing:

- 1) Rationale for the siting and design of plant and infrastructure as relevant to environmental protection, conceptual plans for the removal or, if appropriate, retention of plant and infrastructure;
- 2) Long-term management of ground and surface water systems;
- 3) A conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders;
- 4) A conceptual plan for a care and maintenance phase; and
- 5) Management of noxious materials to avoid the creation of contaminated areas.

This document describes the decommissioning process and rehabilitation activities that will be implemented.

2.0 MANAGEMENT OBJECTIVES

The primary objective of rehabilitation of the site has been to provide a landform that is aesthetically acceptable, functional, and capable of supporting a viable end use to the satisfaction of the land owners. The final land use planned is a series of relatively shallow (3m deep) “amenity lakes” within the excavated area.

This Preliminary Decommissioning and Rehabilitation Plan considers:

- Design of rehabilitated landforms including stability and resistance to erosion;
- Surface drainage patterns within the site prior to and following excavation;
- Appropriate use of vegetation in rehabilitation works;
- Suitability of surface conditions for new land use(s); and
- Public safety issues.

3.0 EXCAVATION ACTIVITIES AND DRAINAGE MANAGEMENT

Prior to excavation commencing at the site, topsoil from part of Cell 1 was windrowed into a 1.5m tree planted bund in readiness for the 2001/2002 summer campaign. Excavation has continued within Cells 1 and 2, in accordance with the approved EMP staging plan. Figure 2 shows an annotated photograph of the site in 1999 detailing the site layout.

During the earthworks program (topsoil and overburden removal), approximately 0.5ha of the clay resource is exposed at one time to reduce the potential for disturbance to local residents. Only a relatively small quantity of clay (approximately 50,000 tonnes) is excavated during the single campaign each year. Excavation occurs to a maximum depth of approximately 7m below ground surface which is above the regional water table.

Trucks are loaded directly from the pit with an excavator working on a 3m face, with no clay stockpiling on site. The clay excavation and cartage program generally runs for 4 to 6 weeks between November and May each year, depending on the tonnage removed.

No infrastructure is located at the site. Mobile machinery is brought to the site for each campaign but removed at the end of the excavation period. No fuel or other noxious materials are stored at the site. Vehicles are refuelled via a mobile refuelling truck.

Prior to commencement of excavation, drainage from the site and the locality entered the Ellen Brook Nature Reserve (EBNR). All drainage waters have since been diverted from entering the EBNR in accordance with Ministerial Statement 657. All turbid waters generated during excavation have been contained onsite through the construction of excavation pits as stormwater collection basins.

4.0 DECOMMISSIONING

The objective of decommissioning is to remove and dismantle any machinery, debris and structures used/generated during the life of the project such that the site could be rehabilitated to the proposed land-use. No fixed structures are located at the site as described in Section 3.0.

Decommissioning of the site will comprise the following:

4.1 Site Clean-Up

The site will be cleaned up through the removal of any debris. Debris will be disposed to landfill and products that can be re-used (former signage, hydrocarbon spill kits etc) will be collected and relocated on another site.

4.2 Decommissioning of On-Site Drainage Works

The bunds created to contain turbid waters generated on-site will be removed once rehabilitation plantings have been established aside from locations along the site boundary where rehabilitation and screening planting has been established upon the bunds (see section 5.0 for further information on proposed rehabilitation). The EBNR drainage diversion will be maintained to ensure continued protection of the reserve in perpetuity.

The final configuration of the “amenity lakes” which will retain surface water flow from the site following rehabilitation works, will be determined in consultation with the land owner and the Shire of Swan. Figure 3 shows the anticipated final configuration of the lakes together with planting areas.

5.0 COMPLETION AND REHABILITATION

The objective of rehabilitation is to restore the site to a stable landform that is aesthetically acceptable and capable of supporting a viable end use to the satisfaction of the land owners. The land owners have requested a number of lakes be designed to rehabilitate the area.

During mining, excavation of the clay deposit is undertaken in annual campaigns which are proposed to result in creation of 4 pits, averaging a depth of 7m below the ground surface. These pits have been contoured to create the shallow basins requested by the landowners.

Rehabilitation of the site has included the stages described in the following sections.

5.1 Topsoil Harvesting and Storage

Prior to the excavation within each cell, the topsoil (200 to 300mm deep) is skimmed from the site and stored within bunds at the perimeter of the cell boundary. These bunds are vegetated to increase stability of the bund and to provide a visual screen of the excavation to residents and nearby road users.

5.2 Landform and Lake Construction

Excavations on the site are proposed to generate 4 pits averaging approximately 7m in depth below the ground surface. Overburden will be used to partially back fill each pit. The amenity lakes which will have an average depth of 3m will be created within the former pits. The base of the lakes will therefore remain well above the permanent water table. Separation of the lakes from the water table will prevent impacts to groundwater quality.

The walls of the lakes will be contoured at a slope of 1 in 50 to maximise stability and provide a safer environment, and lined with a thin layer of clay to prevent water seepage into the sandy strata below. Final lake designs will be agreed with the landowner and approved by the Shire of Swan.

The additional soil from removing bunds will be respread evenly over the site around the lakes in a manner compatible with the surrounding landscape.

5.3 Rehabilitation

The rehabilitation programme will begin after excavation ceases within each cell of the site to prevent the colonisation of disturbed ground by aggressive weed species.

To prepare the site for rehabilitation, the excavated areas will be backfilled with overburden material recovered from the site and topsoil replaced. The cells will be re-contoured to ensure establishment of gentle gradients to accommodate the plant species chosen for rehabilitation.

Particular attention will be given to ripping along the contour on the embankments of the dams. Ripping the soil surface assists plant establishment by:

- controlling water movement and soil erosion;
- reducing sub-soil compaction; and
- facilitating the infiltration of water and root penetration.

5.3.1 Revegetation

Seeding and planting of tree seedlings will be undertaken during autumn prior to winter rains. Local native species will be used exclusively in the rehabilitation programme and any lost seedlings will be replaced in the following winter.

Planting of vegetation around the edge of the lake will act as a buffer to the lake and will assist with nutrient uptake, preventing accumulation in the wetlands and/or lakes. Aquatic vegetation will also be used to reduce nutrient levels further as well as create a benthic community. Sedges such as *Baumea articulata* will be established given their affinity to clay soils and drought resistance and submergent species will also be introduced for habitat establishment within the lakes.

The following native species have been identified in the surrounding areas (Belton, 2000), and are suggested for revegetation given their suitability for the soil type and hydrological regime (Table 1).

Table 1: Suggested Species for Revegetation

Scientific Name	Common Name
Trees	
<i>Allocasuarina fraseriana</i>	Common Sheoak
<i>Eucalyptus accedens</i>	Powderbark Wando
<i>Eucalyptus calophylla</i>	Marri
<i>Eucalyptus rudis</i>	Flooded Gum
<i>Eucalyptus wandoo</i>	Wandoo
<i>Melaleuca raphiophylla</i>	Freshwater Paperbark
Scrubs	
<i>Acacia pulchella</i>	Prickly Moses
<i>Acacia saligna</i>	Golden Wreath Wattle
<i>Callistemon phoeniceus</i>	Lesser Bottlebrush
<i>Hakea trifurcate</i>	Two Leaf Hakea
<i>Hakea varia</i>	Variable Leaf Hakea
<i>Jacksonia furcellata</i>	Grey Stinkwood
<i>Jacksonia sternbergiana</i>	Green Stinkwood
<i>Viminaria juncea</i>	Swishbush
<i>Hardenbergia comptoniana</i>	Native Wisteria
<i>Hypocalymma robustum</i>	Swan River Myrtle
<i>Hypocalymma angustifolium</i>	White Myrtle
Aquatic Species	
<i>Baumea articulata</i>	Jointed Twig Rush
<i>Eleocharis acuta</i>	Spike Rush
<i>Juncus pallidus</i>	Pale Rush
<i>Marsilea drummondii (submergent)</i>	Nardoo
<i>Villarsia albiflora (submergent)</i>	Villarsia

Pasture species will be planted in areas between lakes to assist with surface stabilisation and prevent erosion and dust generation.

6.0 COMPLETION CRITERIA

A completion criterion for the successful decommissioning and rehabilitation of the site has been defined as when the site becomes stable (ie. no significant erosion evident and tree growth is maintained) and can be managed for its proposed land use.

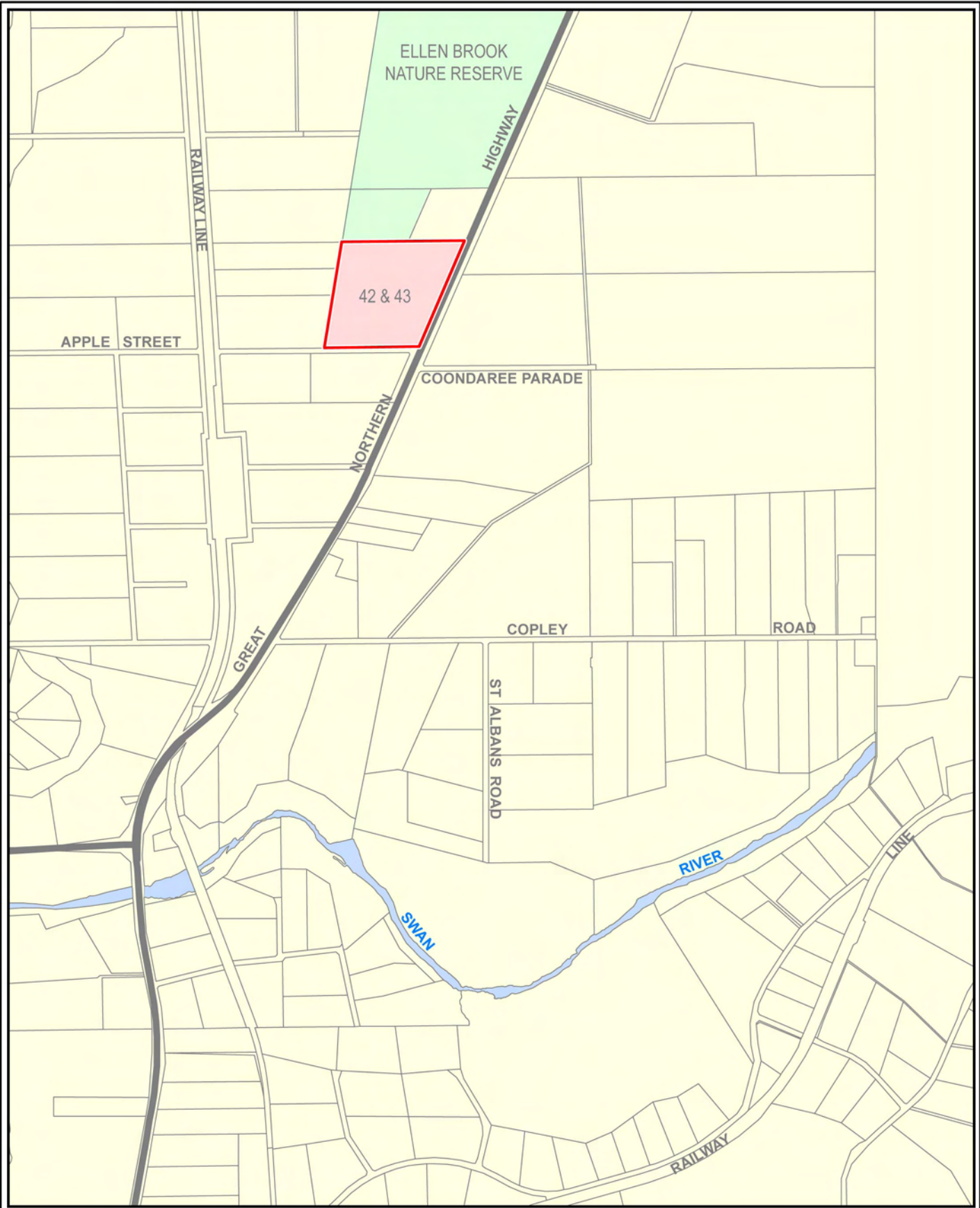
The site will be assessed at least twice per year (following summer and winter) to determine the progress of the rehabilitation and whether any maintenance work is required in terms of erosion and revegetation. As previously noted, native species which have not survived will be replaced by the following winter.

7.0 REFERENCES


Belton R (2000). Landscape and Rehabilitation Plan, Lot 10 Great Eastern Highway, Upper Swan. Report produced for Metro Brick.

Minister for the Environment (1992). Statement Ministerial Statement 657. (Pursuant to the Provisions of the *Environmental Protection Act, 1986*) - Excavation, Lots 21 & 22 Apple Street, Upper Swan (Assessment 1434, Statement 657), Midland Brick Company Pty Ltd. Minister for the Environment, Perth WA.

FIGURES



LEGEND

 Lots 42 & 43 Apple Street

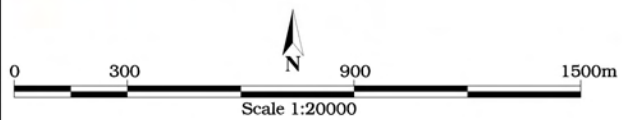
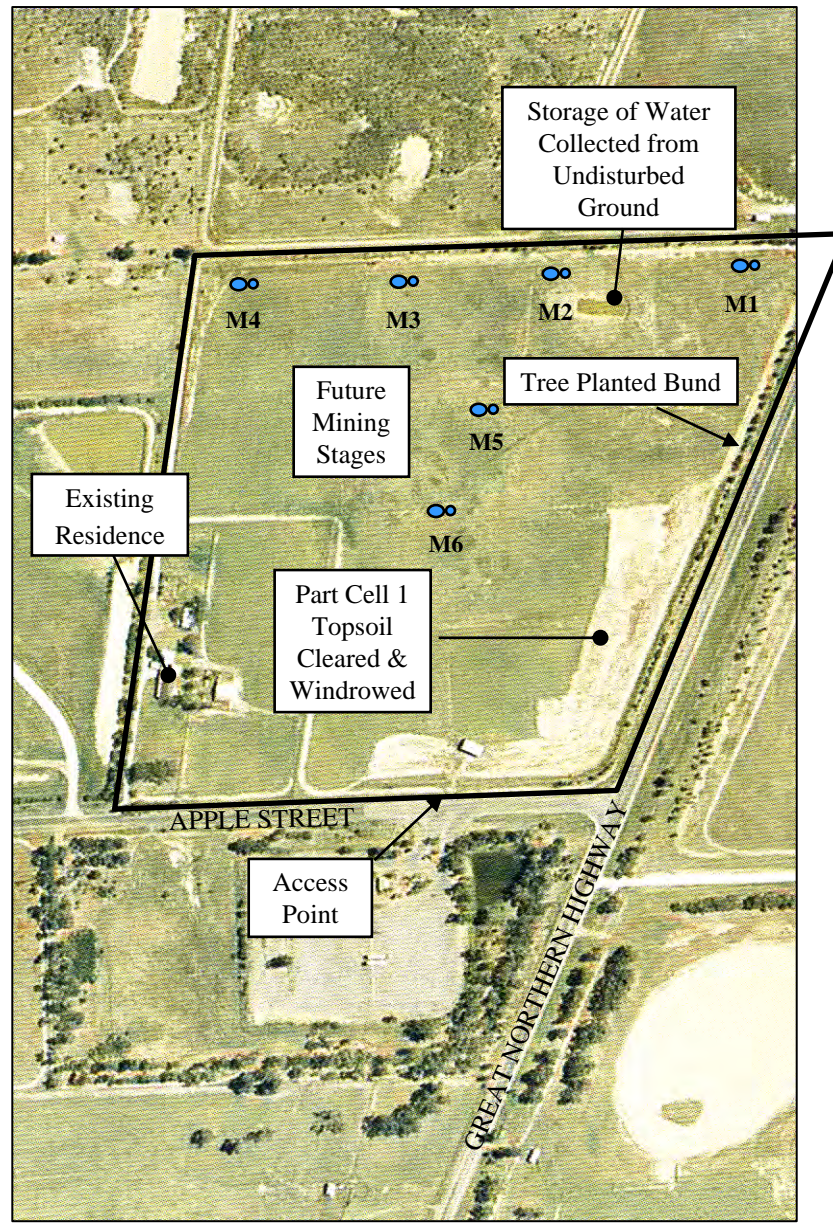



Figure 1
Site Location

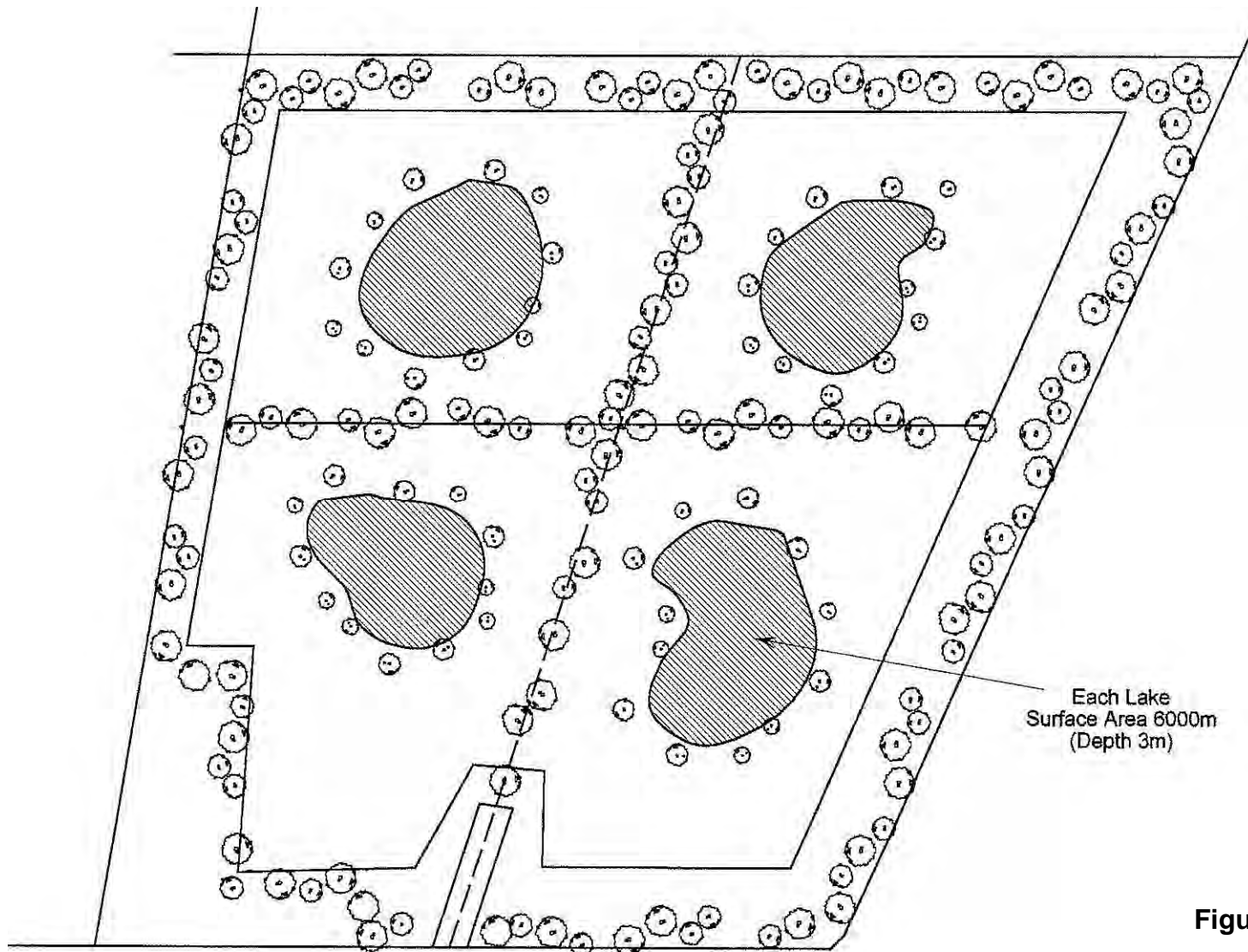



 Scale 1: 5000
 (approx.)

 Paired Monitor Bore
 (approx. location)

Date of Photography: 1999

Figure 2
Aerial Photograph showing
Site Layout



General planting areas only

Scale 1: 3000

Figure 3

**Preliminary Rehabilitation
Concept**

APPENDIX 3

**Lot 42 and 43 Apple Street
EMP, 2006**

**ENVIRONMENTAL MANAGEMENT PROGRAM
CLAY EXCAVATION
LOTS 42 & 43 APPLE STREET, UPPER SWAN**

(Ministerial Statement 657)

Prepared for:

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Report No: L99195
Rev 0, October 2006

**ENVIRONMENTAL MANAGEMENT PROGRAM
CLAY EXCAVATION
LOTS 42 & 43 APPLE STREET, UPPER SWAN**

Document Status

Version	Purpose of Document	Prepared By	Reviewer	Review Date
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Rev 0	Report to DEC	K. Bennetts	A. Donegan	18/10/06

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Date

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TABLE OF CONTENTS

	Page No.
1.0 INTRODUCTION	1
2.0 OVERALL OBJECTIVES AND CORPORATE ENVIRONMENTAL STATEMENT	3
2.1 Objectives	3
2.2 Corporate Environmental Statement	3
3.0 EXCAVATION PLAN	5
3.1 Objectives	5
3.2 Buffer Zone	5
3.3 Quarrying Strategy	5
3.3.1 Basis	5
3.3.2 The Clay Resource	6
3.3.3 Timing	6
3.3.4 Excavation Plan	7
4.0 DRAINAGE MANAGEMENT PLAN	9
4.1 Objectives	9
4.2 Run-off Management	9
4.2.1 Basis	9
4.2.2 Containment	9
4.3 Monitoring and Remedial Action	11
4.3.1 Monitoring	11
4.3.2 Remedial Action	11
4.4 Reporting	11
5.0 GROUNDWATER PROTECTION PLAN	12
5.1 Objectives	12
5.2 Groundwater Level Monitoring	12
5.3 Groundwater Protection and Pollution Control	13
5.4 Reporting	14
6.0 MANAGEMENT OF POTENTIAL SOCIAL IMPACTS	15
6.1 Objective	15

6.2	Noise and Dust	15
6.2.1	Noise and Dust Controls	15
6.2.2	Complaints Procedure	16
6.2.3	Inter-Company Liaison	16
6.3	Community Health and Safety	16
7.0	REHABILITATION	17
7.1	Objective	17
7.2	Rehabilitation Program	17
8.0	REFERENCES	18

LIST OF TABLES
(Contained within report text)

	Page No.
Table 1: Clay Resource Data	6

LIST OF FIGURES
(Compiled at rear of report)

Figure 1: Site Location	
Figure 2: Excavation Plan and Location of Monitor Bores	
Figure 3: Rehabilitation Concept Plan	

LIST OF APPENDICES

Appendix A: Ministerial Statement 265	
Appendix B: Ministerial Statement 657	

1.0 INTRODUCTION

The potential environmental impacts of Midland Brick Company Pty Ltd's (Midland Brick) proposal to excavate clay from Lots 42 and 43 (formerly Lots 21 and 22; Figure 1) Apple Street, Upper Swan was assessed by the Environmental Protection Authority (EPA) as a Consultative Environmental Review (CER). The boundaries of Lots 21 and 22 were reconfigured as shown in the title document and renumbered Lots 40 and 41 in 1981. All lot configurations comprise the same land component totalling approximately 16.6ha. Lot boundaries were again reconfigured in 2003 with creation of Lots 42 and 43.

The CER was prepared as a joint document regarding this and other clay excavation proposals, due to the potential cumulative impact of these operations on the nearby habitat of the extremely rare and endangered Western Swamp (or Short-Necked) Tortoise (*Pseudemydura umbrina*).

Following assessment and public review of the CER, which included provision of additional information by the Company, the EPA concluded that the proposal is environmentally acceptable and that the environmental issues identified are manageable through both the commitments to environmental management made by Midland Brick (Appendix A), and provided the proponent prepares and implements an Environmental Management Program (see EPA Bulletin No. 610 (1992a), Assessment No. 121). The Environmental Management Program (EMP) was a condition of approval set by the Minister for the Environment (Appendix A), which was fulfilled by the preparation and acceptance of this document in 1998.

In 2003, a Section 46 Review was prepared for the project in order to extend the projects environmental approval duration. Following assessment of the document, the Minister for the Environment approved the review and issued a new Ministerial Statement (No. 657) with amended conditions (Appendix B). The condition requiring preparation of an EMP, including its status identified as cleared. Following a site audit conducted in May 2006 the Department of Environment and Conservation (DEC) requested the EMP be reviewed and updated if necessary in order to document any changes agreed since preparation of the original document.

Principal issues associated with the project and this EMP have previously been discussed in detail with the Department of Conservation and Land Management (CALM), Water and Rivers Commission, Swan River Trust, and the Department of Environmental

Protection, particularly at a meeting conducted in December 1997 and onsite in March 1998. The EMP has been amended to conform with the comments and requirements of the above authorities.

The quarry also operates under an Excavation Licence from the City of Swan. .

Clay excavation in this locality is only possible during the drier periods of the year, generally between the months of November and May.

2.0 OVERALL OBJECTIVES AND CORPORATE ENVIRONMENTAL STATEMENT

2.1 Objectives

The primary objective of the Environmental Management Program (EMP) is the protection of the habitat of the endangered Western Swamp Tortoise (*Pseudemydura umbrina*) at the Ellen Brook Nature Reserve (EBNR), and also in the western portion of Lot 14 purchased by CALM as an extension to the EBNR habitat.

To achieve this objective, the EMP addresses:

- Management of excavation procedures (Excavation Plan);
- Management of drainage waters (Drainage Management Plan); and
- Management and protection of groundwater resources (Groundwater Protection Plan).

Other objectives of the EMP relate to the management of local environmental and social impacts and include:

- Management of noise, dust and visual impacts;
- Management for community health and safety; and
- Rehabilitation of the site.

Subsequent sections of this EMP provide details for each of the elements listed above.

2.2 Corporate Environmental Statement

In addition to the objectives listed above, Midland Brick provides the following statements as a reflection of its corporate position in relation to this EMP and the protection of the EBNR and the Western Swamp Tortoise.

Midland Brick Company Pty Ltd is a wholly owned subsidiary of Boral Limited and is committed to managing its operations to ensure that the impact on the ecology and human population is negligible. This will be achieved by:

1. Complying with all commitments contained within the EMP as well as government bylaws, regulations and specific conditions which are applicable to the development approval.
2. Implementing an initial and on-going educational program to ensure that all employees involved with this resource project are aware of the specific environmental issues and the Company's commitment to protect this sensitive region.
3. Utilising Company-owned plant and employees to carry out all facets of the resource recovery and rehabilitation of the site.
4. The environmental monitoring and reporting program will be fully implemented and any perceived risk or circumstance which has the potential to affect the environment will be reported to the relevant authorities as soon as practicable.
5. Applying the Company's rehabilitation philosophy which supports the concept of sustainable development. Land areas that are affected by resource extraction will be rehabilitated to improve the aesthetics and/or land capability for the benefit of future generations.

Coordination and onsite supervision will be provided by the General Manager of Logistics, who is based in Middle Swan.

Ultimate responsibility for the implementation of all aspects of the EMP rests with the proponent, Midland Brick Company Pty Ltd.

3.0 EXCAVATION PLAN

3.1 Objectives

To implement a quarrying strategy which will minimise the total area of disturbance and allow effective water management, and minimisation of potential off-site noise, dust and visual impacts of the quarrying operation.

3.2 Buffer Zone

This clay excavation proposal is situated approximately 200 metres south of the existing EBNR, however CALM has acquired the western portion of Lot 14 to the north of Lots 42 and 43, which now forms part of the extensions to the Nature Reserve (Figure 1). The EPA has concluded that it is appropriate to impose a 100 metre no-quarrying buffer on this clay excavation proposal, to protect the tortoise habitat within the EBNR (Bulletin 610, Assessment No. 121). The 100m buffer, from the northern boundary of Lots 42 and 43, will remain in place until it is demonstrated through trial clay excavations and associated monitoring that the existing tortoise habitat, and extension to the habitat, are not at risk.

Buffer areas between the excavation area and road reserves (40m buffer) and other lot boundaries (20m, excluding the common boundary between Lots 42 and 43) will also be maintained.

3.3 Quarrying Strategy

3.3.1 Basis

During the environmental approvals phase of the project, Midland Brick committed not to develop the site until all clay had been removed from Lot 6 Lexia Avenue, located approximately 1km to the north-west. The objective in this regard was to lessen any traffic congestion and minimise the potential impact of multiple operational clay pits on the local Apple Street community. Lot 6 has now been rehabilitated, and drainage modified to divert water from the Lexia Avenue catchment into the farm dams created on the property.

Clay excavation from Lots 42 and 43 will continue to be progressively developed and rehabilitated in four distinct cells (Figure 2). The first cell was located in the south-east corner of Lot 43, to retain the maximum buffer to the EBNR during the trial mining and monitoring phase of the project.

The deposit occurs on land previously developed for pastoral use, and all trees have been removed from the site and replaced by pasture.

3.3.2 The Clay Resource

Table 1 summarises data collected from 45 drill holes completed in a grid pattern over the site.

Table 1: Clay Resource Data

Cell No.	Average Surface RL (m)	Average Overburden Depth (m)	Average Clay Depth (m)	Average Depth of Excavation (m, RL)
1	18.5	3.8	3.0	6.8, RL 11.7
2	19.0	4.1	2.8	6.9, RL 12.1
3	18.0	2.7	3.0	5.7, RL 12.3
4	18.5	3.1	3.5	6.6, RL 11.9

Table 1 demonstrates that the average thickness of the clay resource is 3.1m, and is covered by an average of 3.4m of overburden. The average depth of proposed excavation is 6.5m (and maximum of 6.9m, in Cell 2). The depth of proposed excavation in Cell 4, closest to the EBNR boundary, is 6.6m. A “deep” bore located midway along the eastern boundary of Lot 51 (adjacent to the site) has consistently recorded the depth to groundwater as between 7.13 and 7.73m below ground surface. Additional groundwater information has been collected following the installation and monthly monitoring of seven deep and shallow monitor bores (see Section 5.2 for details), and the implementation of the Groundwater Protection Plan (Section 5.0).

3.3.3 Timing

In the event that Midland Brick is successful in obtaining approval to extract all identified clay resource from within the property, up to 20m from the EBNR boundary, mining and rehabilitation are anticipated to be completed within 10 years of

commencement date (2002). Should the 100m buffer zone restriction remain, the project would be completed within 8 years, and a significant proportion of this resource will remain unmined. Where practicable, progressive rehabilitation will occur at the same time as clay extraction and it is anticipated that the site will be fully rehabilitated 2 years after the finalisation of extraction.

Clay will be extracted during dry weather between the months of October and May. Consumption predictions indicated that 90 loads of clay will be excavated and transported from the site on about 50 days per year during the excavation “season”, for the duration of the project.

It is proposed to operate the pit and road transport activity from 7:00am to 7:00pm from Monday to Friday, and from 6:00am to 1:30pm on Saturday. No activity will be undertaken on Sunday.

3.3.4 Excavation Plan

The staged excavation plan for the site comprises 4 discrete cells, a 100m initial buffer zone to the EBNR, and vehicle access road to Apple Street (Figure 2). As each cell is required for excavation, it will be isolated from the balance of the property by earth bunds to ensure drainage water is retained within the active extraction areas. The balance of the property will remain for pastoral use until required for mining.

The initial bund around Cell 1 was constructed with a grader by skimming topsoil into a 1.5m high embankment around its perimeter. All topsoil, which varies in depth between 60-150mm within the cell, was accommodated within the bund therefore eliminating the need for stockpiling at the site.

A second embankment 3m high was constructed with overburden to abut the topsoil bund on the eastern and southern sides of the cell (Figure 2). A hydraulic excavator was used to strip the overburden from above the clay formation and place it directly into the bund. A thin cover of topsoil was spread over the surface of the bund to promote grass growth, thereby reducing the potential for water erosion of the bund from rainfall, and also enhancing the visual appearance of the bund.

Trees and shrubs were planted on the embankments which face roadways, i.e. the eastern and southern faces.

The bunding on the sides of each cell is multi-functional, serving the following purposes:

- To significantly reduce any potential for noise and dust export from the site;
- To provide a visual screen of the excavation to residents and nearby road users; and
- To catch and divert all water from operational areas into the dams formed by excavation, thereby avoiding discharge of turbid water to drainage lines outside of the site.

The northern boundary of the site has an existing bund approximately 1 metre high, formed as part of the surface drainage plan for the area.

Following the above preparatory works, the clay formation is removed from the pre-stripped area by hydraulic excavator and loaded directly into trucks for transport to the brick manufacturing plant. A strip mining method is employed to directly deposit overburden into the void created by clay excavation, thus removing the need to build stockpiles on the property. The remaining cells will be developed in sequence using the same mining methods, and extending the bund walls and vegetation cover.

The total area to be disturbed is approximately 11.0ha. As the resource in each cell is exhausted the area will be rehabilitated, as detailed in Section 7.0.

4.0 DRAINAGE MANAGEMENT PLAN

4.1 Objectives

To ensure the retention of turbid water from areas disturbed during excavation, within the exhausted clay pits during each excavation stage, and to monitor drainage water quality which will enable the success of drainage management to be confirmed, or remedial action to be instigated where necessary.

4.2 Run-off Management

4.2.1 Basis

In accordance with Conditions for the project set by the Minister for the Environment, all drainage waters from the south-western side of the Great Northern Highway have been diverted from entering any of the fenced tortoise habitat enclosure at the EBNR. Consequently, the surface water catchment of the reserve is now independent and not subject to influence from any surrounding land use. This drainage modification was achieved in conjunction with other clay excavators in the area.

In addition to this measure, all turbid drainage waters generated from the operational areas will be detained onsite for the life of the mine.

4.2.2 Containment

The following management strategies are implemented to ensure the onsite containment of turbid waters from the operational area:

- The perimeter of the site is bunded to contain any sheet flow within the site boundaries, with the exception of a single pipe in the north-east corner (Figure 2).
- All diffuse stormwater is detained in a settling/compensation basin at the north-east corner prior to discharge into the highway reserve drain (if necessary), to minimise the potential for silt transport. The highway reserve drain is independent of the EBNR.

- The pit created during each excavation cell (Stage 1, 2, 3 and 4) will be utilised for containment of turbid run-off within the bund system.
- Run-off from disturbed ground adjacent to the pit will be diverted into the pit by strategic formation of the surrounding bunds (and spoon-drains if necessary).
- To avoid the necessity for dewatering of drainage which collects in the pit, prior to excavation during subsequent campaigns, the pits created in each cell will be left as a discrete cell until rehabilitated.
- In the event that dewatering of collected drainage is necessary, it will be pumped at low volumes for lateral dispersion onto undisturbed ground for disposal via evaporation rather than discharge off-site.

Based on exploratory drilling data and topographical information, it is estimated that the clay deposit extends to an average depth of 6.5m below the ground surface. Groundwater has previously been recorded at between 7.13 and 7.7m, therefore no dewatering of groundwater will be necessary. However, one shallow bore in the south-east corner of the site has indicated that a small, localised 'pocket' of perched groundwater may occur in this area (recorded at approximately 4m depth).

In the process of clay mining it is possible that a shallow zone of water-bearing sediments may be intersected, in which case water will drain into the excavation pit. However, experience with existing clay pits in the locality (for example Austral Bricks pit on the adjoining property to the west) strongly suggests that large cells of perched groundwater are very much an exception, a factor supported by monitor bore data presented in the CER. This factor is further discussed in Section 5.2.

Given that mining will only be carried out over the summer period, in the event that dewatering of water collected in a pit is necessary, Midland Brick will pump low volumes of water as lateral sheet flow within the site for disposal via evaporation as described above. No discharge to the surrounding drainage network will occur under any circumstances.

Loss of water from the pit will occur through evaporation over the summer months, and may additionally be used for dust suppression and tree watering. As each cell will be mined in discrete, self-contained and completed cells, it will not be necessary to dewater any pit at the commencement of each excavation season.

4.3 Monitoring and Remedial Action

4.3.1 Monitoring

The objective of monitoring was to ensure the success of turbid run-off containment during the initial years of operation. Monitoring of drainage continued after the drainage diversion was completed. The EPA has acknowledged that this is no longer required, and cleared the Condition in June 2000.

4.3.2 Remedial Action

Remedial action will be dependent on the nature and extent of the identified problem, and may include:

- repairs to perimeter bunds;
- diversion of additional run-off into the clay pit for containment;
- use of hay bales in areas of sheet run-off to reduce water velocities and filter sediment loads;
- hydro-mulching of disturbed ground to prevent water erosion; and
- enlargement of the settling/compensation basin.

It should be noted that as 'ground-disturbing' activity will only occur during the drier months of the year, and as most rainfall would be expected to occur when the operation is dormant, turbidity will not be as excessive as one would expect if machinery were operating or stock were on the site. Therefore, with the exception of the excavation area and internal access route, the remainder of drainage from the site is anticipated to be relatively "clean" water.

4.4 Reporting

If remedial action is considered necessary, the EPA will be advised at the time.

5.0 GROUNDWATER PROTECTION PLAN

5.1 Objectives

The primary objectives of the Groundwater Protection Plan is protect the EBNR from hydrological changes due to excavation, and to prevent pollution of the underlying groundwater systems (Guildford and Leederville aquifers) from agents such as fuel and oil spillages.

5.2 Groundwater Level Monitoring

Midland Brick has previously supplied evidence to the EPA that the EBNR is not hydrologically linked to the clay deposit on Lots 42 and 43. The EPA has concluded that excavation of clay on the site is most unlikely to interfere with the groundwater regime in the vicinity of the EBNR (EPA Bulletin No. 614, 1992b), although nonetheless, clay excavation from the site should commence with a trial mining phase.

Midland Brick originally monitored groundwater levels using four shallow (4m) monitor bores which were installed within the site in November 1989, and one deep bore already in existence on the property. Two bores outside the property boundary were also monitored, which were located on the western portion of the previous Lot 14, which is now part of the EBNR.

Measurements from the deep bore midway along the eastern boundary of the adjacent Lot 51 indicated that the deeper water table is located in excess of 7m below ground level. Shallower, perched groundwater occurs at depths generally between 2 and 4m below the surface in winter. Bores in the west of the site were often dry during winter, indicating no water within 4m of the surface.

Midland Brick wishes to maximise the recovery of this scarce clay resource, and eventually excavate within the 100m arbitrary buffer established for the EBNR as the final excavation stage for the project. The former Water and Rivers Commission (WRC) considered that the potential for sandy soil profiles within the proposed excavation area should be investigated, to ensure that no hydraulic connection exists between the site and the EBNR which may be intersected during the excavation process. In this regard,

original clay resource definition drilling logs (totalling 45 holes) and groundwater monitoring data for the project were supplied to the WRC, for examination.

Historical bore logs do not indicate the presence of sandy transmissive soils between the site and the EBNR. However, a further more rigorous drilling program has been undertaken on the northern boundary of the site through a collaborative effort by Midland Brick and the WRC to determine the extent of the transmissive soils, and to determine potential implications for excavation and the EBNR.

Prior to the commencement of site works six pairs of shallow (4m) and deep (10m) monitor bores were installed at 50m intervals between the trial excavation pit and the EBNR, and along the boundary of the EBNR within Lot 43, to assess the effects of excavation on any perched groundwater (Figure 2). Groundwater levels in the bores continue to be monitored on a monthly basis.

Potential groundwater levels in the shallow bores will be compared with water level variations in the tortoise swamp, as measured by CALM.

It is anticipated that these bores will serve a secondary function in determining if any lateral seepage is occurring from the excavated cells once they begin to fill with water from winter rains.

Future excavation stages at the site will be dependent on the performance of the excavation and groundwater monitoring during the trial and subsequent phases, which would be subject to audit by the EPA and Water and Rivers Commission (and subsequent advice to CALM).

5.3 Groundwater Protection and Pollution Control

The following measures will be implemented as part of the Groundwater Protection and Pollution Control strategy:

- Clay will not be excavated below the water table;
- The deeper the groundwater resources will be protected from potential hydrocarbon contamination;

-
- Only the excavation machinery (dozer and hydraulic excavator) will be refuelled onsite; the trucks and water-cart will be refuelled elsewhere;
 - Onsite refuelling will be conducted via a fuel truck which only visits the site for the duration of refuelling. The truck is fitted with vacuum extraction equipment which can recover wastes, if necessary, to be returned to Midland for disposal;
 - All refuelling will be conducted on the plastic lined depot, which is able to catch and contain spills from seeping into the soil.
 - No fuel or lubricants will be stored onsite;
 - Machinery will not be left onsite in the period between excavation campaigns; and
 - In the unlikely event that a substantial spillage occurs, the contaminated sediments will be excavated and removed from the site to an approved disposal location.

5.4 Reporting

The results of monitor bore investigations will be reported to the DEC within the Performance and Compliance Reports (PCR).

Any unusual seepage event observed within the excavation will be documented and reported.

In the event of a hydrocarbon spill, Midland Brick will act in accordance with the Department of Water's Water Quality Protection Note, Contaminant Spills – Emergency Response.

6.0 MANAGEMENT OF POTENTIAL SOCIAL IMPACTS

6.1 Objective

Midland Brick intend to operate the clay quarry:

- within noise and dust limits to ensure minimal inconvenience to the local community; and
- to ensure that community health and safety standards are maintained in terms of such factors as pit safety and mosquito breeding potential.

6.2 Noise and Dust

6.2.1 Noise and Dust Controls

The noise and dust controls which are practised by Midland Brick at other clay excavation sites will be applied to quarrying on Lots 42 and 43.

As previously noted, haulage truck operation will be restricted to between the hours of 7:00am and 7:00pm, Monday to Friday, and 6:00am to 1:30pm on Saturday. No activity will be undertaken on Sunday.

The access road from Apple Street has been sealed for a distance of 50m, and access tracks within the site are watered to reduce potential dust generation. Whilst the site is operational, the quarry manager or his delegate will conduct daily checks to ensure that the watering regime is rigidly adhered to and dust generation is minimised. When the site is not operational the checks will be random.

The 1.5m high site perimeter bund and 3m high bunds formed to both roadways significantly reduces the potential for the off-site export of both dust and noise emissions. These bunds ensure that, with the exception of haulage vehicles entering and exiting the site, machinery operates well below site levels. In addition, Midland Brick has planted a 10m wide corridor of trees along both the Apple Street and Great Northern Highway frontages to minimise visual impacts of the site.

6.2.2 Complaints Procedure

Onsite personnel will be advised to report all complaints immediately, including name and contact details of complainant and nature of complaint, to the Quarry Manager at Head Office. A complaints record will be maintained by the Company.

In the event that a complaint is received, the matter will be investigated and the complainant advised of the reasons for the perceived nuisance and the remedial action (if necessary) to prevent a re-occurrence of the problem.

Every endeavour will be undertaken to respond to complaints as soon as possible.

6.2.3 Inter-Company Liaison

The potential for cumulative impacts and appropriate response and management is addressed through inter-company liaison. The effectiveness of this liaison method has been demonstrated through the successful design and implementation of the surface water drainage diversion network.

6.3 Community Health and Safety

Midland Brick will liaise with the Health Surveyor from the Shire of Swan, prior to the commencement of rehabilitation works related to creation of amenity lakes, to obtain advice in relation to the mosquito breeding potential in the completed clay pits. Where possible, the configuration of the pits will be amended to avoid the creation of mosquito breeding habitat.

It is anticipated that other completed clay pits which hold permanent water could be inspected in the locality to assess mosquito breeding activity; special action may not be required at rehabilitated clay pits.

The fences and gates are maintained in functional condition to deter public access to the site. "Warning" signs have been placed at intervals on the perimeter fence and a sign detailing Midland Brick's contact number is located on the front entrance. Gates will be locked when the pit is not in operation.

7.0 REHABILITATION

7.1 Objective

To progressively restore the excavations, as far as practically possible, to a landform that is aesthetically pleasing and functional, and capable of supporting a viable end use to the satisfaction of the land owner.

7.2 Rehabilitation Program

Midland Brick is committed to undertake progressive restoration of each cell following clay excavation at this site, to the greatest extent possible (i.e. without compromising drainage management and containment objectives).

Drainage control, and to a certain extent re-contouring of the pit, will be instituted immediately on completion of each season's excavation campaign, prior to the onset of winter rains.

Following cessation of mining in each cell, the site will be rehabilitated. Firstly overburden will be used to partially back-fill each pit, as there will be insufficient material to totally fill the excavated areas.

Consequently, and in agreement with the land owner, the final land use planned is a series of relatively shallow graded (3m deep) "amenity lakes" within the excavated area. The final configuration of the lakes will be determined in consultation with the land owner and the City of Swan. Figure 3 shows the anticipated final configuration of the amenity lakes together with tree planting areas.

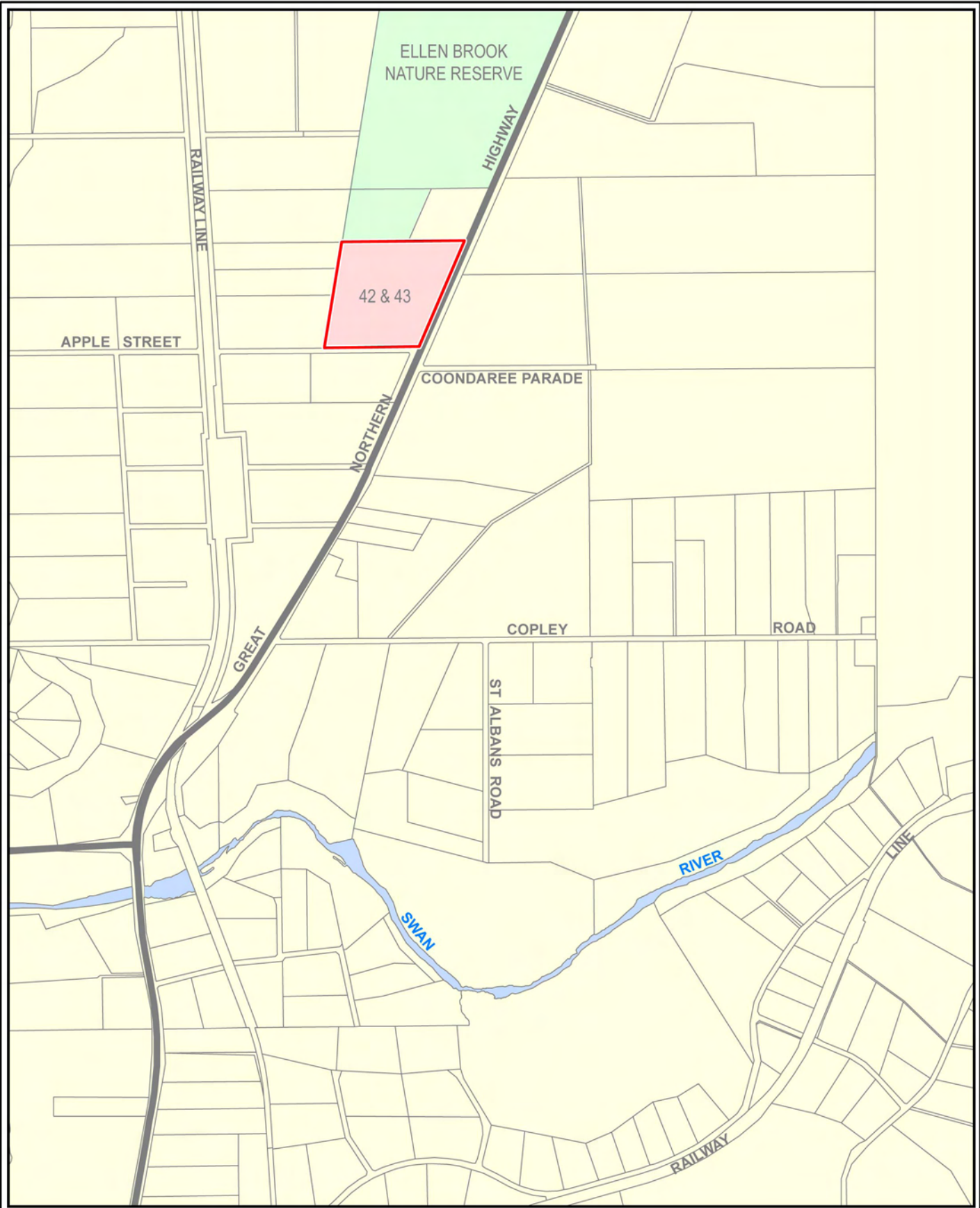
Topsoil skimmed from the site prior to clay excavation will be placed onto the lake's embankments. Additional trees will be planted around the perimeter of the lakes to provide both shade and a screen from adjoining properties and road reserves. Disturbed areas surrounding the lakes will be planted with mixed pasture species common to the area.

8.0 REFERENCES


Environmental Protection Authority (1992a). Proposed clay excavation, Lots 21 and 22 Apple Street, Upper Swan. Bulletin No. 610, Report and Recommendations of the Environmental Protection Authority, Perth, Western Australia.

Environmental Protection Authority (1992b). Proposed clay excavation, Lots 23 and 51 Apple Street, Upper Swan. Bulletin No. 614, Report and Recommendations of the Environmental Protection Authority, Perth, Western Australia.

FIGURES



LEGEND

 Lots 42 & 43 Apple Street

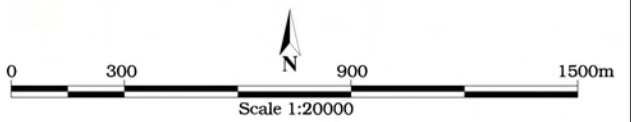


Figure 1

Site Location

199195 05 09 09 06

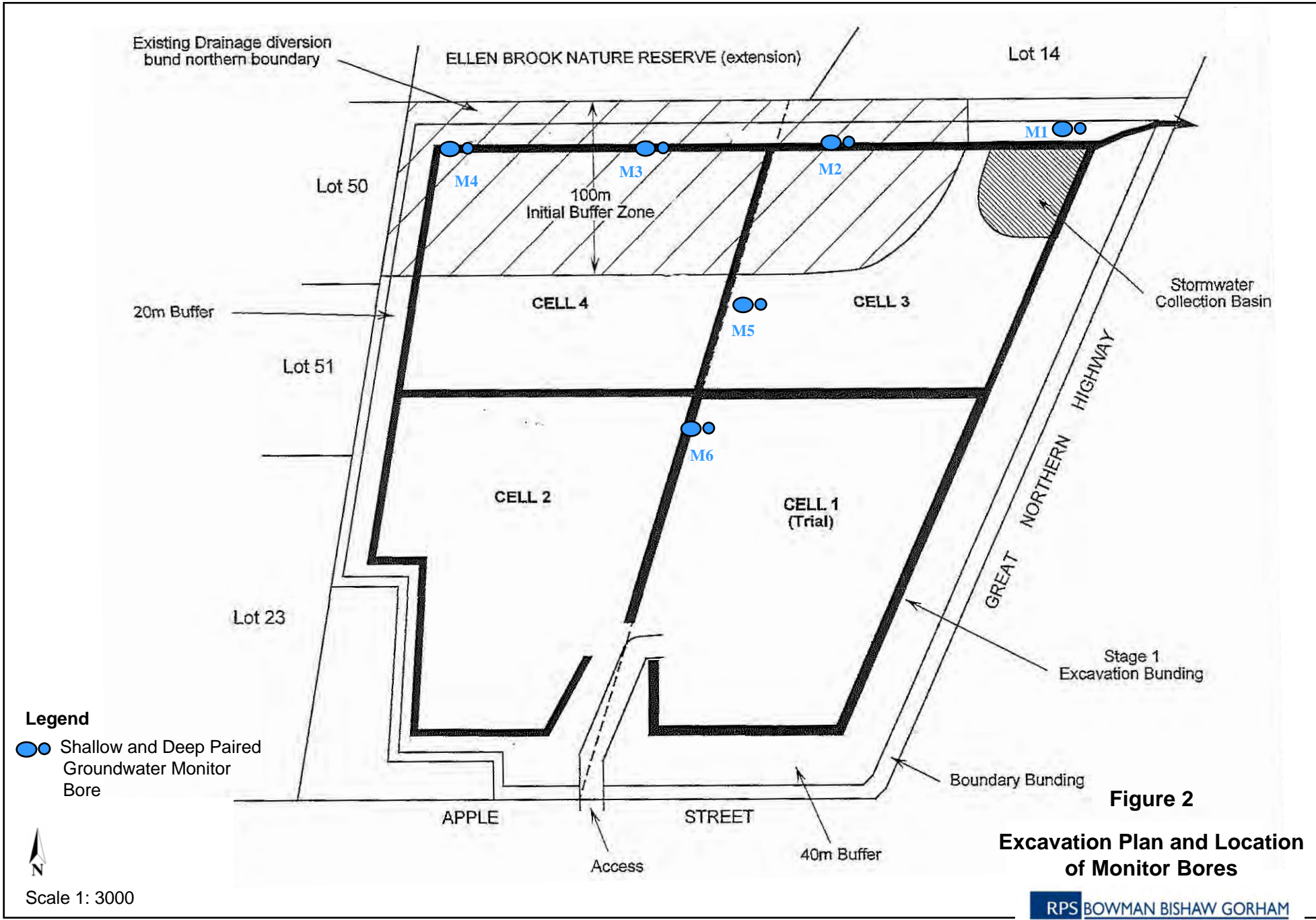
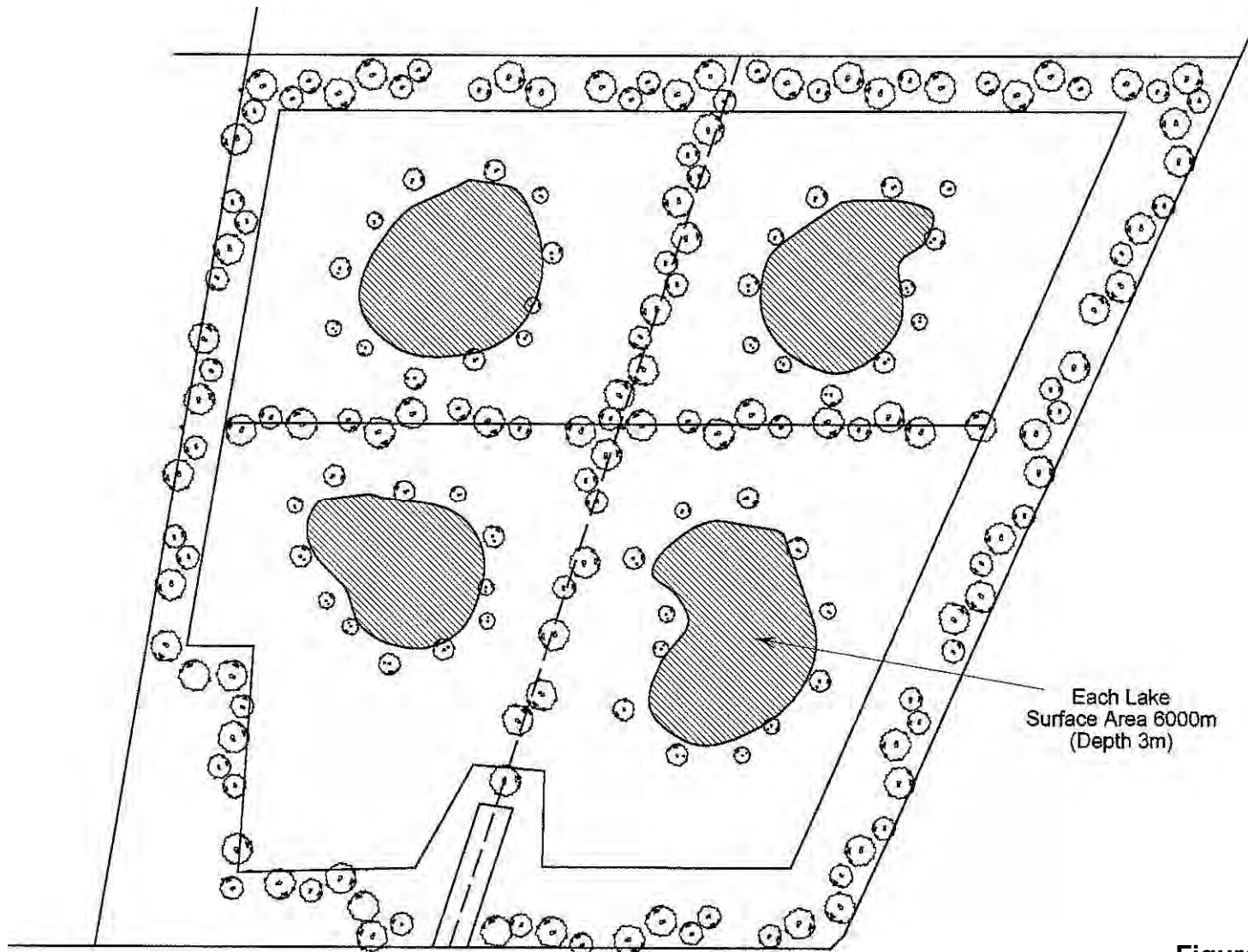


Figure 2

Excavation Plan and Location of Monitor Bores



Each Lake
Surface Area 6000m
(Depth 3m)



General planting areas only

Scale 1: 3000

Figure 3

Rehabilitation Concept Plan

APPENDIX A

Ministerial Statement 265



Ass # 121

Bull # 610

State # 265

WESTERN AUSTRALIA
MINISTER FOR THE ENVIRONMENT

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT
TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT
1986)**

CLAY EXCAVATION, LOTS 21 & 22 APPLE STREET, UPPER SWAN (121)

MIDLAND BRICK COMPANY PTY LTD

This proposal may be implemented subject to the following conditions:

1. Commitments

In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the Consultative Environmental Review and in response to issues raised following public submissions. These commitments have been consolidated and are included in Environmental Protection Authority Bulletin 610 as Appendix 1. (A copy of the commitments is attached).

2. Detailed Implementation

Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3. Duration of Approval

This approval is for a period of ten years from the date of this statement. Subsequent applications for approval shall be referred to the Environmental Protection Authority and will be reviewed in the light of the proponent's environmental performance at the site.

4. Drainage Management

A drainage management plan should be prepared to protect the fenced-off habitat of the Western Swamp Tortoise at Ellen Brook Nature Reserve and those areas identified in figure 1 of Environmental Protection Authority Bulletin 610 as "proposed additions to tortoise habitat" if acquired by the Department of Conservation and Land Management (hereafter referred to as the Wildlife Sanctuary) from external surface water drainage impacts affected by this proposal.

Published on

29 MAY 1992

- 4-1 Prior to the start of quarrying activities and in consultation with the appropriate government departments, including the Department of Conservation and Land Management, the Main Roads Department and the Swan River Trust, and the Shire of Swan, the proponent shall prepare a drainage management plan as part of the Environmental Management Programme required by condition 6, to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority. This plan shall enable the proponent to:
- (1) detain all drainage waters on site for the duration of the clay excavation operation, so that they do not enter the Wildlife Sanctuary nor create an unacceptable impact elsewhere;
 - (2) divert all drainage waters from the south-western side of the Great Northern Highway from entering the Wildlife Sanctuary within two years of the date of this statement, and in so doing, ensure that this action does not create an unacceptable impact elsewhere;
 - (3) monitor drainage to detect, report on, and manage any drainage impacts on the Wildlife Sanctuary; and
 - (4) remedy any unacceptable drainage impacts on the Wildlife Sanctuary caused by this proposal.
- 4-2 The proponent shall subsequently implement the drainage management plan required by condition 4-1.
- 4-3 The proponent shall periodically review the drainage management plan required by condition 4-1.

5. Wildlife Sanctuary Buffer

The proponent shall not quarry within 100 metres of the boundaries of the Wildlife Sanctuary at Ellen Brook Nature Reserve and any additions thereto (as identified in condition 4) until further investigations demonstrate, to the satisfaction of the Environmental Protection Authority on advice of the Department of Conservation and Land Management, that adverse effects will not occur to the tortoise habitat.

6. Environmental Management Programme

A comprehensive environmental management programme should be prepared to enable the proponent to detect, report on and manage any impacts on the environment, particularly on the Wildlife Sanctuary of the Western Swamp Tortoise at Ellen Brook Nature Reserve (as identified in condition 4).

- 6-1 Prior to the start of quarrying activities and following consultation with the appropriate government departments, the proponent shall prepare an Environmental Management Programme to the satisfaction of the Minister for the Environment on advice of the Environmental Protection Authority. Plans to be prepared as part of the Environmental Management Programme shall include, but not necessarily be limited to:
- (1) a staged quarrying strategy;
 - (2) drainage management (see condition 4);
 - (3) groundwater management and protection;
 - (4) progressive rehabilitation of the site;
 - (5) procedures to minimise noise, dust and visual impacts associated with the quarrying and transportation operations;

- (6) public safety and mosquito breeding;
- (7) periodic reporting of monitoring results; and
- (8) consequential changes to project management to remedy unacceptable environmental impacts.

6-2 The proponent shall subsequently implement the Environmental Management Programme.

6-3 The proponent shall periodically review the Environmental Management Programme.

7. Regional Development, Drainage and Rehabilitation

The proponent shall contribute to the preparation of a regional development, drainage and rehabilitation strategy for the Upper Swan locality in consultation with the appropriate government departments, including the Main Roads Department, the Department of Conservation and Land Management and the Department of Planning and Urban Development, the Shire of Swan, and other current and known proposed clay producers in the area, such that the plan can be prepared within two years of the date of this statement.

8. Decommissioning

The proponent is responsible for decommissioning and removal of the plant and installations and rehabilitation of the site and its environs.

8-1 At least six months prior to decommissioning, the proponent shall prepare a decommissioning and final rehabilitation plan.

8-2 The proponent shall implement the plan required by condition 8-1.

9. Proponent

No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

10. Time Limit on Approval

If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced. Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority).

11. Compliance Auditing

In order to ensure that agreed environmental conditions and commitments are met, an audit system is required.

11-1 The proponent shall prepare periodic "Compliance Reports" to help verify the environmental performance or otherwise of this project, in consultation with the Environmental Protection Authority.

Procedure

The conditions contained in this statement are to be complied with to the satisfaction of the Environmental Protection Authority except where they are required to be carried out to the satisfaction of either the Minister for the Environment or any other government agency.

Should the Environmental Protection Authority, other government agency and/or proponent be unable to resolve any dispute that occurs concerning these conditions and commitments, that dispute will be determined by the Minister for the Environment.

Bob Pearce, MLA
MINISTER FOR THE ENVIRONMENT

27 MAY 1992

Environmental Management Commitments

Clay Excavation, Lots 21 & 22 Apple Street, Upper Swan (121)

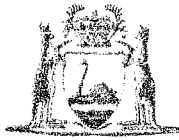
The proponent hereby commits itself to the overall environmental management and rehabilitation philosophy outlined in the Consultative Environmental Review and subsequent modifications as outlined in Appendices 2 and 3 of Bulletin 610 of the Environmental Protection Authority. In specific terms, this means the proponent will;

- (1) Consult with Planning Authorities to facilitate the derivation of a long term strategic plan for the locality which recognises and accepts the interim priority land use of clay extraction.
- (2) Establish an inter-company liaison mechanism to enable a co-ordinated approach between all three proponents with respect to addressing potential cumulative operational effects and overall rehabilitation goals.
- (3) Implement the management techniques described in both Sections 5 and 6 of the CER to ensure that adverse effects are not experienced in relation to:
 1. potential visual intrusion for residents at Upper Swan and through-traffic on Great Northern Highway;
 2. potential noise and dust disturbance of the residents at Upper Swan, particularly near the road junction of Apple Street and Almeria Parade;
 3. potential erosion of working areas and stockpiles and consequent silt transport to local drainage; and
 4. dewatering of accumulated rainfall and (perhaps) groundwater seepage from the working area of the pit which may be necessary to allow excavation to proceed.
- (4) Implement routine surveillance of the quarries at regular intervals throughout the year to assess the critical parameters identified in the monitoring programme.
- (5) Comply with excavation licence conditions negotiated with the Shire of Swan and in consultation with the Environmental Protection Authority.
- (6) Introduce sequential rehabilitation of previously worked area as soon as practicable in accordance with the rehabilitation objectives developed in consultation with Planning Authorities and the landowner (ie. in respect of leasehold arrangements).
- (7) During the mining activity, no silt-laden run-off water will enter the Ellen Brook Nature Reserve from Lots 21 and 22.
- (8) Undertake progressive restoration of the pits during the clay excavation at the site, to the greatest extent possible.

- (9) Prepare an Environmental Monitoring and Management Programme to the satisfaction of the Environmental Protection Authority prior to commencement of operations at the site.
- (10) Not excavate below the permanent water table and, in the unlikely event that the excavation did reach the water table, the area will be backfilled to maintain at least one metre of cover.

APPENDIX B

Ministerial Statement 657



MINISTER FOR THE ENVIRONMENT

Statement No.

000657

**STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

CLAY EXCAVATION
LOTS 40 & 41 APPLE STREET
(formerly Lots 21 and 22 Apple Street)
UPPER SWAN

Proposal: The operation of a clay excavation facility in Upper Swan, as documented in schedule 1 of this statement.

Proponent: Midland Brick Company Pty Ltd

Proponent Address: 102 Great Northern Highway, Middle Swan WA 6056

Assessment Number: 1434

Previous Assessment Number: 0121

Previous Statement Number: 265 (Published on 29 May 1992)

Report of the Environmental Protection Authority: Bulletin 1118

Previous Report of the Environmental Protection Authority: Bulletin 610

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is subject to the following conditions and procedures, which replace all previous conditions and procedures:

1 Implementation

1-1 The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

2 Proponent Commitments

2-1 The proponent shall implement the environmental management commitments documented in schedule 2 of this statement.

Published on

14 SEP 2004

3 Proponent Nomination and Contact Details

- 3-1 The proponent for the time being nominated by the Minister for the Environment under Section 38(6) or (7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.
- 3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.
- 3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

- 4-1 The proponent shall substantially commence the proposal within five years of the date of the statement published on 29 May 1992 or the approval granted in that statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

- 4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of the statement published on 29 May 1992 to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

- 1 the environmental factors of the proposal have not changed significantly;
- 2 new, significant, environmental issues have not arisen; and
- 3 all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Audit and Performance Review

- 5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

- 1 the status of implementation of the proposal as defined in schedule 1 of this statement;
- 2 evidence of compliance with the conditions and commitments; and
- 3 the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the *Environmental Protection Act 1986*, the Chief Executive Officer of the Department of Environment is empowered to audit the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

- 5-2 The proponent may excavate clay indefinitely, subject to the acceptability of performance review reports which shall be submitted every five years after the start of the operations phase, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The performance review reports shall address the following:

- 1 the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;
- 2 the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
- 3 significant improvements gained in environmental management, including the use of external peer reviews;
- 4 stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
- 5 the proposed environmental targets over the next five years, including improvements in technology and management processes.

6 Drainage Management

- 6-1 Prior to quarrying activities and in consultation with the Department of Conservation and Land Management, Main Roads WA, the Swan River Trust and the City of Swan, the proponent shall prepare a Drainage Management Plan to protect the fenced-off habitat of the Western Swamp Tortoise at Ellen Brook Nature Reserve from external surface water drainage impacts of the proposal, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This plan shall address the following:

- 1 monitoring of drainage to detect, report on, and manage any drainage impacts on the Wildlife Sanctuary for the Western Swamp Tortoise at Ellen Brook Nature Reserve;
 - 2 remediation of any unacceptable drainage impacts on the Wildlife Sanctuary caused by this proposal;
 - 3 detention of all drainage waters on-site in the first three years of operation, so that they do not enter the Wildlife Sanctuary at the Ellen Brook Nature Reserve nor create an unacceptable impact elsewhere; and
 - 4 diversion of all drainage waters from the south-western side of the Great Northern Highway to prevent their entering the Wildlife Sanctuary area at Ellen Brook Nature Reserve within two years following the date of the statement published on 29 May 1992, and in doing so, ensuring that this action does not cause an unacceptable impact elsewhere.
- 6-2 The proponent shall make publicly available and subsequently implement the Drainage Management Plan being part of the Environmental Management Programme required by condition 8, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7 Wildlife Sanctuary Buffer

- 7-1 The proponent shall not quarry within 100 metres of the boundaries of the Wildlife Sanctuary at Ellen Brook Nature Reserve, until further investigations demonstrate, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority and the Department of Conservation and Land Management, that adverse effects upon the tortoise habitat will not occur.

8 Environmental Management Programme

- 8-1 The proponent shall prepare, make publicly available and subsequently implement an Environmental Management Programme, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The plans, strategies or reports to be prepared as part of the Environmental Management Programme shall include the following:

- 1 a staged quarrying strategy;
- 2 drainage management (see condition 6);
- 3 groundwater management and protection;
- 4 progressive rehabilitation of the site;

- 5 procedures to minimise noise, dust and visual impacts associated with the quarrying and transport operations;
- 6 public safety and mosquito breeding;
- 7 periodic reporting of monitoring results; and
- 8 consequential changes to project management to remedy unacceptable impacts.

9 Regional Development, Drainage and Rehabilitation

- 9-1 The proponent shall contribute to the preparation of a regional development, drainage and rehabilitation strategy for the Upper Swan Locality in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan, and other current and known proposed clay producers in the area, such that the strategy can be prepared within two years following the date of the statement published on 29 May 1992, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

10 Decommissioning/Closure Plans

- 10-1 Within two years following the date of the statement published on 29 May 1992, the proponent shall prepare a Preliminary Decommissioning/Closure Plan, which provides the framework to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Preliminary Decommissioning/Closure Plan shall address:

- 1 rationale for the siting and design of plant and infrastructure as relevant to environmental protection, and conceptual plans for the removal or, if appropriate, retention of plant and infrastructure;
 - 2 long-term management of ground and surface water systems;
 - 3 a conceptual rehabilitation plan for all disturbed areas and a description of a process to agree on the end land use(s) with all stakeholders;
 - 4 a conceptual plan for a care and maintenance phase; and
 - 5 management of noxious materials to avoid the creation of contaminated areas.
- 10-2 At least 12 months prior to the anticipated date of decommissioning/closure, or at a time agreed with the Environmental Protection Authority, the proponent shall prepare a Final Decommissioning/Closure Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Final Decommissioning/Closure Plan shall address:

- 1 removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;
- 2 long-term management of ground and surface water systems;
- 3 rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and
- 4 identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

10-3 The proponent shall implement the Final Decommissioning/Closure Plan required by condition 10-2 until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning/closure responsibilities have been fulfilled.

10-4 The proponent shall make publicly available the Final Decommissioning/Closure Plan required by condition 10-2 to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Procedures

- 1 Where a condition states "to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.
- 2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

Notes

- 1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

Dr Judy Edwards MLA
MINISTER FOR THE ENVIRONMENT

14 SEP 2004

Schedule 1

The Proposal (Assessment No. 1434)

Clay excavation commenced at this site early March, 2002, and previous to this topsoil from part of the first excavation cell was windrowed into a 1.5-metre tree-planted bund in readiness for excavation in the initial summer campaign.

Future excavation programs will continue within the excavation cell, in accordance with the approved staging plan. During the proposed earthworks programs (topsoil and overburden removal), approximately 0.5 hectares of the clay resource will be exposed at one time to reduce the potential for disturbance to local residents. Only relatively small quantities of clay will be excavated during the single campaign each year. Trucks will be loaded directly from the pit with an excavator working on a 3-metre face, with no clay stockpiling on-site. The clay excavation and cartage program generally runs for 2 to 6 weeks between November and May each year, depending on the tonnage removed.

The Key Proposal Characteristics are shown in Table 1.

Table 1 – Key Proposal Characteristics

Element	Quantities/Description
Size of Clay Body (million tonnes)	0.55
[#] Total Area of Disturbance (ha)	10.1
*Rate of Excavation (tonnes per year)	50,000
Major Infrastructure	nil
Overburden (million tonnes)	0.32 (1:0.6 ratio to clay)
Water Usage	nil

will also be rehabilitated.

* estimated at present usage.

Figures (attached).

Figure 1 – Project location.

Figure 2 – Proposed archaeological survey sites.

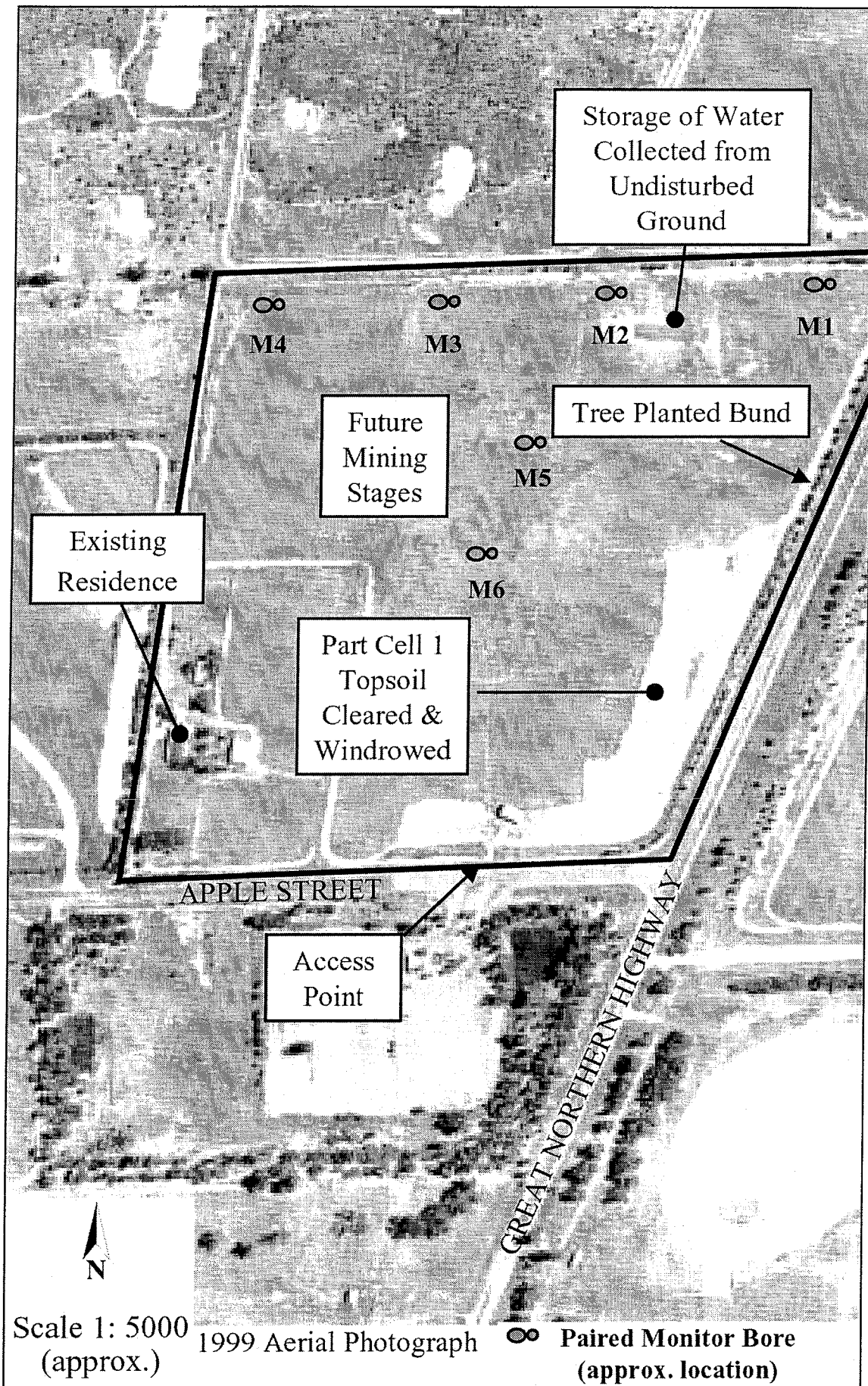


Figure 1: Project location.

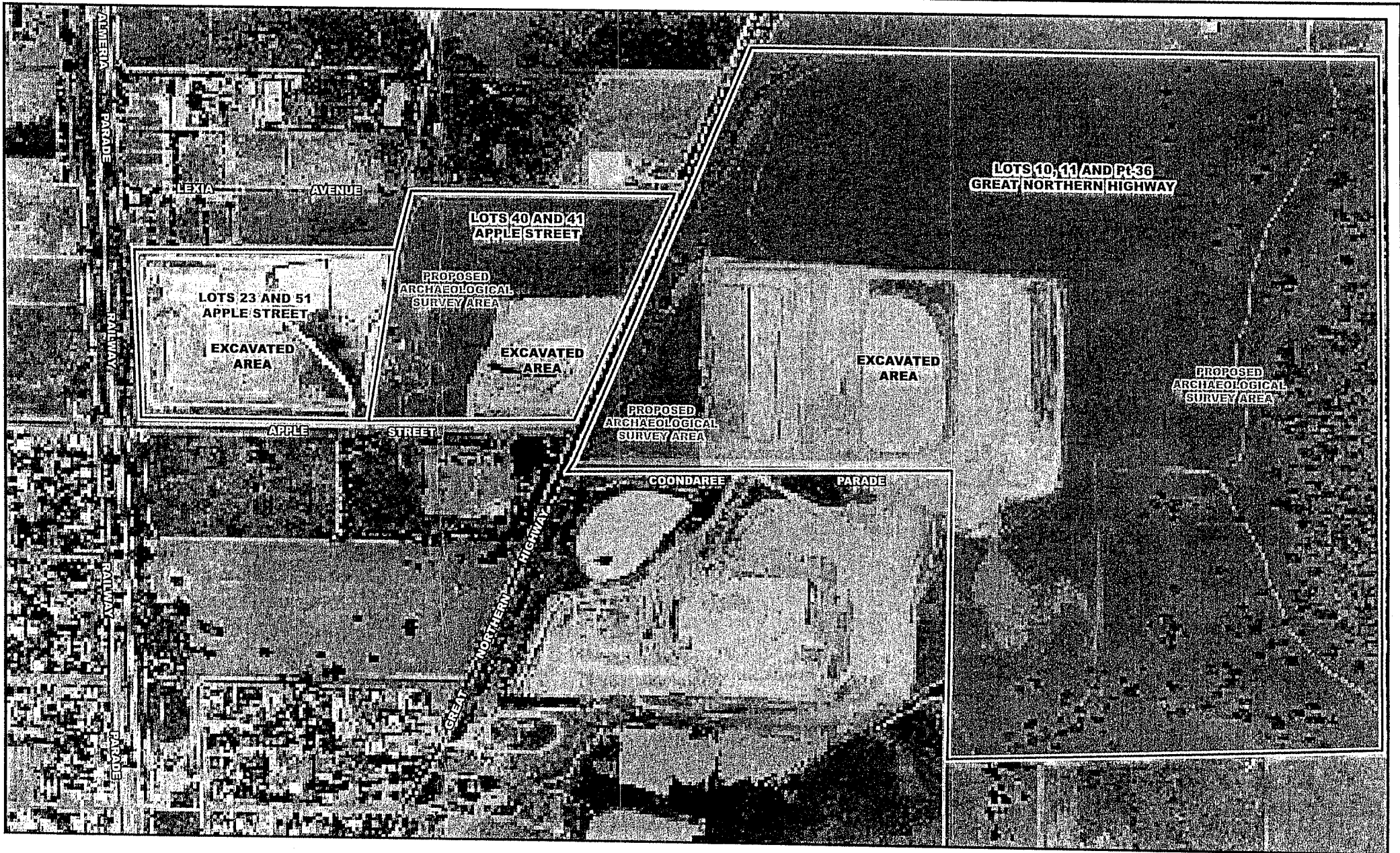


Figure 2 - Proposed Archaeological Survey Sites

M02042_01.09.04



NOT TO SCALE

Proponent's Environmental Management Commitments

1992, as amended

**CLAY EXCAVATION
LOTS 40 & 41 APPLE STREET
(formerly Lots 21 & 22 Apple Street)
UPPER SWAN**

(Assessment No. 1434)

MIDLAND BRICK COMPANY PTY LTD

Proponent's Environmental Management Commitments (consistent with commitments detailed in 1992)

CLAY EXCAVATION
LOTS 40 & 41 APPLE STREET
(formerly Lots 21 & 22 Apple Street)
UPPER SWAN (Assessment No. 1434)

The proponent is committed to the overall environmental management and rehabilitation philosophy outlined in the Consultative Environmental Review and subsequent modifications as outlined in Appendices 2 and 3 of Environmental Protection Authority Bulletin 610.

In specific terms, this means the proponent will:

- (1) Consult with the Planning Authorities to facilitate the derivation of a long-term strategic plan for the locality, which recognises and accepts the interim priority land use of clay extraction.
- (2) Establish an inter-company liaison mechanism to enable a coordinated approach between all three proponents of the nearby clay excavation projects with respect to addressing potential cumulative operational effects and overall rehabilitation goals.
- (3) Implement the management techniques described in both Sections 5 and 6 of the Consultative Environmental Review to ensure that adverse effects are not experienced in relation to:
 1. potential visual intrusion for residents at Upper Swan and through-traffic on Great Northern Highway;
 2. potential noise and dust disturbance of the residents at Upper Swan, particularly near the road junction of Apple Street and Almeria Parade;
 3. potential erosion of working areas and stockpiles and consequent silt transport to local drainage; and
 4. dewatering of accumulated rainfall and (perhaps) groundwater seepage from the working area of the pit which may be necessary to allow excavation to proceed.
- (4) Implement routine surveillance of the quarries at regular intervals throughout the year to assess critical parameters identified in the monitoring programme.
- (5) Rehabilitate previously worked areas sequentially as soon as practicable in accordance with the rehabilitation objectives developed in consultation with the Department of Conservation and Land Management, the Department for Planning and Infrastructure, the City of Swan and the landowner (ie. in respect of leasehold arrangements).
- (6) Contain any turbid water within its excavations and immediate surroundings to ensure it does not flow onto the tortoise habitat.

- (7)
- 7.1 Prepare an Environmental Monitoring and Management Programme to the requirements of the Environmental Protection Authority prior to commencement of operations at the site.
 - 7.2 Implement the Environmental Monitoring and Management Programme outlined in 7.1 to the requirements of the Environmental Protection Authority.
- (8) Verify that no adverse effects on the Short-Necked Tortoise habitat are experienced, by appropriate staging and monitoring of excavations.
- (9) Not excavate below the permanent water table and, if the excavation did reach the water table, the area would be backfilled to maintain at least one metre of cover.
- (10) Undertake an archaeological survey in the areas currently undisturbed by clay excavation activities within the project area, prior to clay excavation in these areas. (See figure 2 attached).
- (11) In the event that Aboriginal cultural deposits are discovered during the archaeological survey referred to in commitment 10 above or uncovered as a result of clay excavation or any other activities, work in the immediate area will cease immediately and the discovery will be reported to the Department of Indigenous Affairs.