NSW Site Auditor Scheme

# Site Audit Statement

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the *Contaminated Land Management Act 1997* on 12 October 2017.

For information about completing this form, go to Part IV.

## Part I: Site audit identification

Site audit statement no. 0096_IDG

This site audit is a:

☑ statutory audit

~~☐ non-statutory audit~~

within the meaning of the *Contaminated Land Management Act 1997*.

### Site auditor details

(As accredited under the *Contaminated Land Management Act 1997*)

| | | |
|---|---|---|
| Name | Ian Gregson | |
| Company | GHD Pty Ltd | |
| Address | 24 Honeysuckle Drive | |
| | Newcastle NSW | Postcode 2300 |
| Phone | 02 4979 9904 | |
| Email | ian.gregson@ghd.com | |

### Site details

| | | |
|---|---|---|
| Address | 21 Racecourse Road | |
| | Teralba NSW | Postcode 2284 |

## Property description

(Attach a separate list if several properties are included in the site audit.)

Part of Lot 2 in DP 220347 (shown as “New Lease Area” in Cadence Consulting Surveyors Boundary Plan in Attachment A of RCA Long-Term Environmental Management Plan, attached to this Site Audit Statement)

| | |
|---|---|
| Local government area | Lake Macquarie City Council |
| Area of site (include units, e.g. hectares) | 2.4 ha |
| Current zoning | IN1 General Industrial |

## Regulation and notification

To the best of my knowledge:

☐ ~~**the site is** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985,* as follows: (provide the no. if applicable)~~

- ☐ ~~Declaration no.~~
- ☐ ~~Order no.~~
- ☐ ~~Proposal no.~~
- ☐ ~~Notice no.~~

☑ **the site is not** the subject of a declaration, order, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

Note that Notice no. 483 (Section 35 Notice Number 483 UB3133, Issued 22 April 1998) is listed as the same street address (21 Racecourse Road, Teralba) but applies to a portion of Lot 2 in DP 220347 which does not correspond to the area which is subject to the site audit, but is located some 150 m to the south as discussed in RCA 2020a, *Remedial Action Plan, Expansion Component, Expansion of the Concrush Resource Recovery Facility, Teralba,* RCA Ref 13589-803/2, June 2020.

To the best of my knowledge:

☐ ~~the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997* - see note above regarding respective portions of Lot 2 DP 220347~~

☑ the site **has not** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*. (See note above)

## Site audit commissioned by

| | | |
|---|---|---|
| Name | Kevin Thompson | |
| Company | Concrush Pty Ltd | |
| Address | PO Box 312, Warners Bay NSW | Postcode 2282 |

| | |
|---|---|
| Phone | 0408 687 093 |
| Email | kevin@concrush.com.au |

**Contact details for contact person** (if different from above)

Name

Phone

Email

**Nature of statutory requirements** (not applicable for non-statutory audits)

☐ ~~Requirements under the *Contaminated Land Management Act* 1997 (e.g. management order; please specify, including date of issue)~~

☐ ~~Requirements imposed by an environmental planning instrument (please specify, including date of issue)~~

☑ Development consent requirements under the *Environmental Planning and Assessment Act 1979* (please specify consent authority and date of issue)

SSD 8753 issued by the Minister for Planning and Public Spaces on 27/3/2020

☐ ~~Requirements under other legislation (please specify, including date of issue)~~

## Purpose of site audit

☐ **A1** To determine land use suitability

Intended uses of the land:

OR

☑ **A2** To determine land use suitability subject to compliance with either an active or passive environmental management plan

Intended uses of the land: Resource Recovery Facility

OR

(Tick all that apply)

☐ **B1** To determine the nature and extent of contamination

☐ **B2** To determine the appropriateness of:

- ☐ an investigation plan
- ☐ a remediation plan
- ☐ a management plan

☐ **B3** To determine the appropriateness of a **site testing plan** to determine if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

☐ **B4** To determine the compliance with an approved:

- ☐ **voluntary management proposal** or
- ☐ **management order** under the *Contaminated Land Management Act 1997*

☐ **B5** To determine if the land can be made suitable for a particular use (or uses) if the site is remediated or managed in accordance with a specified plan.

Intended uses of the land:

## Information sources for site audit

Consultancies which conducted the site investigations and/or remediation:

- Coffey Environments
- RCA Australia

Titles of reports reviewed:

- RCA 2018a, *Baseline Contamination Assessment, Proposed Concrush Facility Expansion, Racecourse Road, Teralba*, RCA Ref 13589-401/3, November 2018
- RCA 2020a, *Remedial Action Plan, Expansion Component, Expansion of the Concrush Resource Recovery Facility, Teralba,* RCA Ref 13589-803/2, June 2020
- RCA 2023a, *Validation of Remedial Works, Expansion Component, Expansion of the Concrush Resource Recovery Facility, Teralba*, RCA ref 13589-1001/1, March 2023

- RCA 2023b, *Long-Term Environmental Management Plan, Expansion Component, Concrush Resource Recovery Facility, Teralba, NSW*, RCA ref 13589-1002/1, March 2023

Other information reviewed, including previous site audit reports and statements relating to the site:

- Coffey 2013, *Soil Contamination Assessment – Proposed Industrial Subdivision, Racecourse Road, Teralba NSW*, 1 May 2013
- Coffey 2014, *Proposed Industrial Subdivision, Racecourse Road, Teralba NSW, Environmental Site Management Plan,* 9 July 2014
- RCA 2018b, *Response to the NSW EPA following comments re proposed Concrush Expansion, Racecourse Road, Teralba*, RCA ref 13589-402/1, 1 March 2018.
- RCA 2020b, *Construction Phase Management Plan During Remediation, Expansion of the Concrush Resource Recovery Facility, Teralba*, RCA Ref 13589-806/1, November 2020
- Cardno 2021, *VENM Assessment, Proposed Residential Development, Munibung Estate, Hopkins St, Speers Point NSW*, ref. 81021060-001.1, Cardno (NSW/ACT) Pty Ltd, 16 February 2021.

## Site audit report details

Title Site Audit of Concrush Resource Recovery Facility, Teralba NSW, Site Audit Report 0096_IDG

Report no. 12531464-REP-0_Site Audit Report 0096_IDG Date 30 March 2023

# Part II: Auditor's findings

Please complete either Section A1, Section A2 or Section B, not more than one section. (Strike out the irrelevant sections.)

- Use **Section A1** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **without the implementation** of an environmental management plan.
- Use **Section A2** where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land uses **with the implementation** of an active or passive environmental management plan.
- Use **Section B** where the audit is to determine:
    - (B1) the nature and extent of contamination, and/or
    - (B2) the appropriateness of an investigation, remediation or management plan[1], and/or
    - (B3) the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or
    - (B4) whether the terms of the approved voluntary management proposal or management order have been complied with, and/or
    - (B5) whether the site can be made suitable for a specified land use (or uses) if the site is remediated or managed in accordance with the implementation of a specified plan.

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

## Section A1

**I certify that, in my opinion:**

The **site is suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

- ☐ Residential, including substantial vegetable garden and poultry
- ☐ Residential, including substantial vegetable garden, excluding poultry
- ☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☐ Day care centre, preschool, primary school
- ☐ Residential with minimal opportunity for soil access, including units
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify):

**OR**

- ☐ I certify that, in my opinion, the **site is not suitable** for any use due to the risk of harm from contamination.

Overall comments:

# Section A2

## I certify that, in my opinion:

Subject to compliance with the **attached** environmental management plan[2] (EMP), the site is suitable for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ ~~Residential, including substantial vegetable garden and poultry~~

☐ ~~Residential, including substantial vegetable garden, excluding poultry~~

☐ ~~Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~

☐ ~~Day care centre, preschool, primary school~~

☐ ~~Residential with minimal opportunity for soil access, including units~~

☐ ~~Secondary school~~

☐ ~~Park, recreational open space, playing field~~

☐ ~~Commercial/industrial~~

☑ Other (please specify):

Resource Recovery Centre as approved under Development Consent for SSD 8753

## EMP details

| | |
|---|---|
| Title | Long-Term Environmental Management Plan, Expansion Component, Concrush Resource Recovery Facility, Teralba, NSW |
| Author | RCA Australia |
| Date | 24 March 2023 No. of pages: 45 |

## EMP summary

This EMP (attached) is required to be implemented to address residual contamination on the site.

The EMP: (Tick appropriate box and strike out the other option.)

☐ ~~requires operation and/or maintenance of **active** control systems[3]~~

☑ requires maintenance of **passive** control systems only[3].

[2] Refer to Part IV for an explanation of an environmental management plan.
[3] Refer to Part IV for definitions of active and passive control systems.

**Purpose of the EMP:**

To detail the required environmental works, measures and controls, as well as means and systems for their implementation as required for the protection of human health and the environment with respect to the contaminated soil sequestered within the site. Also to address requirements for an Asbestos Management Plan (AMP) under the Work Health Safety (WHS) Regulation 2017.

Specific objectives of the LTEMP are to:

- Ensure that the sequestered material remains adequately capped and mitigation works are documented for relevant parties
- Ensure that workers or visitors to the site are not exposed to unacceptable risks posed by sequestered soils
- Ensure that there are no environmental risks posed by the sequestered soils
- Provide standard operating procedures for undertaking excavation works in compliance with external environmental policies
- Provide prescriptions for mitigation measures to ensure that human and ecological impacts of the works are minimised and not significant
- Identify personnel roles and responsibilities during any future proposed ground disturbance works.

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**Description of the nature of the residual contamination:**

The types of material which have been sequestered by the capping works comprise the following:

- Uncontrolled fill material including industrial and anthropogenic waste products, primarily concrete.
- Fragments of bonded materials containing asbestos. Observed material was not considered to be friable and no free fibres have been identified in testing to date however the potential should not be discounted.
- Soil and material impacted by semi-volatile hydrocarbons.
- Neutralised and potential acid sulfate soils.

The site has been capped with more than 0.5m of material, primarily a recovered concrete material, over an orange geofabric material with the exception of a small section along the northern boundary at the eastern end of the site; the wetland outside the western boundary fence; and the leachate pond, constructed wetland and sediment dam 2 (where the marker layer is covered by GCL and HDPE liners).

Services trenches have been lined with marker layer and backfilled with clean material such that any works undertaken within the established trenches will not encounter potentially contaminated materials.

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**Summary of the actions required by the EMP:**

Providing that the controls within the LTEMP are employed and maintained, exposure to and/or contact with the contaminated or acid sulfate soil materials will not occur during normal use of the site.

Management controls requirements are related to:

- Awareness that the LTEMP applies to the site. No further disclosure of the detail in the LTEMP is considered to be necessary except to personnel who will be undertaking excavation works (regardless of intended depth) or works within the Leachate Pond, Wetland or Sediment Dam 2. Customers entering the site to deposit or collect materials are not considered to require information relating to the LTEMP as long as operating procedures are implemented. Some visitors may require information, depending on the purpose of their visit.
- Maintenance of the extent of the capping layer such that adequate cover (nominally 0.5m minimum) remains over the marker layer to prevent exposure and/or disturbance of the underlying material throughout the site and that the geomembranes located within the Leachate Pond, Wetland and Sediment Dam 2 remain covered.
- Restriction of excavations below the marker layer. No excavations are to be undertaken on site without the implementation of appropriate management measures as detailed in the LTEMP.
- Prohibition on the use of groundwater unless an assessment has been undertaken on its suitability for use.

The LTEMP describes what it considers to be standard operations; non-standard operations, exposure risk and considerations which should be taken into account prior to subsurface disturbance within the site. Monitoring is limited to inspections of site condition to ensure the capping layer is maintained.

**How the EMP can reasonably be made to be legally enforceable:**

The LTEMP will be incorporated into the Operating Environmental Management Plan (OEMP) compiled in accordance with SSD Approval condition C5 and subsequently implemented in accordance with SSD Approval condition C7(b). This will make the LTEMP enforceable as a consent condition under the EP&A Act 1979, and insofar as it fulfills the requirements of an Asbestos Management Plan, the LTEMP will also be enforceable under the WHS Regulation 2017.

**How there will be appropriate public notification:**

This SAS and attached LTEMP will to be submitted to the NSW Department of Planning and Environment (formerly Department of Planning, Industry and the Environment) as part of SSD 8753 Approval conditions. In accordance with Clause 279 of the Environmental Planning and Assessment Regulation 2021, Lake Macquarie City Council will record the existence of the Site Audit Statement in the Section 10.7 certificate relevant for part Lot 2 DP220347: this certifies that the site is suitable for the proposed use as part of the Concrush Resource Recovery Facility subject to the implementation of the LTEMP.

The LTEMP will also be incorporated into the Concrush environmental management system for the operations, and it is the responsibility of Concrush Pty Ltd to ensure that maintenance workers and other contractors affected by the LTEMP are notified of the contamination status of the site, and are provided with a current copy of the LTEMP prior to commencing any ground disturbance works.

**Overall comments:**

Risks associated with contaminated soils at the site were primarily related to the presence of bonded asbestos containing materials (ACM), and the potential for disturbance and

generation of airborne fibres during site activities. Remediation has provided a barrier to disturbance of contaminated soils, and routine use of the site is not expected to result in any exposure to contamination. Foreseeable activities which could result in exposure to contaminated soils can reasonably be managed by means of the LTEMP.

Groundwater contamination does not present a risk to site use, and is unlikely to have any significant impacts to aquatic receptors given that concentrations of contaminants are relatively low (hydrocarbons and metals have been reported in excess of ecological criteria). As noted above, in accordance with the LTEMP groundwater is not to be extracted for discharge or use without assessment for that specific purpose.

The Development Consent for SSD 8753 (Condition B20) required preparation, in consultation with the EPA, of a Groundwater Management Plan (GMP) and approval of the GMP by the Planning Secretary. The most recent approved version of the GMP must be implemented for the duration of the development. Based on the involvement of the regulators with the GMP, and as the groundwater contamination does not pose an unacceptable risk to users of the site, the Auditor considers the land is suitable for its proposed use despite the presence of groundwater contamination as described above.

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## Section B

Purpose of the plan[4] which is the subject of this audit:

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**I certify that, in my opinion:**

(B1)

☐ The nature and extent of the contamination **has** been appropriately determined

☐ The nature and extent of the contamination **has not** been appropriately determined

AND/OR (B2)

☐ The investigation, remediation or management plan **is** appropriate for the purpose stated above

☐ The investigation, remediation or management plan **is not** appropriate for the purpose stated above

AND/OR (B3)

☐ The site testing plan:

☐ **is** appropriate to determine

☐ **is not** appropriate to determine

if groundwater is safe and suitable for its intended use as required by the *Temporary Water Restrictions Order for the Botany Sands Groundwater Resource 2017*

AND/OR (B4)

☐ The terms of the approved voluntary management proposal* or management order** (strike out as appropriate):

☐ **have** been complied with

☐ **have not** been complied with.

*voluntary management proposal no.

---

**management order no.

---

AND/OR (B5)

☐ The site **can be made suitable** for the following uses:

(Tick all appropriate uses and strike out those not applicable.)

☐ Residential, including substantial vegetable garden and poultry

☐ Residential, including substantial vegetable garden, excluding poultry

☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry

☐ Day care centre, preschool, primary school

[4] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

- ☐ Residential with minimal opportunity for soil access, including units
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify):

IF the site is remediated/managed* in accordance with the following plan (**attached**):

*Strike out as appropriate

Plan title

Plan author

Plan date No. of pages

SUBJECT to compliance with the following condition(s):

**Overall comments:**

# Part III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997.*

Accreditation no. 0101

**I certify that:**

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Signed 

Date 30 March 2023

# Part IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

## How to complete this form

### Part I

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

### Part II

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remediation plan or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use or uses of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A1 or Section A2 or Section B of Part II, **not** more than one section.

### Section A1

In Section A1 the auditor may conclude that the land is *suitable* for a specified use or uses OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further investigation or remediation or management of the site was needed to render the site fit for the specified use(s). **Conditions must not be** imposed on a Section A1 site audit statement. Auditors may include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

### Section A2

In Section A2 the auditor may conclude that the land is *suitable* for a specified use(s) subject to a condition for implementation of an environmental management plan (EMP).

*Environmental management plan*

Within the context of contaminated sites management, an EMP (sometimes also called a 'site management plan') means a plan which addresses the integration of environmental mitigation and monitoring measures for soil, groundwater and/or hazardous ground gases throughout an existing or proposed land use. An EMP succinctly describes the nature and location of contamination remaining on site and states what the objectives of the plan are, how contaminants will be managed, who will be responsible for the plan's implementation and over what time frame actions specified in the plan will take place.

By certifying that the site is suitable subject to implementation of an EMP, an auditor declares that, at the time of completion of the site audit, there was sufficient information satisfying guidelines made or approved under the *Contaminated Land Management Act 1997*

(CLM Act) to determine that implementation of the EMP was feasible and would enable the specified use(s) of the site and no further investigation or remediation of the site was needed to render the site fit for the specified use(s).

Implementation of an EMP is required to ensure the site remains suitable for the specified use(s). The plan should be legally enforceable: for example, a requirement of a notice under the CLM Act or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of *the Environmental Planning and Assessment Act 1979*.

*Active or passive control systems*

Auditors must specify whether the EMP requires operation and/or maintenance of active control systems or requires maintenance of passive control systems only. Active management systems usually incorporate mechanical components and/or require monitoring and, because of this, regular maintenance and inspection are necessary. Most active management systems are applied at sites where if the systems are not implemented an unacceptable risk may occur. Passive management systems usually require minimal management and maintenance and do not usually incorporate mechanical components.

*Auditor's comments*

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

## Section B

In Section B the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or the appropriateness of a site testing plan in accordance with the *Temporary Water Restrictions Order for the Botany Sands Groundwater Source 2017*, and/or whether the terms of an approved voluntary management proposal or management order made under the CLM Act have been complied with, and/or whether the site can be made suitable for a specified land use or uses if the site is remediated or managed in accordance with the implementation of a specified plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement. The condition must not specify an individual auditor, only that further audits are required.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

### Part III

In **Part III** the auditor certifies their standing as an accredited auditor under the CLM Act and makes other relevant declarations.

## Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to

- the **NSW Environment Protection Authority**:
  nswauditors@epa.nsw.gov.au or as specified by the EPA

  AND
- the **local council** for the land which is the subject of the audit.

# LONG-TERM ENVIRONMENTAL MANAGEMENT PLAN, EXPANSION COMPONENT

## CONCRUSH RESOURCE RECOVERY FACILITY, TERALBA, NSW

**Prepared for CONCRUSH PTY LTD**

**Prepared by RCA Australia**

**RCA ref 13589-1002/1**

**MARCH 2023**

RCA AUSTRALIA
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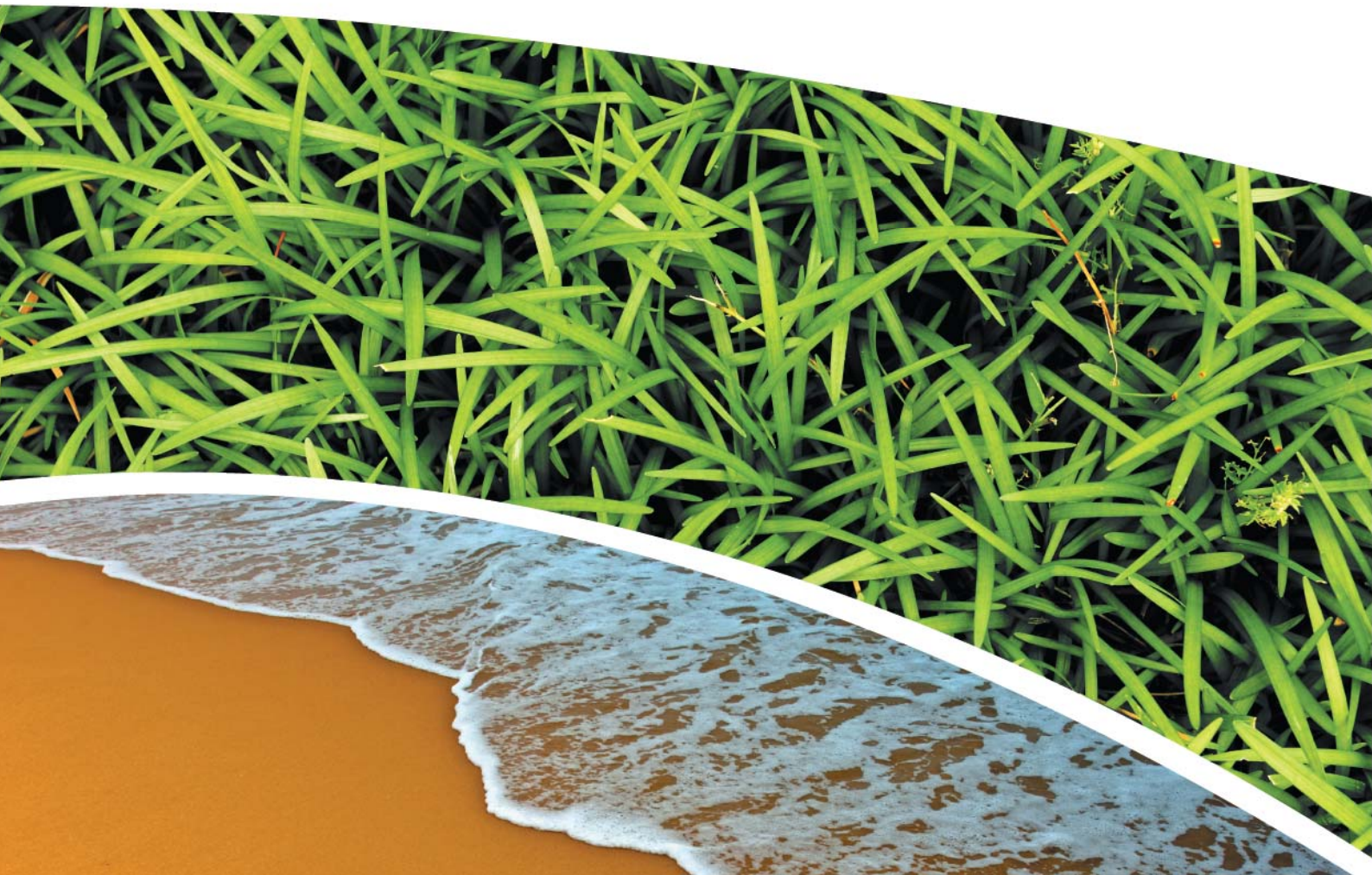

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| DOCUMENT STATUS | | | | | |
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| **Rev No** | **Comment (reasons for revision/ sections revised)** | **Author** | **Approved for Issue (Project Manager)** | | |
| | | | **Name** | **Signature** | **Date** |
| /0 | Draft with highlighted text for client confirmation | F Brooker | F Brooker | | 27.02.23 |
| /0 | Draft: no changes | F Brooker | F Brooker | | 02.03.23 |
| /1 | Final – changes to address auditor comments | F Brooker | F Brooker |  | 24.03.23 |

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| /0 | 1 | Electronic (email) | GHD Pty Ltd – Ian Gregson – Ian.Gregson@ghd.com | 02.03.23 |
| /0 | 1 | Electronic report | RCA – job archive | 02.03.23 |
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| /1 | 1 | Electronic (email) | GHD Pty Ltd – Ian Gregson – Ian.Gregson@ghd.com | 24.03.23 |
| /1 | 1 | Electronic report | RCA – job archive | 24.03.23 |

# *Contents*

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***EXTENT OF MARKER LAYER AND DEPTH OF CAPPING ABOVE MARKER LAYER (AS SURVEYED)***

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***FORM TEMPLATES***

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***UNEXPECTED FINDS***

RCA ref 13589-1002/1
Client ref SSD8753

24 March 2023

Concrush Pty Ltd
21 Racecourse Road
Teralba NSW 2284

Attention: Mr Kevin Thompson

RCA AUSTRALIA
GEOTECHNICAL • ENVIRONMENTAL

Geotechnical Engineering
Engineering Geology
Environmental Engineering
Hydrogeology
Construction Materials Testing
Environmental Monitoring
Noise & Vibration
Occupational Hygiene

**LONG-TERM ENVIRONMENTAL MANAGEMENT PLAN, EXPANSION COMPONENT EXPANSION OF THE CONCRUSH RESOURCE RECOVERY FACILITY, TERALBA, NSW**

## 1 INTRODUCTION

This long-term environmental management plan (LTEMP) details the requirements for management due to the presence of encapsulated contaminated soil and waste present at the Expansion Component of the Concrush Resource Recovery Facility, situated in Teralba, NSW.

The existing Concrush facility is situated at 21 Racecourse Road, part Lot 2 DP220347 Teralba and provides recycling of concrete, asphalt, other building materials and green waste into products such as roadbase, drainage aggregates, pipe bedding and haunch, packing fines, decorative aggregates and mulches. These products are then sold for commercial, domestic and household applications. The existing Concrush facility operates under Environment Protection Licence (EPL) 13351 which allows the recycling of 108,000t of waste per annum and the storage of up to 40,000t of waste material at any one time.

Concrush Pty Limited (Concrush) have been provided Approval with regards to the Expansion of the Concrush Resource Recovery Facility ("the Project") as State Significant Development (SSD 8753).

The Project will increase capacity up to 250,000t of waste processing per year with a maximum storage of 150,000t per year and will utilise a portion of land adjoining the southern boundary of the current facility as presented in **Figure 1** below. This portion of land is hereinafter referred to as the 'site'.


**Figure 1** *Expansion Component in Relation to Existing Concrush Facility (note boundary approximate: refer to survey (**Attachment A**) for specific boundary).*

The contamination, as detailed in **Section 6**, within the site comprises asbestos fragments with some minor semi-volatile hydrocarbon concentrations within a fill layer above the natural material. Anthropogenic waste was identified within the fill layer and acid sulfate soils are present within the underlying natural material. The contamination, waste and acid sulfate soil do not pose a risk to the users of the site, or the environment except in specific circumstances which are described in this LTEMP.

This report is a stand-alone document which details management requirements for the protection of human health and the environment once the site is incorporated into the Concrush operational activities. It is noted that, at the time of writing, some remaining construction works are required however that these are all surficial and will not require more than minor excavations into the capping layer. Works on the remainder (currently operational, refer **Figure 1** above) component of the Concrush facility are not subject to this LTEMP although it is likely that some of the controls will be implemented as part of best practice and a cautionary approach.

This report supplements the validation report (Ref [1]) which provides verification of the remedial works which were undertaken to ensure suitability for the proposed commercial use. Reference should be made to the validation report (Ref [1]) for details of soil results from previous investigations, remediation and validation works. Providing that the controls within this LTEMP are employed and maintained, exposure to and/or contact with the contaminated or acid sulfate soil materials will not occur during normal use of the site. Management controls requirements are related to:

- Awareness that this LTEMP applies to the site. No further disclosure of the detail in this LTEMP is considered to be necessary except to personnel who will be undertaking excavation works (regardless of intended depth) or works within the Leachate Pond, Wetland or Sediment Dam 2 (refer **Figure 2**).

  - Customers entering the site to deposit or collect materials are not considered to require information relating the LTEMP as long as operating procedures (refer **Section 7.2**) are implemented. Some visitors may require information, depending on the purpose of their visit.

- Maintenance of the extent of the capping layer such that adequate cover (nominally 0.5m minimum) remains over the marker layer to prevent exposure and / or disturbance of underlying material throughout the site and that the geomembranes located within the Leachate Pond, Wetland and Sediment Dam 2 remain covered.
- Restriction of excavations below the marker layer. No excavations are to be undertaken on site without the implementation of appropriate management measures as detailed in this LTEMP.
- Prohibition on the use of groundwater unless an assessment has been undertaken on its suitability for use.

This report has been prepared for Concrush Pty Ltd who are the holders of the SSD 8753 consent and the developers as well as the current lessee of the site. Concrush Pty Ltd has accepted the responsibility for the implementation of this LTEMP as of February 2023 for the purpose of the completion of the development. This LTEMP is to be incorporated into the Concrush environmental management system for the operations.

## 2 PURPOSE

The purpose of this LTEMP is to detail the required environmental works, measures and controls, as well as means and systems of their implementation. Implementation as per this LTEMP is required for the protection of human health and the environment with respect to the contaminated soil sequestered within the site.

This LTEMP is considered to address Concrush obligations under the WHS Regulation to provide an Asbestos Management Plan (AMP) as it has addressed all the requirements for an AMP as detailed in Clause 429 of the WHS Regulation:

- The LTEMP is written as required by sub-clause (2).
- The LTEMP will be maintained (refer **Section 8**) as required by sub-clause (3).
- The LTEMP includes the identification of the asbestos (refer **Sections 5** and **6**), management procedures (refer **Section 7**), incident reporting (refer **Section 7.8**), and awareness and training of relevant personnel (refer **Section 8.4**) as required by sub-clause (4).
- The LTEMP will be available at the site (refer **Section 8.4**) as required by sub-clause (5).

**Section 8** of this report details the review process of this LTEMP as required by clause 430.

Other clauses in relation to asbestos, such as the generation of an asbestos register and its availability, have been addressed by Concrush separate to this LTEMP.

## 3 OBJECTIVES

Specific objectives of this LTEMP are to:

- Ensure that the sequestered material remains adequately capped and mitigation works are documented for distribution to relevant parties associated with the site, Lake Macquarie City Council and any other parties that may be involved with works within the site.
- Ensure that the following are not exposed to unacceptable risks posed by sequestered soils:
    - Concrush workers or subcontractors.
    - Workers undertaking maintenance on utilities and others that may periodically require access.
    - Visitors at the site, such as those disposing of waste or collecting recovered resources.
- Ensure that there are no environmental risks posed by the sequestered soils.
- Provide standard operating procedures for undertaking excavation works in compliance with external environmental policies.
- Provide prescriptions for mitigation measures to ensure that human and ecological impacts of the works are minimised and not significant.
- Identify personnel roles and responsibilities during any future proposed ground disturbance works.

Any proposed changes to the LTEMP which entails a reduction or lessening of any management or monitoring requirements will require concurrence from a NSW EPA accredited contaminated sites auditor. However, any changes which act to increase the stringency of the LTEMP may not need the involvement of an auditor.

The LTEMP is considered necessary and applies indefinitely until such time that the sequestered soil has been actively remediated or it can be demonstrated that soil contaminant concentrations no longer remain above the applicable guideline values for land uses permitted under the zoning. Should removal of management be sought, it will require the written approval of a suitably qualified professional, written concurrence from a NSW EPA accredited contaminated sites auditor and Lake Macquarie City Council.

It is noted that acid sulfate soils are present in the natural soils at the site, and in the adjoining operational portion of the site. An acid sulfate soil management plan (ASSMP, Ref [2]) was prepared for the construction phase of the project and provides processes to be followed when excavating into the natural soils. This Plan, or equivalent and updated alternative, is to be retained on site and implemented in addition to this LTEMP to mitigate the potential risk to the environment from acid sulfate soils.

## 4 SITE IDENTIFICATION AND DESCRIPTION

The part of Lot 2 DP220347 which comprises the site as per **Figure 1** and **Attachment A**, and will be included in the land known as 21 Racecourse Road, Teralba NSW has been subject to remediation as part of re-development for commercial land use.

The LTEMP covers the whole Expansion Component portion of the Lot and is bounded to the north by the existing Concrush Resource Recovery Facility, to the east by the Lot boundary, to the west by the Lot boundary and the extent of wetlands in which works were not permitted and to the south by the extent of lease. The boundary is approximated at the site by the alignment of a fence.

A summary of the identification information is present in **Table 1** and the final developed layout of the site is shown in **Figure 2**.

**Table 1** *Details of Site*

| | |
|---|---|
| **Local Government Area** | Lake Macquarie City Council |
| **Current zoning (Ref [3])** | IN1 – General Industrial |
| **Current use** | Expansion of existing Concrush facility. |
| **Size of site** | Approximately 2.4ha |
| **Land use to the:** **North** | Industrial – current Concrush facility. |
| **South** | Industrial |
| **East** | Racecourse Road and then Cockle Creek |
| **West** | Main Northern Rail line and wetlands |
| **Nearest sensitive receptor (human health)** | Residential housing located approximately 360m south east across Cockle Creek. |
| **Nearest sensitive receptor (environmental)** | Cockle Creek located approximately 35m east and a waterbody approximately 30m west |

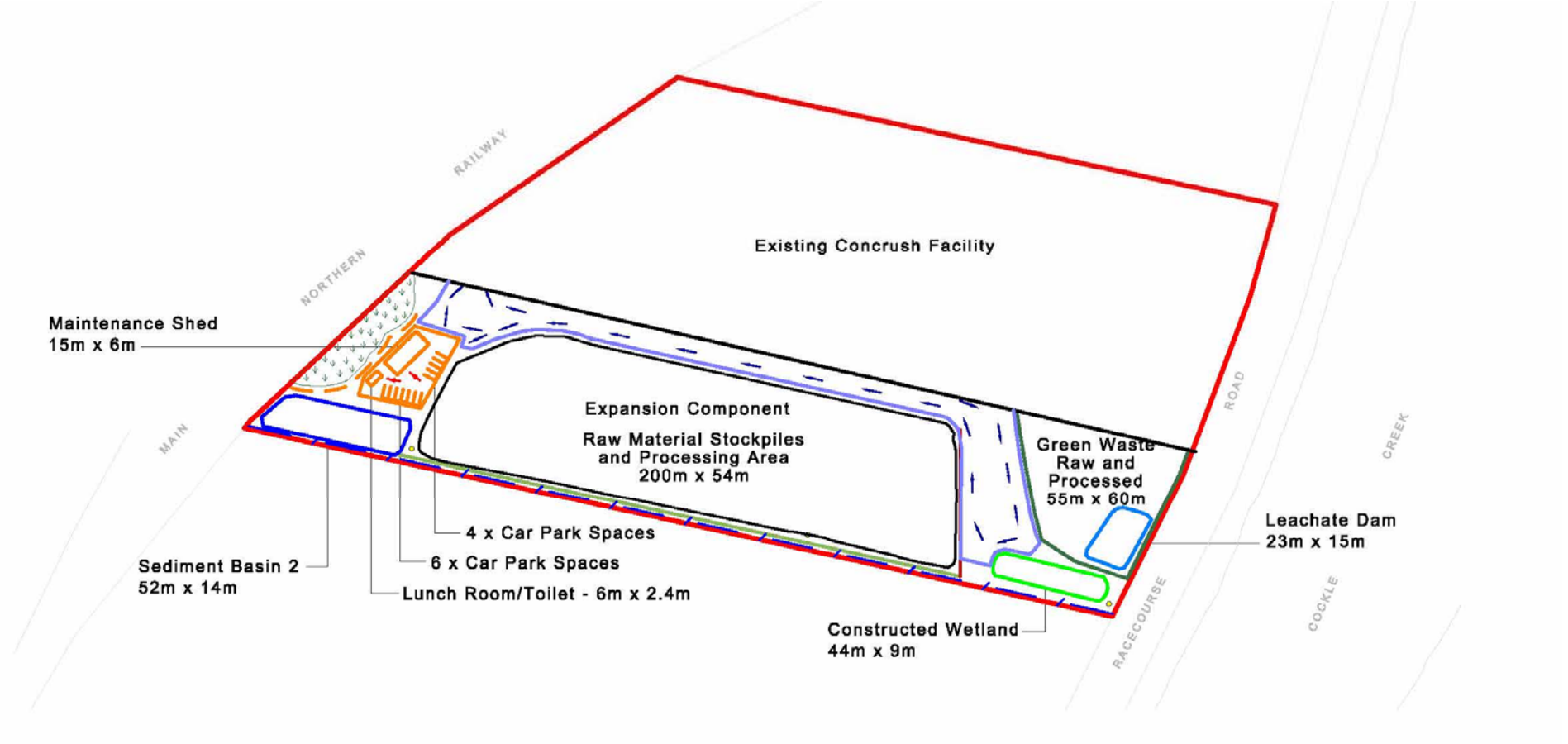



**Figure 2** *Layout of site and adjacent Concrush facility following Project completion.*

# 5 SITE BACKGROUND

## 5.1 SITE HISTORY

The RAP (Ref [4]) included a historical review of the Lots and surrounding notifications, local council records, published local geology and hydrogeology, nearby registered groundwater bores and historical aerial photographs: this section summarises that information.

The site was historically used as part an equine racecourse from at least 1954 until between 1979 and 1984 at which time the site was used for informal material storage in association with adjacent facilities (presumed to be predominantly what is now Lucky's Metals to the south of the site). The site was subjected to the placement of uncontrolled fill, presumed to facilitate trafficability of what was otherwise swamp/wetland in nature and intrusive assessments (Ref [5] and [6]) have identified the presence of fragments of asbestos containing materials at the surface and in the fill material beneath the surface. Hydrocarbon concentrations were detected in excess of ecological criteria (Ref [7]) for commercial / industrial sites and concrete, metal and other anthropogenic materials were identified in the fill material as well as at the surface of site. Acid sulfate soils were identified to be present within natural materials at the site which underly the fill at variable depth from the surface.

The final remedial strategy, based on the RAP (Ref [4]) as approved by the NSW EPA accredited contaminated sites auditor, comprised the:

- Assessment of the stockpiles at the site prior to their removal and/or placement at the site below the marker layer.
- Excavation as required below the existing surface and management of excavated soil in accordance with the ASSMP (Ref [2]) as required.
- Grading, and compaction as required at the recommendation of the appointed geotechnical engineer, of the site surface as required for logistical purpose.
- Placement of the marker layer across the surface of the site including in the Leachate Pond, constructed Wetland and Sediment Dam 2 (refer **Figure 2**).
- Placement of geomembranes (comprising GCL and HDPE[1]) in the Leachate Pond and constructed Wetland.
    - It is noted that geomembranes were also placed in Sediment Dam 2 for structural purpose.
- Survey of the final placement of the marker layer.
- Importation of material, primarily sourced from Concrush, to achieve design surface levels.
- Survey of the site to confirm design depths of capping above the marker layer have been achieved.

The validation report for the site (Ref [1]) details the verification that remedial works were undertaken in accordance with the remedial strategy.

[1] Geocomposite Clay Liner and High Density Polyethylene

### 5.2 GEOLOGY AND HYDROGEOLOGY

The natural soil type of the site is Quaternary Alluvium deposits consisting of sands, silts, gravels and clays overlying Permian aged Newcastle Coal Measures of coal, tuff, conglomerate, sandstone and shale of the Moon Island Beach Sub-Group. The site however has been subject to placement of fill which comprise a heterogeneous mix of sand, clay and gravel with sandstone and coal as well as anthropogenic materials such as metal, brick, concrete, plastic, timber and terracotta fragments identified. Asbestos containing materials have been identified at the former (pre-remediation) surface and within the fill layer.

In-situ soil situated below the fill have been classified as acid sulfate soil. In the event that acid sulfate soil is disturbed, oxidisation may cause acid generation which may leach onto the surface surrounding the area of disturbance and into underlying soils and subsequently groundwater. If stockpiles of potential acid sulfate soil are placed near waterways or stormwater system, leachate may cause detrimental ecological effects within the waterway.

Seven (7) groundwater bores are registered within, or in close vicinity to, the existing Concrush facility and were registered in one block in 2004. The bores are referred to as test bores, however no further information is provided on work summaries and Concrush have stated that current personnel have no knowledge of these bores. As such it is considered that these bores may have been mapped in the wrong location and no consideration of these wells was undertaken.

Three (3) groundwater monitoring wells were installed as part of the feasibility assessment and in accordance with SSD 8753 Approval Condition B20: one at the western (railway) boundary of the site, one at the eastern (Racecourse Road) boundary of the site and one in the western portion of the site. Depth to groundwater was between one (1) and three (3) metres below the existing surface and analysis undertaken did not indicate the presence of contamination (hydrocarbons, metals or phenols) which pose a risk to human health although there were some concentrations of hydrocarbons and metals excess of the ecological criteria (Ref [8]).

Groundwater monitoring of the two (2) remaining wells (the well in the western portion of the site was destroyed by the capping works) is included, at the time of writing, within the requirements of a Groundwater Management Plan (GMP, Ref [9]). Monitoring is in relation to an increase in nutrients, hydrocarbons and metals in the groundwater which may result due to a loss of integrity to the lining of the Leachate Pond and the Wetland, and pollution incidents (such as fuel spill). The implementation of the GMP is required in accordance with the SSD Approval condition B21(b).

## 6 STATUS OF REMAINING CONTAMINATION

Remediation as part of bulk earthworks at the site comprised the placement of material excavated for the construction of Sediment Dam 2 (on-site) and Sediment Dam 1 (existing Concrush site) under the marker layer following confirmation of acid sulfate soil neutralisation. Material intended to be brought onto site from earthworks associated with the driveway construction was not excavated within the capping schedule and has not been brought to site.

No assessment of hazardous ground gasses has been undertaken; while not considered to be a potential based on the identified contamination (refer below) these may be present due to decay of natural organic matter within the natural alluvial soils.

The types of material which has been sequestered by the capping works comprises the following:

- Uncontrolled fill material including industrial and anthropogenic waste products, primarily concrete.
- Fragments of bonded materials containing asbestos. Observed material was not considered to be friable and no free fibres have been identified in testing to date however the potential should not be discounted.
- Soil and material impacted by semi-volatile hydrocarbons.

The site has been capped with more than 0.5m of material, primarily a recovered concrete material, over an orange geofabric material (refer **Attachment B**) with the following exceptions:

- A small section along the northern boundary at the eastern end of the site. This area is partially concreted with electrical infrastructure and a shed similar to those used by Concrush personnel assisting customers on the existing facility such that there is considered to be a sufficient barrier against exposure during normal activities, however any works in this area need to be conducted as non-standard (refer **Section 7.3.2**).
- The wetland outside of the western boundary fence. Disturbance of this area was not permitted and the contamination status is unknown, although it is noted that there was not the same extent of fill as was observed in the remainder of the site. No access to this area is to be undertaken as part of standard operations at the site.
- The Leachate Pond, Wetland and Sediment Dam 2. The marker layer is covered by GCL and HDPE with a thin layer of recycled aggregate over the top (Leachate Pond and Sediment Dam 2) or biofiltration media and vegetation (Wetland). These areas are intended to hold water, although the extent of coverage will vary and no excavations within their extent is to be undertaken as part of standard operations at the site.

Services trenches have been lined with marker layer and backfilled with clean material such that any works undertaken within the established trenches will not encounter potentially contaminated materials.

**Figure 3** below presents the conceptual site model following remediation.

The surveyed position of the marker layer, including the services trenches, and depth of soil overlying the marker layer is included in **Attachment A**.

Installation of the capping material was conducted under level 1 geotechnical supervision to ensure that adequate compaction was achieved.

No intention to remove capping material is proposed at the time of writing. The capping material will be considered suitable for re-use on site, should this be required, however if material is surplus to site requirements it will need assessment for use or disposal off site in accordance with the NSW EPA resource recovery and waste framework.

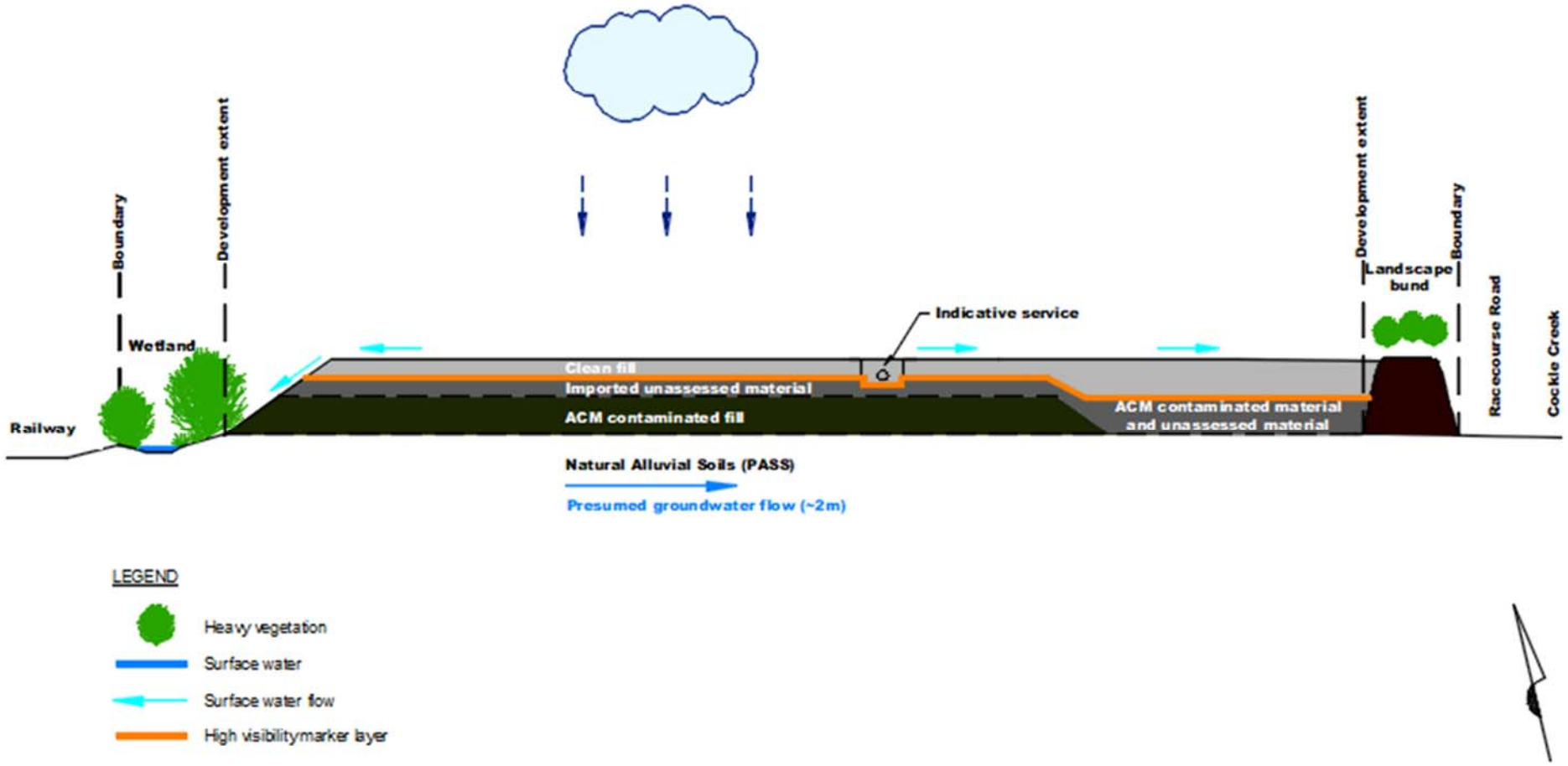



**Figure 3** *Post remediation conceptual site model*

### 6.1 ACID SULFATE SOILS

There has been no change in the status of the in-situ soils and the potential oxidisation of soils during disturbance will have to be managed accordingly should disturbance or excavation to such depths are required. The existing ASSMP (Ref [2]) is to be referred to in the first instance however, depending on the scale of works, its scope may not be sufficient and a more specific ASSMP may have to be compiled in accordance with the guidelines (Ref [10]).

### 6.2 EXPOSURE PATHWAYS

Prior to remediation the potential exposure pathways for soil contamination at the site comprised:

- Inhalation of asbestos fibres.
- Inhalation of odours and dust.
- Dermal contact / ingestion.
- Oxidisation of potential acid sulfate soil and impacts to the environment from acid leachate if natural soils were disturbed.

There was furthermore potential for detrimental aesthetic impact due to sighting of anthropogenic waste material, although given the commercial and the then heavily vegetated nature of the site this is not considered significant. There was not considered to be potential for the inhalation of vapours based on the absence of volatile hydrocarbons although given the heterogeneity of the fill material the potential could not be entirely discounted however as the site was not actively used and there were no structures at the site the potential was not considered significant.

Negligible risk from groundwater was considered due to the absence of contamination with the exception of zinc and, to a lesser extent, hydrocarbons and chromium, and as there was no known use of groundwater in the area. Analysis of groundwater did indicate that it was not suitable for discharge to marine or fresh water environments without treatment. The risk to Cockle Creek was not considered significant on the small volume of groundwater discharge compared to the normal, and tidal, flow of the Creek.

Post remediation, due to the presence of generally at least 0.5m of compacted capping material over sequestered material within the site there are no active exposure pathways for inhalation (asbestos fibres, odours, dust, hazardous ground gasses), dermal contact or ingestion related to soil contamination. The potential for aesthetic impacts from anthropogenic waste material has also been removed by the sequestration of the material below the cap. Levels were increased in the area within the site and groundwater has been subsequently measured to be greater than 2m below the surface.

Pathways may be created if works are undertaken such that the capping material is penetrated or removed by ground disturbance works only. Failure of the capping is considered to be limited to some natural disasters (such as earthquakes) which are not common in the location of the site.

Pathways for the oxidisation of potential acid sulfate soil remain if excavation is conducted below the marker layer.

### 6.3 REMAINING RISK

Based on the contamination status as discussed in the earlier subsections above, the aspects, remedial measures and potential exposure pathways are summarised in **Table 2** below.

**Table 2** *Aspect and Contaminants of Concern Following Remediation*

| Aspect | Remediation Measure | Potential Exposure Routes |
|---|---|---|
| Contaminated (Soil) Material | Contaminated and potentially contaminated material is now beneath the high visibility marker layer and no less than 0.5m compacted material across the site across the majority of the site.<br>The depth of fill above the marker layer is shown on the survey plan provided in **Attachment A**.<br>A lesser capping is presented within the Leachate Pond, Wetland and Sediment Dam 2; the extent hasn't been formally surveyed however geomembranes and marker layers are situated over the potentially contaminated surface. The layers have then been covered with a thin layer of recycled aggregate / biofiltration media.<br>There is some uncertainty about the extent of marker layer and capping in the north east corner of the site (refer **Attachment A**).<br>No capping has been placed within the wetland to the west of the western boundary fence. | Negligible for workers, subcontractors and visitors providing management controls are adhered to and the capping layer is maintained.<br>In the event that maintenance works require excavation beneath marker layer or in the north eastern corner of the site exposure routes are considered to be inhalation of fibres/dust/hazardous ground gasses, ingestion of dust/soil, dermal contact with soil. Risks likely only related to persons engaged in excavation unless dust is significant and migrates away from area of works. Such works would be considered non-standard operations for the purpose of management as detailed in **Section 7.2**.<br>Noting that any works in the wetland to the west of the western boundary will require regulatory approval, excavations or disturbance of soil outside the fence are to be undertaken on the presumption asbestos may be present. |
| Capping Material | Material verified as suitable for use prior to using as capping material. | None with regards to contamination. |
| Groundwater | Nil.<br>Previous assessment did not identify contamination within the groundwater at levels that pose a risk to human health. | None with regards to contamination unless extracted. |
| Surface Water and ponding of surface water at site | Depth and installation of suitably verified capping layer limits potential interaction of surface water runoff and mobilisation of contaminants/ transportation of contaminated material.<br>Site grading has facilitated the capture of all surface water in the Leachate Pond and/or Sediment Dam 2. | Nil except for workers undertaking activities associated with the ponded water, noting that any contamination would be related to site activities rather than in-situ contamination. |
| Imported Soil | No soil imported for the use as fill.<br>Construction materials were verified as suitable for use prior to importation. | None with regards to contamination. |

Therefore, following the remediation there is no risk to human health or the environment during the standard use of the site providing the marker layer and overlying capping coverage remains in place.

# 7 MANAGEMENT ACTIVITIES

## 7.1 MANAGEMENT STRUCTURE

As the operator of Resource Recovery Facility, Concrush Pty Ltd will be responsible for the implementation, maintenance and currency of this LTEMP however other parties will also bear some responsibility as detailed in **Table 3**. Any new lessees of the Resource Recovery Facility, or in the absence of those the owner of the site, will be required to accept responsibility for the site's ongoing management.

The controls listed in this LTEMP must be followed to ensure the protection of human health and the environment from potential risks associated with the sequestered soils. Non-compliance with this LTEMP may result in increased exposure to contamination and an unacceptable risk to human health and/or the environment. Prosecution for illegal/inappropriate handling of contaminated material may also result.

This LTEMP is specific to contamination and will be managed by Concrush as part of the Operational Environmental Management Plan (OEMP, Ref [11] as updated) in accordance with SSD Approval conditions C5 and C7. Tasks will be allocated to specific personnel as considered most appropriate to their current tasks and capabilities.

It is the responsibility of Concrush Pty Ltd to ensure that maintenance workers and other contractors affected by this LTEMP are notified of the contamination status of the site, and are provided with a current copy of this LTEMP prior to commencing any ground disturbance works.

It is the responsibility of Concrush Pty Ltd to ensure that any personnel undertaking any works have risk assessments undertaken and controls implemented whilst the works are being performed.

The responsibilities and relevant stakeholders with regards to the management, including those of regulators, are detailed in **Table 3** below.

**Table 3** *Stakeholder Responsibilities for this LTEMP*

| Organisation | Relevant Contact Details | Responsibility |
|---|---|---|
| Lake Macquarie City Council | 02 4921 0333 | Inclusion of this LTEMP, as well as Site Audit Statement, onto the Section 10.7 Certificate for the site such that future owners are aware of the document's existence. |

| Organisation | Relevant Contact Details | Responsibility |
|---|---|---|
| Concrush Pty Ltd | Kevin Thompson | Co-ordination with Council such that the Section 10.7 Certificate is amended to include this LTEMP.<br>Overall responsibility for the implementation of this LTEMP.<br>Ensuring that appropriate site personnel, subcontractors and visitors have been informed of the requirements of the LTEMP relevant to their site attendance.<br>Ensuring that the LTEMP is reviewed and updated as appropriate (refer **Section 8**).<br>Undertaking any rectification as required in accordance with **Section 7.4**.<br>Undertaking such management requirements that fall within the capacity and capability of their personnel.<br>Ensuring that appropriate contractors are engaged to undertake management requirements outside the capacity and capability of site personnel.<br>Providing details of this LTEMP to personnel and contractors whose activities may require actions in accordance with this LTEMP.<br>Ensuring that all workers associated with areas managed by this LTEMP have prepared appropriate WHS and environmental documentation as required by this LTEMP (refer **Section 7.2**). |
| Concrush personnel and contractors whose duties relate to areas managed by this LTEMP | Dependent on works being undertaken: to be provided prior to commencement of any works.<br>Contacts to be provided for within standard operational hour and outside of standard operational hours. | Implementation of the relevant management measures and reporting as appropriate from the LTEMP during the undertaking of their duties.<br>Taking into consideration the potential environmental and human health effects from the contamination identified in this LTEMP when undertaking works.<br>Identifying any issues with the LTEMP based on encountered issues or perceived deficiencies. |
| Contaminated Land Consultant | RCA Australia<br>02 49029 200 | Providing assistance with the assessment and management measures as requested by Concrush, delegate(s) and/ or contractors.<br>Identifying any need to revise the LTEMP in accordance with the aspects identified in **Section 8**.<br>Consulting with the NSW EPA accredited contaminated sites auditor or Lake Macquarie City Council as considered warranted or as otherwise required by this LTEMP.<br>Revising the LTEMP as necessary and co-ordinating with the NSW EPA accredited contaminated sites auditor where necessary for a formal update. |

| Organisation | Relevant Contact Details | Responsibility |
|---|---|---|
| NSW EPA accredited contaminated sites auditor | Ian Gregson,<br>GHD Pty Ltd<br>02 4979 9999 | Review of the LTEMP as part of the site audit required by SSD Approval condition B52.<br>In the event that revisions of the LTEMP require site auditor review: co-ordinating with the contaminated land consultant and reviewing the LTEMP where necessary for a formal update. |

### 7.2 TRAINING AND AWARENESS

An overview induction will be given to all site personnel and contractors which specifies the presence of the marker layer, its location and the notification procedure should any defects or issues arise.

A register of all inductions will be kept which include details of the inductee and inductor; an indicative register is included in **Attachment C** noting that the form may be adjusted somewhat by Concrush Pty Ltd or delegate(s) to be in an appropriate format.

A more detailed induction is required for Concrush Pty Ltd management staff and contractors / workers who are undertaking excavation works within the areas relevant to this LTEMP. The site induction will include:

- Site familiarisation.
- Overview of the requirements of this LTEMP.
- Legal requirements.
- Environmental responsibilities.
- Identification and safe handling of, and suitable control measures for, asbestos and ACM.
- Environmental incident reporting, management and emergency response.
- Site environmental controls.

### 7.3 OPERATING PROCEDURES

Remediation works at the site have improved the site's condition with the installation of a marker layer and adequate capping layer. It is considered that these works have negated the potential exposure risk during standard operations for commercial land use (HIL 'D' as specified within the ASC NEPM, Ref [7]).

The following sections detail what this LTEMP considers to be standard operations; non-standard operations, exposure risk and considerations which should be taken into account prior to subsurface disturbance within the site.

#### *7.3.1 STANDARD OPERATIONS*

Standard operations include commercial land use as per **Figure 2** and maintenance activities for which activities occur within the capping layer (<0.5m below the surface or within existing services trenches) and do not compromise or penetrate the marker layer. It is envisaged that standard operations will include:

- Vehicular and pedestrian traffic by customers depositing or picking up materials.
- Plant movement undertaking the activities associated with Concrush operations.

- Personnel movements between the various activity stations at the site.
- Vehicle parking.
- Landscaped area maintenance including weeding, pruning and watering.
- Excavations into established services trenches to undertake maintenance of installed services or install new services.
- Excavations of less than 0.5m below the surface to install new services and / or maintain drainage lines.
- Removal of accumulated product as part of maintenance works.
- Maintenance of the pump transferring water from the Leachate Pond to the Wetland.
- Extraction of water within Sediment Pond as required to apply at the site for dust suppression.

Standard operations are considered to apply during general occupancy of the site. The hardstand material and landscaped areas, as well as the water management structures, are considered to provide a robust barrier which removes an exposure pathway. The landscaped areas will likely require sporadic maintenance to remove weeds, prune trees and to supplement rainfall by watering of plants however these activities are not considered likely to require disturbance of soil at depths of greater than 0.5m.

During standard operations and whilst the cap and marker layer remain well maintained, the risk of human contact with contaminated media are minimal and the risk of inhalation, ingestion, and/or dermal absorption are considered negligible.

Standard operation activities do not require the implementation of additional management controls, however if the capping layer is penetrated, damaged or removed as part of shallow ground disturbance, the capping layer must be reinstated at the completion of works with the area barricaded off from workers and visitors during works. Works which may interact with the marker layer or underlying impacted material are considered to be defined as “non-standard operations” and will require thorough consideration of the potential impact to sensitive receptors at the site and schedule work hours and/or establish exclusion zones as part of exposure risk mitigation: refer to **Section 7.3.2** for further details.

### *7.3.2 NON-STANDARD OPERATIONS*

The frequency of these activities occurring is lower however the inherent consequence without effective management control is potentially high. Excavations that occur under the marker layer for any purpose present the risk of human contact with asbestos containing materials, contaminated soil, dust and groundwater. The human exposure pathways of inhalation of fibres/dust, ingestion and/or dermal contact are considered potentially significant.

There is potential for contaminated material to generate an environmental exposure pathway to air by way of dust, and to surface water. The risk increases if the water table is encountered and/or the works introduce significant volumes of water. Exposure pathways to surface soil, sediment transport and surface water can be generated from stockpiled contaminated material, machinery and equipment and in the event of works involving dewatering.

In addition to the standard activities described above, non-standard operational use of the site may occur and are defined by this LTEMP as ‘infrequent’ activities that occur at or below the marker layer. This may comprise:

- Installation of new underground services below the marker layer outside of the existing trenches.
- Installation of infrastructure (lighting, fencing), or any other excavations that breach the marker layer.

There further is the potential for unforeseen activities / events which result in damage to the capping layer.

Non-standard operations must be conducted in adherence to the controls outlined in the relevant operating procedures provided in **Attachment B**. Any changes that occur to the marker layer, capping layer, installation of sub-surface infrastructure or similar during non-standard operations need to be documented, with this LTEMP revised and reissued as necessary following the works. The document status table at the front of this document should be updated with a summary of the changes made following each revision. The relevant Concrush personnel, should inspect the area following the completion of works to ensure that the marker layer and cap have been adequately reinstated and to ensure that all required information for the purposes of this LTEMP are documented.

It is noted that acid sulfate soils are present in the natural soils at the site. Consideration of the possibility to encounter potential acid sulfate soil should be undertaken prior to works commencing as per **Section 6.1**.

Should groundwater be encountered during non-standard operations and require extraction, consideration of the disposal options and sourcing of any required equipment nd / or testing of groundwater quality should be undertaken prior to extraction being undertaken.

Should inclement weather be encountered during non-standard operations, water may enter and pond in excavations which may mobilise and accumulate contaminants. This should be taken into consideration for workers during these activities and should dewatering be considered.

Future imported soil will require certification prior to arrival at site.

#### *7.3.3 WORK HEALTH AND SAFETY (WHS)*

Contamination within the site presents a risk to the environment and human health if exposed. A detailed WHS Plan must be prepared prior to the commencement of any works which will potentially disturb the soil beneath the cap. Specifically, the WHS controls related to minimising the risk are:

- Ensuring all personnel are informed of the contamination present at the site and have received appropriate training as per **Section 7.2**.
- Restriction of exposure to contamination:
    - Minimising dust generation / inhalation through implementation of the best practice controls.

  - Personal protective equipment (PPE) requirements should be determined on the basis of risks associated with the activities to be carried out and in accordance with relevant WHS regulations and codes of practice. Personnel associated with any works which cause dust generation during disturbance or handling material within the site may require masks to reduce inhalation of asbestos fibres and dust. Personnel operating machinery with closed door/ windows and utilising recycled air-conditioning are not required to wear masks however should have these available for contingency purpose.
  - No smoking on site prior to the completion of capping replacement.
  - Hygienic principles of washing hands and face prior to consuming food and drink.
- Ensuring that plant and equipment is operated only by those with appropriate licences / permits.
- Co-ordinating activities at the site to avoid conflict between plant / equipment and personnel / visitors in light vehicles or on foot.
- Implementing best practice controls for control of noise and erosion control.
- Contingency planning.

### 7.4 MONITORING OF SITE CONDITIONS

No further monitoring of the site is required specific for remediation / contamination with the exception of conducting inspections as per below. Monitoring is required for operational compliance and is to be managed as part of the OEMP (Ref [11] as updated) in accordance with SSD Approval conditions C5 and C7.

Inspections should be conducted at the site at the following frequencies:

- Daily inspections of the water level of the Leachate Pond and consideration of any rainfall or extraction undertaken. Any unexplained decrease in level is to be investigated as specified within **Section 8.2**.
- Monthly inspections of the Leachate Pond and constructed Wetland to identify any instance of geomembrane exposure. If geomembrane is sighted exposed, the measures specified within **Section 8.2** must be followed.
- Monthly inspections of the small area in the north eastern corner of the site where the extent of the marker layer is unconfirmed. If excessive wear or damage is found to be occurring, the measures specified within **Section 8.2** must be followed.
- Quarterly inspection of hardstand area for a minimum of one (1) year; providing that it can be shown that wear or damage to the capping surface or thickness is no more than negligible the frequency can be reduced to annually. If excessive wear or damage is found to be occurring, the measures specified within **Section 8.2** must be followed.

Further inspections are to be undertaken following works which disturb the marker layer and significant rainfall events (>25mm in a twenty four hour period).

Any deficiencies in the capping, such as cracking, erosion rills, slumping of material and any visual sighting of the marker layer are to be reported, refer an indicative form in **Attachment C**, to the relevant personnel for rectification.

### 7.5 APPROVAL AND LICENSING CONDITIONS

There is no specific requirement for the implementation as per this LTEMP within the SSD 8753 approval however Condition B52 requires the preparation of a site audit statement (SAS) and this LTEMP is required to facilitate the preparation of the SAS.

Following the acceptance of this LTEMP as being appropriate for the management of the remaining contamination issues at the site as part of the site audit process, the document will be incorporated into the OEMP (Ref [11] as updated) compiled in accordance with SSD Approval condition C5 and subsequently implemented in accordance with SSD condition C7(b). No further approvals are required for the implementation of the LTEMP except in case of review, refer **Section 8**.

No licenses are required for the operation of this LTEMP however the implementation of the LTEMP may be incorporated in the Concrush EPL by the NSW EPA.

### 7.6 REPORTING REQUIREMENTS

Reporting required as part of this LTEMP comprise those following the completion of works (refer **Section 7.2**) and inspections (refer **Section 7.4**).

Reports will be written by personnel undertaking the works / inspections and will be provided to the relevant Concrush personnel (refer **Table 3**) as soon as practicable from completion of works. The timing will vary depending on the scale of the works however it is considered that one week will be sufficient for most works (as per **Section 7.2**) and one day will be sufficient for results of inspections (refer **Section 7.4**).

An example of an inspection template relevant to the site is provided in **Attachment C**. Reports may be variable based on the specific works (operating procedures in **Attachment B** provide more specific requirements dependent on the type of work), however will need to include at least, but may not be limited to, the following information:

- Date and specific location and extent of the works undertaken.
- Reason for works being undertaken.
- Specifying whether the marker layer was sighted, if works were conducted above or below the marker layer. Photographs are to be included.
- Assessment of material from below the marker layer prior to any use above the marker layer or disposal offsite.
    - In the event that material is removed from site, material tracking records such as a loading sheet, truck dockets and a receival record (may also be dockets) must be retained to facilitate review by regulatory authority if undertaken.
- Any unexpected finds (refer **Attachment D**).
- Certification that any material imported for the purpose of fill has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken.
- Details of any changes/ reinstatement of the marker layer and capping layer. Any changes to be included with ‘As Constructed’ plans for future use.
- Surface condition at completion of works (include photographs).

Compilation of the report is the responsibility of the person(s) or contractor undertaking the works.

Reports are to be provided to relevant Concrush personnel, with this LTEMP revised and reissued as necessary following the works. The document status table at the front of this document should be updated with a summary of the changes made following each revision.

### 7.7 COMMUNICATIONS PROTOCOL

As this LTEMP is passive and will be managed solely by Concrush Pty Ltd, it is not considered that a formal Communications Protocol for 3rd parties outside of Concrush operations is required. Notifications on publicly available documentation (such as Section 10.7 planning certificate) will be undertaken and the existence and requirements of this LTEMP will be communicated to relevant personnel as detailed in **Section 8**.

### 7.8 CONTINGENCY

Where groundwater monitoring identifies the presence of contamination in the groundwater consistent with potential breach of the Leachate Pond / Wetland, rectification of the linings may be required.

Where standard activities, non-standard activities, or routine inspections identify inadequate marker layer, capping layer and/or poor vegetation cover (where applicable) mitigation works will need to be conducted promptly to rectify.

Cracking, subsidence or uneven settlement of the site would trigger the requirement for maintenance in the form of replacing or improving the capping layer with suitable clean material: geotechnical investigation into the defects may also be required if the reason for the issue is not known.

Where geomembrane is sighted exposed, material is to be placed over it and consideration of the cause (such as water flow, wind, poor replacement after works) of the exposure undertaken and efforts undertaken to minimise likelihood of reoccurring. Mitigation works will need to be conducted promptly to rectify as the geomembrane loses integrity when exposed to sunlight. Replacement of a section of geomembrane may be required; the installation is to be recorded by a photographic log with specific emphasis on the joins with the existing material.

Works are to be undertaken in accordance with the relevant operating procedure provided in **Attachment B**. This should be treated as an incident and corrective actions may be triggered to prevent reoccurrence.

This LTEMP has sought to address all management measures that could foreseeably arise as part of the operations of the site. If at any stage the LTEMP does not adequately cover a situation encountered at site:

- Any operational work is to cease.
- Relevant nominated Concrush personnel is to be advised of the issue(s).
- A suitably qualified environmental consultant is to be contacted for advice. A geotechnical consultant may also be required depending on the issue.
- A NSW EPA accredited contaminated sites auditor is to be advised, or contacted for advice if recommended by the consultant, of the issue and how the issue was addressed along the principles of the LTEMP.

An unexpected finds protocol detailing the process is provided in **Attachment D**: this is to be available for personnel and subcontractors as appropriate for the extent of works.

In the event that site management protocols fail, the following is to be undertaken:

- Investigate the cause.
- Record the results.
- Assessment of whether human health or the environment were harmed and further steps as considered necessary.
- Corrective action raised by relevant nominated Concrush personnel or delegate (such as consultant appropriate for the issue(s)).
- Notification to affected persons and/or relevant authorities if exposure to contamination has occurred.
- Incorporate procedures for corrective or preventive action.
- Revision of LTEMP by an appropriately qualified environmental consultant to address the non-compliance or major changes to this LTEMP. Control document update and distributed to registered holders of LTEMP.

Any changes to the area under management of this LTEMP will need to be documented, with this LTEMP revised and reissued as necessary following the works. Changes to the LTEMP is to be reviewed by a NSW EPA accredited contaminated sites auditor.

# 8 MAINTENANCE, REVIEW & COMMUNICATION OF LTEMP

SSD Approval condition C16 specifies the requirement for an independent review of, amongst other things, any approved strategy, plan or programme required by the consent. While the LTEMP is not specifically required by any condition, as it is required to facilitate the SAS it is considered to be required by the SSD Approval. As it will be incorporated into the OEMP (Ref [11] as updated) as stated in **Section 7.5** above the LTEMP adequacy and implementation will be subject to the independent review as required by SSD Approval condition C16.

## 8.1 RECORD KEEPING

Reporting may be required in accordance with this LTEMP for:

- Inspection records which indicate that there are structural issues identified with the capping layer or geomembrane.
- Rectification of integrity of the site cap following non-standard operations (refer **Section 7.3.2**).
- Contingency items.

These records are to be included with the LTEMP if there is no requirement to alter the LTEMP in response to the report. Where the LTEMP needs adjustment, a contaminated land management consultant is to be consulted. Pending the advice of the contaminated land consultant, Concrush Pty Ltd or delegate(s) may have to contact the NSW EPA accredited contaminated sites auditor, NSW EPA or Council to provide information or seek consent / approval.

The Concrush Pty Ltd or delegate(s) shall be responsible for the maintenance of this LTEMP and shall be responsible for the inspection requirements as detailed in **Section 7.4**, and as required under operating procedures as included in **Attachment B**.

A record of non-standard operations conducted must be maintained with details of the works conducted. Complaints, incidents, notifications, inductions and non-compliances must also be maintained and periodically reviewed to evaluate the effectiveness and currency of LTEMP implementation.

### 8.2 CORRECTIVE ACTION

Failure to implement the Environmental Control Procedures detailed in the Operating Procedures (**Attachment B**) are all deemed 'environmental non-conformances'.

The nature and extent of the nonconformity is to be advised to relevant Concrush personnel or delegate(s) for evaluation of the significance of the nonconformity. The Contaminated Land Consultant is also to be consulted regarding potential impact to the LTEMP and suitability of the site: the Contaminated Land Consultant will advise the NSW EPA accredited contaminated sites auditor if the incident is considered relevant.

If necessary, subsequent and/or associated work is to be suspended pending review of the nonconformity.

Records of all incidents and/or corrective actions are to be maintained with the relevant version of this LTEMP at the time of the incident/corrective action and relevant Concrush personnel or delegate(s) is to update any relevant stakeholders affected by the stipulations of the LTEMP (i.e., letter or similar).

If corrective action is not considered adequate to prevent further occurrence, consideration is to be given to the need for remedial action: note all relevant parties will need to be informed during discussion.

### 8.3 DOCUMENT CONTROL AND REVIEW

The version of the LTEMP as referenced by the Site Audit Statement is the approved version. Amendments to this document can only be made as per the following:

- Logistical – allocated personnel for instance – can be made by Concrush Pty Ltd or delegate(s).
- Technical – change in management requirements – can only be made by a suitably qualified contaminated land consultant with the approval of a NSW EPA accredited contaminated sites auditor where any reduction in management requirements is proposed, or where otherwise considered necessary by the consultant.

The approved LTEMP shall remain in place indefinitely until such time as the relevant regulatory authority determines it is no longer required. It is noted that due to the contaminants sequestered, it is considered unlikely that the LTEMP will be able to be removed unless the material is wholly removed from the site: which is considered impractical.

Review of the LTEMP should be undertaken in conjunction with, and as part of, the independent environmental audit as required by SSD condition C16 required twelve (12) months after the incorporation of the site into the operation Concrush facility and then every three (3) years, unless an earlier review is trigged by any of the following:

- Material changes to legislative and regulatory requirements affecting the LTEMP, including those related to asbestos.
- Soil from below the marker layer is removed from site such that the extent of asbestos is altered.

- Changes to the ownership and/or responsibility of the site.
- Any major LTEMP non-conformance is detected in regards to the environmental controls and measures outlined in the LTEMP.
- The LTEMP measures are found (e.g., by means of inspection, incident or near miss) to be inadequate to address the health, environmental and asbestos management requirements for the site.

It is noted that clause 430(1e) of the WHS Regulation requires AMP to be reviewed at least every five (5) years if there has been no other requirement to review. The above review frequency is therefore considered to be in compliance with the WHS Regulation.

Documentation of the reason(s) for amending the LTEMP should include, but are not necessarily limited, to:

- The date of the change, whether amendment or addition.
- The extent of the change.
- The reason for the change.
- The person approving the change.
- If revision relates to ground disturbance and excavation of material; details regarding quantity, fate (i.e., returned to excavation, appropriate offsite disposal), and verification of works and marker/capping layer reinstatement (i.e., photo log or disposal dockets).

The document status table at the front of this document is to be updated with a summary of changes with each revision.

### 8.4 COMMUNICATION

The existence of the LTEMP will be included as part of the SAS and is to be submitted to the NSW Department of Planning and Environment (formerly Department of Planning, Industry and the Environment) as part of SSD 8753 Approval conditions. In accordance with Clause 279 of the Environmental Planning and Assessment Regulation 2021, Lake Macquarie City Council will record the existence of the Site Audit Statement in the Section 10.7 certificate relevant for part Lot 2 DP220347: this certifies that the site is suitable for the proposed use as part of the Concrush Resource Recovery Facility subject to the implementation of this LTEMP.

If the existence of the LTEMP is not included on the Section 10.7 planning certificate undertaken by Council it is the responsibility of Concrush Pty Ltd to notify Council such that the Section 10.7 certificate can be amended.

Revised versions of this LTEMP, as concurred by the NSW EPA accredited contaminated sites auditor, must be supplied by the entity organising the revision (Concrush Pty Ltd or delegate(s)) to the other responsible entity. A copy of the most up to date version must be provided to Council and kept on the site for implementation as required and personnel inducted in the implementation of the LTEMP provided information regarding the revision of the LTEMP and aspects of management which have been altered.

## 9 LIMITATIONS

This report has been prepared for Concrush Pty Ltd in accordance with an agreement with RCA Australia (RCA). The services performed by RCA have been conducted in a manner consistent with that generally exercised by members of its profession and consulting practice.

This report has been prepared for the sole use of the ongoing management of the site by Concrush Pty Ltd. The report may not contain sufficient information for other purposes. This report shall only be presented in full and may not be used to support objectives other than those stated in the report without written permission from RCA Australia.

The information in this report is considered accurate at the date of issue with regard to the conditions of the site at the time of compilation. RCA accepts no responsibility for keeping this LTEMP accurate to the conditions of the site unless RCA has specifically been engaged to do so.

Yours faithfully

**RCA AUSTRALIA**

Fiona Brooker
Manager of Environmental Services
(BEng(Env))

## REFERENCES


[1] RCA Australia, *Validation of Remedial Works, Expansion Component, Expansion of the Concrush Resource Recovery Facility, Teralba*, RCA ref: 13589-1001/1, March 2023.

[2] RCA Australia, *Acid Sulfate Soil Management Plan, Expansion of the Concrush Resource Recovery Facility, Teralba*, RCA ref: 13589-804/0, July 2020.

[3] Lake Macquarie Local Environment Plan 2014 under the Environmental Planning and Assessment Act 1979, as updated 22 January 2020.

[4] RCA Australia, *Remedial Action Plan, Proposed Concrush Facility Expansion, Racecourse Road, Teralba*, RCA ref: 13589-803/2, June 2020.

[5] Coffey Environments Australia Pty Ltd, *Soil Contamination Assessment – Proposed Industrial Subdivision, Racecourse Road, Teralba* NSW, 1 May 2013

[6] RCA Australia, *Baseline Contamination Assessment, Proposed Concrush Facility Expansion, Racecourse Road, Teralba, November 2018*, RCA 13589-401/3

[7] National Environment Protection Council (NEPC), *National Environment Protection (Assessment of Site Contamination) Measure*, 1999 as amended 2013.

[8] ANZG, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.,* August 2018. Available at www.waterquality.gov.au/anz-guidelines.

[9] RCA Australia, *Groundwater Management Plan, Expansion of the Concrush Resource Recovery Facility, Teralba*, RCA ref: 13589-805/1, September 2020.

[10] NSW Acid Sulfate Soil Management Advisory Committee, *Acid Sulfate Soil Manual*, August 1998.

[11] WSP, *Operational Environment Management Plan*, Rev B, June 2020.

## GLOSSARY

| | |
|---|---|
| ACM | Asbestos containing material(s). |
| AHD | Australian height datum, based on a mean sea level. |
| ASC NEPM | National Environment Protection (Assessment of Site Contamination) Measure. |
| LTEMP | Long-term environmental management plan. |
| HIL | Health investigation level. Relates to soil concentrations which may pose a risk to human health in soil. |
| Hotspot | A sample, or location, where contaminant concentrations exceed 250% of the appropriate criterion. |
| HSL | Health screening level. Relates to the vapour risk from petroleum hydrocarbons which may pose a risk to human health in soil. Also relates to exposure to asbestos fibres. |
| In-Situ | In place, without excavation. |
| ISL | Investigation screening levels for soil. Comprised of HIL/EIL and HSL/ESL |
| kg | kilogram, 1000 gram. |
| Leachate | Fluid that has passed through a soil stratum, possibly collects contaminants. |
| LEP | Local environment plan. A planning tool for the Local Government. |
| mg | milligram, 1/1000 gram. |
| NEPC | National Environment Protection Council. |
| NHMRC | National Health and Medical Research Council. |
| NSW EPA | NSW Environment Protection Authority – formerly a component of DECC, DECCW, OEH but made a separate entity in 2011 to regulates the contaminated land industry. |
| OEH | NSW Office of Environment and Heritage. |
| PPE | Personal Protective Equipment. |
| PQL | Practical Quantitation Limit. |

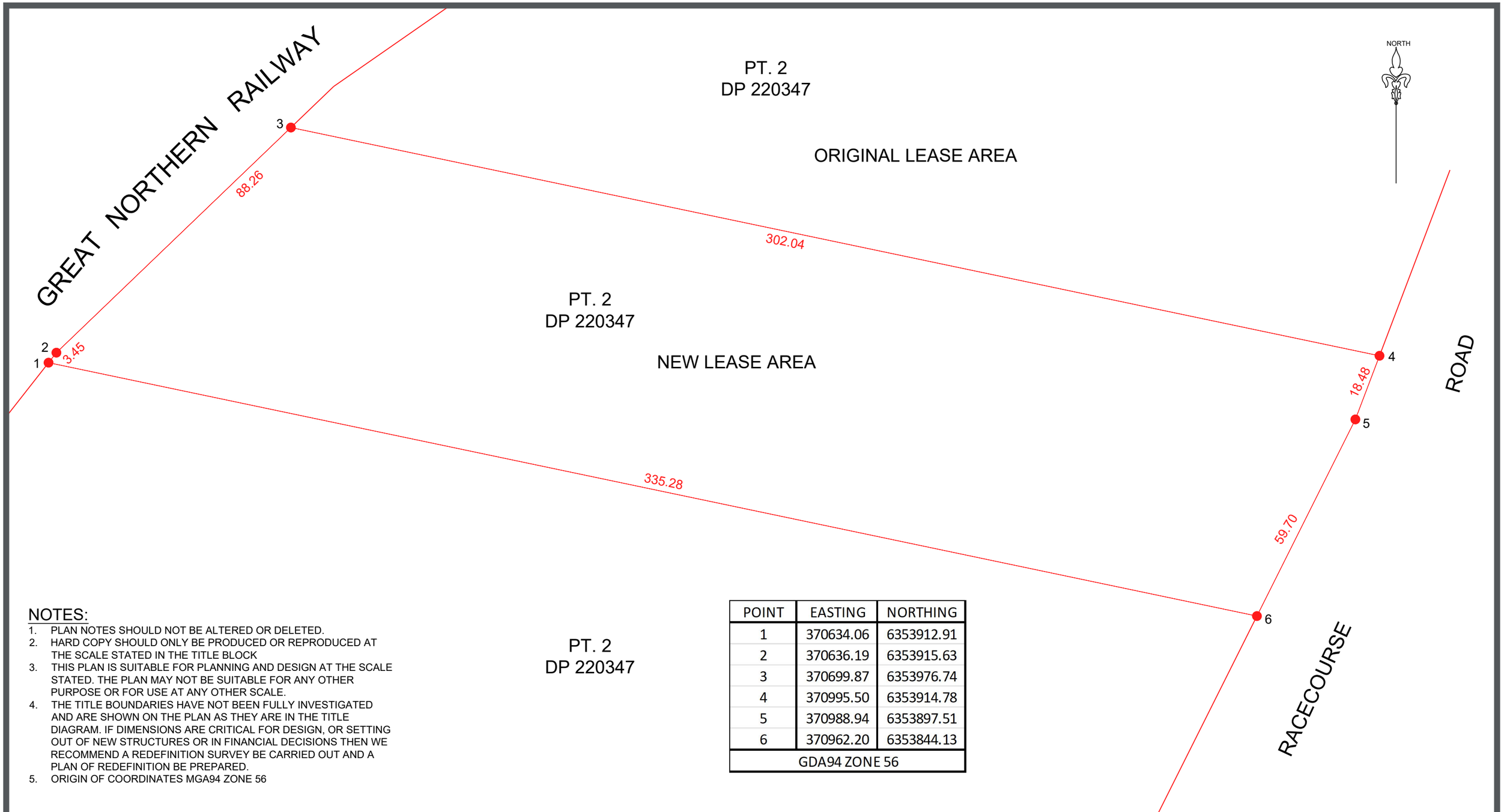
| | |
|---|---|
| VENM | Virgin excavated natural material. |
| Weathering | All physical and chemical changes produced by atmospheric agents. |

Chemical Compounds

| | |
|---|---|
| TRH | Total recoverable hydrocarbons. |
| PAH | Polycyclic aromatic hydrocarbons. |

# Attachment A

Extent of Marker Layer and Depth of Capping
Above Marker Layer
(as surveyed)




PT. 2
DP 220347

| POINT | EASTING | NORTHING |
|---|---|---|
| 1 | 370634.06 | 6353912.91 |
| 2 | 370636.19 | 6353915.63 |
| 3 | 370699.87 | 6353976.74 |
| 4 | 370995.50 | 6353914.78 |
| 5 | 370988.94 | 6353897.51 |
| 6 | 370962.20 | 6353844.13 |
| GDA94 ZONE 56 | | |

## NOTES:

1. PLAN NOTES SHOULD NOT BE ALTERED OR DELETED.
2. HARD COPY SHOULD ONLY BE PRODUCED OR REPRODUCED AT THE SCALE STATED IN THE TITLE BLOCK
3. THIS PLAN IS SUITABLE FOR PLANNING AND DESIGN AT THE SCALE STATED. THE PLAN MAY NOT BE SUITABLE FOR ANY OTHER PURPOSE OR FOR USE AT ANY OTHER SCALE.
4. THE TITLE BOUNDARIES HAVE NOT BEEN FULLY INVESTIGATED AND ARE SHOWN ON THE PLAN AS THEY ARE IN THE TITLE DIAGRAM. IF DIMENSIONS ARE CRITICAL FOR DESIGN, OR SETTING OUT OF NEW STRUCTURES OR IN FINANCIAL DECISIONS THEN WE RECOMMEND A REDEFINITION SURVEY BE CARRIED OUT AND A PLAN OF REDEFINITION BE PREPARED.
5. ORIGIN OF COORDINATES MGA94 ZONE 56

20 10 **0** 20 40 60 80 100

SCALE IN METRES ON ORIGINAL DRAWING AT REDUCTION RATIO 1:1000

CADENCE CONSULTING SURVEYORS
UNIT 3, 73a ELIZABETH STREET,
TIGHES HILL, NSW 2297
P.O.BOX 2367, DANGAR NSW 2309
PH 02 4925 0500 FAX 02 4927 8850

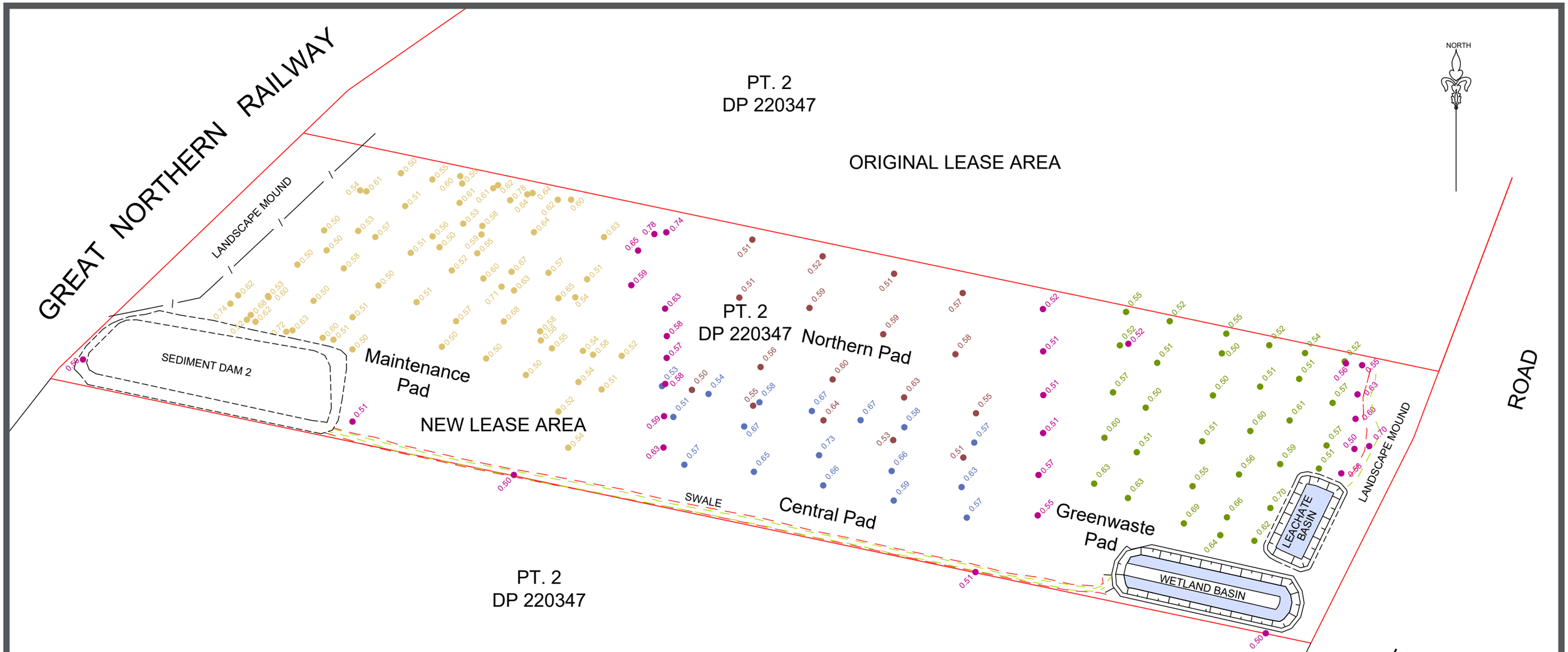
BOUNDARY PLAN OF
LOT 2 DP 220347
CONCRUSH
RACECOURSE RD, TERALBA

ORIGIN OF LEVELS: PM37993
ORIGIN OF COORDS: PM37993
CONTOUR INTERVAL: N/A
SURVEY COMPLETED: N/A
SURVEYED BY: CCS
SURVEY FILE: N/A

SCALE: 1:1,000 (A3)
JOB REF: CCS-1811
DWG FILE:
1811_DWG_SITEWIDE
BDY-1A
SHEET 1 OF 1

| REV | AMENDMENTS | DATE | DWN | CHK | PM |
|---|---|---|---|---|---|
| A | FIRST ISSUE | 08/08/22 | MT | MD | MD |

EXCAVATOR/CONTRACTOR/BUILDER MUST CONTACT 'DIAL BEFORE YOU DIG' BEFORE COMMENCING WORK ON SITE.
DIAL 1100 BEFORE YOU DIG
ISO 9001

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## LEGEND

| | | |
|---|---|---|
| 0.50 | CENTRAL PAD DEPTHS | SURVEYED 10/11/2021 |
| 0.50 | NORTHERN PAD DEPTHS | SURVEYED 24/02/2022 |
| 0.50 | GREENWASTE PAD DEPTHS | SURVEYED 18/03/2022 |
| 0.50 | MAINTENACE PAD DEPTHS | SURVEYED 08/06/2022 |
| 0.50 | INFILL DEPTHS | SURVEYED 18/07/2022 |

20 10 **0** 20 40 60 80 100

SCALE IN METRES ON ORIGINAL DRAWING AT REDUCTION RATIO 1:1000

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TIGHES HILL, NSW 2297
P.O.BOX 2367, DANGAR NSW 2309
PH 02 4925 0500 FAX 02 4927 8850

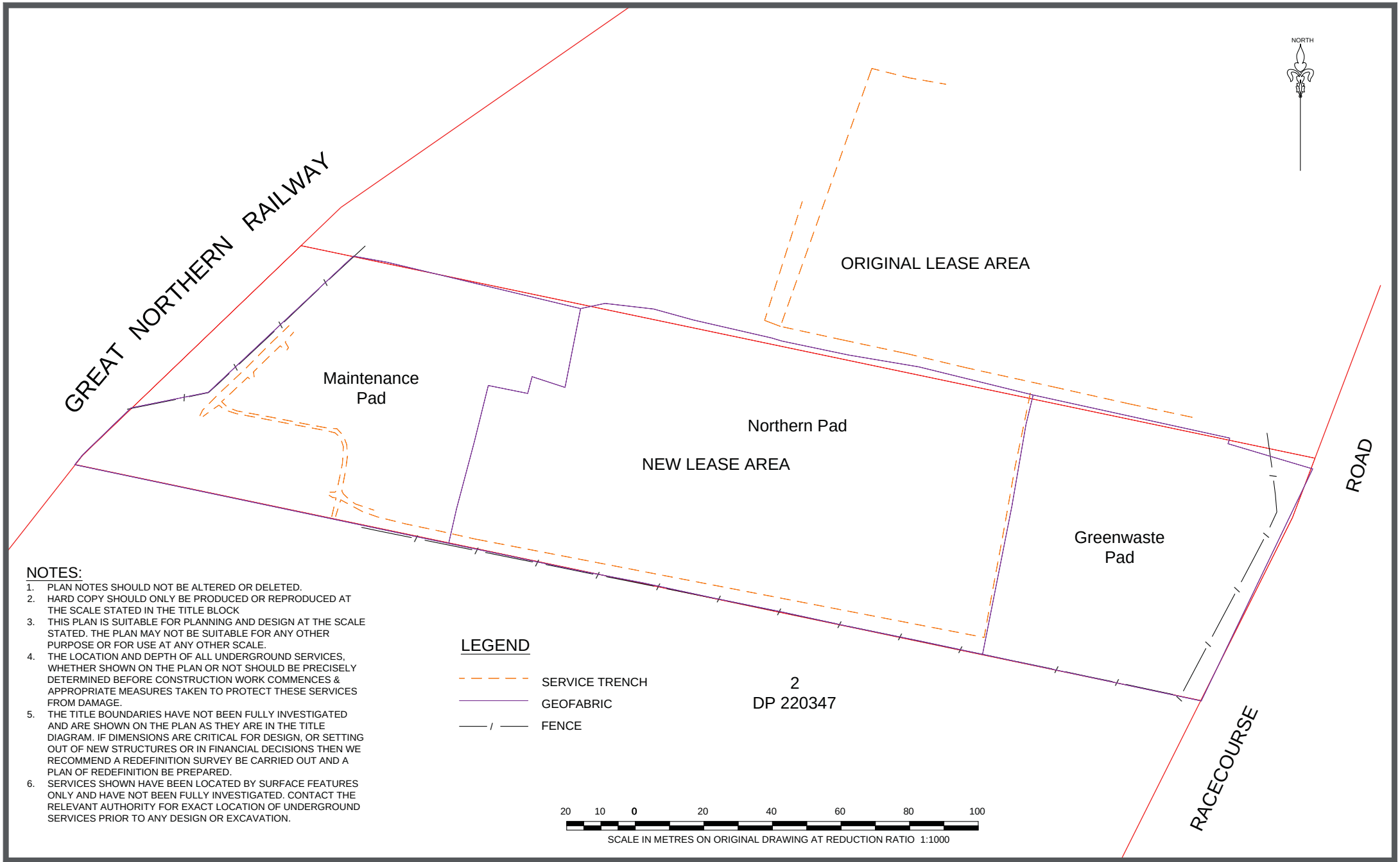
PAD DEPTH
LOT 2 DP 220347
CONCRUSH
RACECOURSE RD, TERALBA

ORIGIN OF LEVELS: PM 37993
ORIGIN OF COORDS: PM 37993
CONTOUR INTERVAL: N/A
SURVEY COMPLETED: 08/06/2022
SURVEYED BY: JB, MT, SB
SURVEY FILE:

SCALE: 1:1,000 (A3)
JOB REF: CCS-1811
DWG FILE:
1811_DWG_DEPTH
SITEWIDE-1C
SHEET 1 OF 1

| REV | AMENDMENTS | DATE | DWN | CHK | PM |
|---|---|---|---|---|---|
| A | FIRST ISSUE | 10/06/22 | MT | MD | MD |
| B | INFILL DEPTHS ADDED | 19/07/22 | MT | MD | MD |
| C | SOUTHERN DEPTHS ADDED | 08/08/22 | MT | MD | MD |

EXCAVATOR/CONTRACTOR/BUILDER MUST CONTACT 'DIAL BEFORE YOU DIG' BEFORE COMMENCING WORK ON SITE.
DIAL 1100 BEFORE YOU DIG
IAS-NZ
BSI
ISO 9001

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3. THIS PLAN IS SUITABLE FOR PLANNING AND DESIGN AT THE SCALE STATED. THE PLAN MAY NOT BE SUITABLE FOR ANY OTHER PURPOSE OR FOR USE AT ANY OTHER SCALE.
4. THE LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES, WHETHER SHOWN ON THE PLAN OR NOT SHOULD BE PRECISELY DETERMINED BEFORE CONSTRUCTION WORK COMMENCES & APPROPRIATE MEASURES TAKEN TO PROTECT THESE SERVICES FROM DAMAGE.
5. THE TITLE BOUNDARIES HAVE NOT BEEN FULLY INVESTIGATED AND ARE SHOWN ON THE PLAN AS THEY ARE IN THE TITLE DIAGRAM. IF DIMENSIONS ARE CRITICAL FOR DESIGN, OR SETTING OUT OF NEW STRUCTURES OR IN FINANCIAL DECISIONS THEN WE RECOMMEND A REDEFINITION SURVEY BE CARRIED OUT AND A PLAN OF REDEFINITION BE PREPARED.
6. SERVICES SHOWN HAVE BEEN LOCATED BY SURFACE FEATURES ONLY AND HAVE NOT BEEN FULLY INVESTIGATED. CONTACT THE RELEVANT AUTHORITY FOR EXACT LOCATION OF UNDERGROUND SERVICES PRIOR TO ANY DESIGN OR EXCAVATION.

LEGEND

- SERVICE TRENCH
- GEOFABRIC
- FENCE

20 10 0 20 40 60 80 100

SCALE IN METRES ON ORIGINAL DRAWING AT REDUCTION RATIO 1:1000

CADENCE CONSULTING SURVEYORS
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TIGHES HILL, NSW 2297
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PH 02 4925 0500 FAX 02 4927 8850

SERVICE TRENCH AND GEOFABRIC
LOT 2 DP 220347
CONCRUSH
RACECOURSE RD, TERALBA

ORIGIN OF LEVELS: PM37993
ORIGIN OF COORDS: PM37993
CONTOUR INTERVAL: N/A
SURVEY COMPLETED: N/A
SURVEYED BY:
SURVEY FILE:

SCALE: 1:1,000 (A3)
JOB REF: CCS-1811
DWG FILE:
1811_DWG_SERVICES-1A
SHEET 1 OF 1

| REV | AMENDMENTS | DATE | DWN | CHK | PM |
|---|---|---|---|---|---|
| A | FIRST ISSUE | 08/08/22 | MT | MD | MD |

EXCAVATOR/CONTRACTOR/BUILDER MUST CONTACT 'DIAL BEFORE YOU DIG' BEFORE COMMENCING WORK ON SITE.
DIAL 1100 BEFORE YOU DIG
ISO 9001

# Attachment B

Operating Procedures

| | | | |
|---|---|---|---|
| **OP Title** | **General Excavations** | | |
| **OP Number** | | **Date Issued** | |

**Purpose and Scope**

This procedure details the requirements for personnel undertaking excavation above the marker layer within the Expansion Component of the Concrush Resource Recovery Facility at 21 Racecourse Road, Teralba NSW.

Note that any works specifically being undertaken below the marker layer are to be undertaken in accordance with the relevant OP.

There are no potential risks from the contamination during excavations above the marker layer however there are risks if excavations are undertaken beneath the marker layer. Overtime, if excavations above the marker layer are not adequately re-instated, this could compromise the effectiveness of the capping layer and create an exposure pathway.

Excavation works have the potential to affect surface water.

**Procedure**

| | |
|---|---|
| **1** | Personnel to confirm that proposed depth of excavation is <0.5m below the surface or is within the extent of an established services trench. |
| **2** | This OP is not appropriate for situations where intended excavation depth will be below the depth of the marker layer. Refer to OP for 'Excavations Below Marker Layer'. |
| **3** | Principal Concrush personnel to be advised of excavation intentions and the applicability of this OP discussed. Any deficiencies to be addressed by a specific procedure. |
| **4** | The location of the excavation is to be identified and marked out on site. |
| **5** | Erosion control measures to be put in place to ensure no contamination of surface water. |
| **6** | Excavation is to be undertaken with a spotter observing for signs of the marker layer. If sighted, works are to stop and not continue past the marker layer unless under the OP for 'Excavations Below the Marker Layer'. |
| **7** | Soil above the marker layer is to be stockpiled for re-use at the completion of works. |
| **8** | Works are to be completed. If suspect material is sighted unexpectedly, works are to cease and not continue unless under the OP for 'Excavations Below the Marker Layer'. |
| **9** | It is considered unlikely for groundwater to be encountered, however, no dewatering of the excavation, or other form of groundwater discharge to the environment, is to be undertaken without an analytical assessment of the water quality and suitability. |
| **10** | Capping material is to be replaced above the marker layer and the thickness measured by survey if different from initial conditions. |
| **11** | Erosion control measures to be placed as appropriate after completion of works and/or vegetation to be replaced. |
| **12** | Report to be compiled including:<br>• Whether marker layer was sighted (include photographs).<br>• Extent of works undertaken.<br>• Certification that any material imported for the purpose of fill placement over the marker layer has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken.<br>• Thickness of capping above the marker layer. Any changes to be included with 'As Constructed' plans for future use.<br>• Surface condition at completion of works (include photographs) |
| **13** | Area to be inspected the following day and weekly until such time that area has rehabilitated. |

| | | | |
|---|---|---|---|
| **OP Title** | **Excavations below Marker Layer** | | |
| **OP Number** | | **Date Issued** | |

**Purpose and Scope**

This procedure details the requirements for personnel undertaking excavation below the marker layer within the Expansion Component of the Concrush Resource Recovery Facility at 21 Racecourse Road, Teralba NSW.

Excavations below the marker layer have the potential to encounter bonded (non-friable) asbestos containing materials, acid sulfate soil anthropogenic waste and hydrocarbon impacted soil material. Works also have the potential to encounter ground water.

**Procedure**

| | |
|---|---|
| **1** | Determine whether an alternative to the intended works can be undertaken to avoid excavation below the marker layer.<br>Where no alternative is possible, the applicability of this OP is to be discussed between principal Concrush personnel and personnel proposing to undertake the works. Any deficiencies to be addressed by a specific procedure.<br>The scope and risk of works are considered prior to commencement such that exclusion zones or scheduling outside of active hours are undertaken as necessary. |
| **2** | The following PPE is required to be work by all personnel:<br>• Long sleeve and long pants.<br>• Safety boots in accordance with Standard AS/NZS 2210.<br>• Gloves if manual handling of material will be required and impacted material disturbed.<br>Other task specific PPE may be required.<br>Masks specific for protection against inhalation of asbestos should be available for use if fragments identified.<br>The work area, including where stockpiles of excavated material may be placed, is to be barricaded off from access by anyone other than relevant personnel and must be covered. |
| **3** | The location of the excavation is to be identified.<br>If works are in relation to water supply / sewer / stormwater: flow to the pipe to be turned off/ redirected (if not already done so).<br>A water diversion is to be installed to direct surface water away from the excavation prior to breaking ground.<br>Consideration of the likelihood of encountering groundwater is to be undertaken; dipping of groundwater at the two (2) monitoring wells may assist. If groundwater likely to be encountered, the requirement for extraction to complete works is to be assessed and a plan to be derived that allows for the disposal of water such that it does not enter watercourses adjacent the site. Infiltration, pumping to a Sediment Dam which has sufficient freeboard to receive without discharging or removal by licensed waste contractor are likely to be the available options.<br>Consideration of the likelihood of encountering acid sulfate soil is be undertaken and the relevant Acid Sulfate Soil Management Plan (Ref [2] at time of writing) be referred to and appropriate actions implemented. A monitor capable of detecting, and sounding an audible alarm, methane and carbon dioxide is to be included in equipment used during excavation to provide assessment of hazardous ground gasses. |
| **4** | To the extent possible, excavation is to be limited to the required area and undertaken to avoid disturbing the marker layer to the extent possible.<br>Works to be undertaken taking care to disturb overlying soil as little as possible. |
| **5** | Soil above the marker layer is to be stockpiled for re-use at the completion of works. |

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| **6** | Where possible, the marker layer is to be left in-situ. If the marker layer is removed, deliberately or by accident, the layer is to be stored for re-use if in good enough condition.<br>Due to the requirement for overlap during placement, additional marker layer material may be required regardless of the intention to re-use and this should be considered prior to commencing the works. |
| **7** | Any material below the marker layer that is encountered is to be stockpiled separately to other material and placed such that it doesn't contaminant underlying material (e.g., on plastic, concrete / bitumen, in skip bin) and taking into account its acid sulfate soil properties (if relevant).<br>Material should be placed in an area which is not accessible to personnel not associated with the works or visitors to the site.<br>Erosion and sediment controls are to be employed around the stockpile, and water diversion controls should be considered if inclement weather is possible.<br>The stockpile should be covered to prevent dust generation. |
| **8** | Works to be completed. While free fibres of asbestos have not been detected, all works should be undertaken on the presumption that fibres may be present such that dust is minimised and exposure to dust is minimised.<br>Works are to cease if more than minor (occasional piece) asbestos containing materials are encountered and the process for excavation considered in relation to:<br>• Whether excavation works are crucial such that they have to continue. If not, excavations should be backfilled as per Items 10 onwards below.<br>• Whether the asbestos is bonded, non-friable.<br>• Whether a licensed asbestos assessor and / or contractor is required to undertake the works: required for friable asbestos and for >10m$^2$ non-friable asbestos or >100kg soil with non-friable asbestos.<br>• Whether dust and soil movement controls are appropriate.<br>• Whether all personnel undertaking the activity are required.<br>• Whether the PPE being utilised is appropriate or whether additional is required.<br>The WHS documentation for the excavation should also reviewed and revised if required prior to recommencement of excavations. |
| **9** | No dewatering of the excavation, or other form of groundwater discharge to the environment, is to be undertaken without an analytical assessment of the water quality and suitability and consideration of potential impact to acid sulfate soil.<br>In the absence of any sheen or odour indicating the potential for hydrocarbon contamination, groundwater may be disposed on the ground such that in infiltrates or evaporates or may be pumped to a Sediment Dam. Pumping to the Leachate Pond is not recommended unless the sediment loading is minimised. |
| **10** | Material excavated from below the marker layer is to be returned to below the marker layer, or otherwise removed from site by licensed waste contractor following assessment by a suitably qualified environmental consultant for off-site disposal. The presence of asbestos within the material to be disposed of is to be specifically assessed.<br>The area on which excavated material was stockpiled is to be inspected by a Class B asbestos assessor to confirm no asbestos is present at the surface of the site. |
| **11** | Marker layer to be placed above impacted material and up the sides of excavation as appropriate to intersect / overlap with marker layer of surrounding area. Refer to OP for replacement protocol. |
| **12** | Position of marker layer to be surveyed. |
| **13** | Excavation to be backfilled with appropriate material, (material certified in accordance with the Concrush Order, quarry material, VENM, ENM) and the thickness measured by survey if different from initial conditions. |

| | |
|---|---|
| **14** | Erosion control measures to be placed as appropriate after completion of works and/or vegetation to be replaced. |
| **15** | Report to be compiled including:<br>• Extent of works undertaken.<br>• If any impacted material was encountered and what was its fate. Retain dockets if material removed to licensed waste facility.<br>• Marker layer replacement (include photographs). If position different from initial, information to be included with 'As Constructed' plans for future use.<br>• Certification that any material imported for the purpose of fill placement over the marker layer has been done so in accordance with NSW legislative requirements. Documentation to include source, volume and any chemical testing undertaken.<br>• Type and thickness of capping layer above the marker layer. Any changes to be included with 'As Constructed' plans for future use.<br>• Results of air monitoring (if undertaken).<br>• Surface condition at completion of works (include photographs), |
| **16** | Area to be inspected the following day and weekly until such time that area has rehabilitated. |

| OP Title | Replacement of Marker Layer | | |
|---|---|---|---|
| OP Number | | Date Issued | |

**Purpose and Scope**

This procedure details the requirements for personnel replacing the marker layer at the site following its removal. Refer to 'As Constructed' plans showing the extent of the marker layer.

Replacement marker layer is to comprise Hi Vis 801 from Geofabrics Australia (as below) or equivalent product.

The presence of the marker layer is an integral part of the remediation and subsequent management of the site. While the layer may have to be removed upon occasion for specific works, the layer has to be replaced for the protection of human health and the environment in accordance with the remedial strategy.

**Procedure**

| | |
|---|---|
| **1** | Material which is to remain below the level of the marker layer is to be compacted to the extent possible. |
| **2** | The area requiring coverage by marker layer is to be measured. An allowance for a minimum of thirty (30) cm overlap of marker layer should be allowed for at each edge. |
| **3** | The marker layer is to be placed over the ground surface and pinned into place over the top of the existing marker layer around the extent of the excavation. Pins, comprising two (2) prongs and approximately ten (10) cm in length, should be placed approximately every metre to their full extent through both layers such that there is full coverage of the area of excavation. |
| **4** | Reinstatement of the capping layer dependent on the area and particular use of the area: this may comprise soil, concrete, pavers.<br>The depth of the capping material should be at least 0.5m unless the capping comprises concrete or equivalent permanent paving in which case the thickness of the material is considered sufficient. |

# Attachment C

Form Templates

INDUCTION REGISTER

CONCRUSH EXPANSION COMPONENT, TERALBA

| | |
|---|---|
| **Location:** | |
| **Date of Induction:** | |
| **Time:** | |
| **Convener/presenter:** | |

**The following acknowledge that they have completed the site induction and have received the Long Term Environmental Management Plan prior to undertaking any works within the Expansion Component of the Concrush Resource Recovery Facility, 21 Racecourse Road Teralba NSW.**

**By signing the following, personnel acknowledge induction for the site works and training in the requirements of the LTEMP at the site has been provided and that they have understood the requirement, will adhere to the requirements in the induction, and have included specific inclusion of the constraints in planning and WHS controls.**

| Name | License Number (list all licenses relevant to project such as vehicle and plant) | License Class | Expiry Date | Signature |
|---|---|---|---|---|
| | | | | |
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INSPECTION FORM
CONCRUSH EXPANSION COMPONENT, TERALBA

Date & time of inspection: …….

Person conducting the inspection (name and role): ……..……...

……...

Area of inspection: ……..……...

Reason for inspection:
☐ Routine ☐ Rainfall event: (..……mm)
☐ Completion of non-standard activity (please specify): ……

.....……

Depth of Leachate Pond …….

| | | | | |
|---|---|---|---|---|
| Any signs of erosion? | Yes | No | N/A | |
| Any sign of uneven settlement or slumping? | Yes | No | N/A | |
| Has the capping material been compromised? | Yes | No | N/A | |
| Is the marker layer (orange) visible? | Yes | No | N/A | |
| Is geomembrane visible in Leachate Pond or Wetland? | Yes | No | N/A | |
| Is the area adequately inaccessible to unauthorised personnel? | Yes | No | N/A | |
| Have relevant personnel who may require access to the area been notified of any non-conformance/ temporary limitations? | Yes | No | N/A | |
| Any signs of plant stress or loss? | Yes | No | N/A | |

Any corrective actions required? If so, please specify details and locations:

……

……

Who has been notified and when: ……

Corrective actions completed (description, date and outcomes)?

……

……

# Attachment D

Unexpected Finds

Examples of unexpected finds at the site include, but are not necessarily limited to:

- Bonded asbestos above the marker layer.
- Friable asbestos above or below the marker layer.
- Putrescible waste.
- Buried drums or other containers.
- Bulky items such vehicle parts, mattresses.
- Discoloured or odorous material.
- Slag.
- Hazardous ground gasses such as methane and carbon dioxide within excavations below the marker layer.

In the event of unexpected finds being encountered on the site, the following procedure, is to be adopted:

- Stop all current works in the area.
- Site worker or resident to inform relevant Concrush Pty Ltd personnel of find.
- Concrush Pty Ltd to consider need for external assistance (licensed asbestos assessor / contractor, Geotechnical Consultant, Contaminated Land Consultant or other) and make appropriate contact.
- If issue cannot be resolved within framework provided with the LTEMP, the area of find is to be made into an excluded area until issue is resolved.
    - All personnel are to be made aware of the reason for the exclusion.
- Following resolution of the issue, the incident notification process is to be undertaken as per **Sections 7.8 and 8.2** and the LTEMP review process as detailed in **Section 8.3** undertaken.