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20 October 2022

Our ref: 754-ENAUABTF00751AB_L17

Huntingdale Estate Nominees Pty Ltd C/- Sterling Global
Level 50, Rialto South Tower
525 Collins Street
Melbourne VIC 3000

Attention: Kim C Ly

Dear Kim,

Domain 4 Backfilling – Environmental Information in Support of Planning Permit Application

1. INTRODUCTION

Talbot Road Finance Pty Ltd C/- Sterling Global (Sterling Global) has engaged Tetra Tech Coffey Pty Ltd (Coffey, formerly trading as Coffey Environments Australia Pty Ltd) to provide ongoing environmental and geotechnical services in support of the proposed Talbot Village redevelopment at 1221 to 1249 Centre Road, Oakleigh South, Victoria (the site).

As part of ongoing environmental and geotechnical support, Sterling Global requested that Coffey provide information in support of a proposed planning permit application to Monash City Council (Council) for backfilling works at the site in Domain 4.

Relevant environmental (site contamination) requirements for the backfilling of Domain 4 were considered as part of the environmental audit completed at the site and associated EPA Victoria notices (refer Section 3 of this letter). These requirements have been summarised in this letter to support the proposed planning permit application.

2. BACKGROUND

An application for a planning permit is being made to Council to allow the backfilling of the former quarry pit in Domain 4.

These works are outlined in the following document prepared by Coffey:

- Coffey (2022) *Huntingdale Estate, Oakleigh South, Vic Domain 4 Backfill Design Report*. Ref: *GEOTABTF09257AA-AQ Rev12*. 14th October 2022.

This letter should be read in conjunction with the backfill design report.

The term ‘Domains’ in the context of this planning permit application relates to areas of the site grouped by similar geotechnical ground conditions, whereas site ‘Zones’ relate to environmental conditions and associated management requirements. Geotechnical Domain 4 and environmental Zone 4 and 4A represent the same area (open quarry void in the southwest portion of the site) and are used interchangeably in this letter.

The location of the site geotechnical domains overlain with the Statement of Environmental Audit (SoEA) zones is outlined in Figure 1 (**Attachment A**).

3. ENVIRONMENTAL AUDIT

A Section 53X Environmental Audit of the site was completed in May 2020 by Mr Ken Mival of EHS Support Pty Ltd[1] in support of the proposed site redevelopment (EPA CARMS reference: 70403-2 and Service Order Number: 8004092).

The audit found that the site was suitable for sensitive (residential) uses subject to a number of conditions as outlined in the Statement(s) of Environmental Audit SoEA. Three (3) individual SoEA were issued for different areas of the site based on the environmental conditions and associated management requirements, comprising:

- Zone 1 and Zone 2A.
- Zone 2, Zone 3, and Zone 5.
- Zone 4 and Zone 4A.

The backfilling works proposed under this planning permit application in Domain 4 are located in the SoEA area for Zone 4 and Zone 4A. An extract of the Zone 4 and Zone 4A SoEA[2] is provided in **Attachment B**.

Potential environmental impacts for the proposed site redevelopment (including backfilling of Zone 4), were considered in the environmental audit and are detailed in Section 4 below in relation to backfilling works; to address these potential impacts a number of conditions were included in the SoEA as summarised below and detailed in Section 5 and 6.

The SoEA for Zone 4 and Zone 4A assumes the proposed backfilling of the quarry void and includes the following conditions relevant to environmental monitoring during the works (Conditions 5 and 14):

- *The CEMP and CDSMM prepared by Coffey Services Australia Pty Ltd attached to this Statement, also must be adhered to prior to the commencement of construction and followed in detail regarding the proposed staging; the location of required gas protection measures (i.e. gas pathway intervention and building/ services protection measures); and required continuing monitoring of landfill gases.*
- *The Groundwater Quality Management Plan (GQMP), prepared by Coffey Services Australia Pty and dated 21 August 2019, attached to this Statement, must be applied by all parties responsible for on-going management of the development site in terms of ongoing monitoring and management of groundwater at the site and within areas designated by EPA as Groundwater Quality Restricted Use Zones (GQRUZs) on and off-site.*

In addition to environmental monitoring requirements during filling (see Section 5 below for further detail), the SoEA includes a more general condition (Condition 2) for backfilling works, including that an EPA appointed environmental auditor reviews and verifies the backfilling works are completed in accordance with the SoEA and associated management plans. The proposed backfilling design was reviewed and verified by the environmental auditor as part of the audit, it is expected that in verifying that works were completed in accordance with the design and associated environmental audit requirements, ongoing engagement with the appointed environmental auditor would be required during the backfilling process.

[1] EHS Support (2020) *53X Environmental Audit of Land at 1221-1249 Centre Road and 22 Talbot Avenue, Oakleigh South, Vic*, Ref. AUS##C01679_2019, dated 13 May 2020

[2] Extract (statement conditions) provided only. Full SoEA including attachments are available for download through the EPA website

The CDSMM (Coffey 2020) referenced in Condition 5 and attached to the SoEA is the *Conceptual Design of Site Management Measures* (2020) prepared by Coffey in support of the environmental audit. The SoEA and CDSMM requires that at the interface between the northern boundary of Zone 4 and the former landfill area in Zone 1 (current batter slope) a permanent vertical (boundary intervention) gas venting system is constructed prior to completion of the landfill cap in Zone 1. The design of this system (included in the audit) relevant to the backfilling of Zone 4 has been incorporated into the *Domain 4 Backfill Design Report*.

EPA Notices

In addition to the requirements outlined within the SoEA, EPA Victoria (EPA) has issued Environmental Action Notices (EAN) (Notice ID: EAN-00002878 and EAN-00002879) to enforce the statement conditions relating to implementation of the CEMP (Coffey 2020). The EAN address ongoing groundwater and LFG monitoring requirements under current conditions (prior to redevelopment), including during backfilling of the Zone 4 quarry void and proposed preloading works in Zone 1[3].

4. ENVIRONMENTAL CONDITIONS AND IMPACT OF PROPOSED WORKS

There is potential that the filling of the Zone 4 quarry void may alter ground gas conditions at the site, primarily relating to the potential for lateral gas migration from the former landfill area in Zone 1. However, consideration is generally confined to how any potential changes in ground gas conditions may impact the construction and development of internal areas of the site (e.g. future building construction in Zone 4). Potential changes in LFG conditions (or associated amenity impact) off-site, associated with the proposed backfilling works are considered unlikely.

Landfill gas monitoring during filling is primarily required to provide information regarding LFG conditions to confirm the requirements for the final development design (LFG protection measures) for Zone 4, but also will ensure that any changes in landfill gas conditions do not lead to an unacceptable gas risk to on-site or off-site receptors during construction.

Groundwater conditions are generally stable (stead state) under current site conditions, with the existing quarry void in Zone 4, acting as a discharge point for groundwater (and site surface water run-off) from the site and surrounds. The aquifer conditions remain conducive to natural attenuation of the contaminants of concern.

Whilst groundwater conditions at the site are relatively stable, there is potential that the proposed filling of the Zone 4 quarry void will alter the groundwater flow regime at the site. The effects of these changes will need to be monitored to ensure that no unacceptable risks to beneficial uses subsequently arise and the extent of the established groundwater quality restricted use zone (GQRUZ) remains appropriate.

Resumption of regional groundwater flow following filling of Zone 4 is expected to take several years (potentially decades) to be realised. As such the primary purpose of on-going groundwater monitoring at the site is to validate the results of the groundwater modelling and calculated aquifer assimilative capacity to ensure that the assumptions made with regards to groundwater contaminant risks remain appropriate. Groundwater monitoring will as a minimum, need to be undertaken during the filling of Zone 4 and for a reasonable period time following filling (expected 2-3 years but may continue depending on monitoring data).

The Statement of Environmental Audit (SoEA) prepared for the site includes a requirement that as part of the site redevelopment an in-ground pathway intervention (landfill cap and boundary venting system) be constructed in Domain 1. The purpose of the pathway intervention in this area being to control the vertical and lateral migration of landfill gas (i.e. prevent vertical migration to overlying structures or lateral migration off-site or to areas of lower gas risk such as Domain 4) being generated from the former landfill.

[3] Preloading works in Zone 1 are subject to a current planning permit application (TPA/534179).

The Domain 1 landfill extends into the northern section (batter slope) of Domain 4. Whilst the volume of waste in the batter slope of Domain 4 is relatively small and not expected to produce significant volumes of gas, the exact extent of wastes in this area has not been completely defined due to safety concerns and access constraints. The Domain 1 pathway intervention measures have been designed to extend into Domain 4 to the base of the quarry void (i.e. to natural soil) to ensure that any residual wastes at the Domain 1 – Domain 4 interface are incorporated within the cap extent. The detail of this design has been incorporated in the *Domain 4 Backfill Design Report*. Construction during backfilling will be required to be independently verified by the appointed Environmental Auditor.

5. ENVIRONMENTAL MONITORING

Environmental monitoring (groundwater and LFG) is required during the proposed Zone 4 backfilling works in accordance with the SoEA to ensure that environmental risks during construction remain acceptably low and to inform future management requirements during the site redevelopment.

Results of groundwater and LFG monitoring are required to be reported to an appointed Environmental Auditor and the EPA on an annual basis and immediately in any instances where monitoring trigger levels within the relevant management plans are exceeded. Should LFG or groundwater monitoring trigger thresholds be met during backfilling, then the works must cease pending review of the data and implementation of any contingency measures (if required) in consultation with the Environmental Auditor and EPA.

An outline of the existing (and proposed) LFG and groundwater monitoring network is provided in Figure 3 (**Attachment A**).

Landfill Gas Monitoring

The reference in the SoEA to the CEMP prepared by Coffey Services Australia Pty Ltd, is the *Construction Environmental Management Plan* (Coffey 2020) prepared in support of the Environmental Audit. The CEMP includes specific landfill gas (LFG) monitoring requirements under current site conditions and during backfilling of the Zone 4 quarry void, as outlined in the Stage 1 Landfill Gas Monitoring Plan (Coffey 2020) which is a subplan to the CEMP.

The monitoring plan includes the following requirements in relation to LFG:

- *Provide on-going landfill gas monitoring across the site prior to commencement of pre-loading in Zone 1, during filling of the Zone 4 quarry void and/or prior to commencement of detailed design (Stage 2) and Stage 3 (Civil) construction works.*
    - *The monitoring will provide ongoing information with regards to the characteristics of landfill gas under current site conditions and any changes that may occur (i.e.as a result temporal or climactic conditions*
- *Provide on-going monitoring during the filling of the Zone 4 quarry void to assess any changes in landfill gas conditions in Zone 4 or the surrounding area associated with the filling works*.
    - *This monitoring would primarily assist with informing detailed design (Stage 2) in terms of identifying any changes landfill gas risks at the site and the gas protection measures required.*

In accordance with the CEMP, biannual LFG monitoring (~every 6 months) of the existing monitoring network and completion of surface emission surveys is required during filling.

While the LFG sampling events during filling are nominally to be undertaken on a biannual basis, it is important to consider site activities in selecting the sampling period. For example, it will be beneficial to schedule the sampling event immediately following any significant filling works in a given area (i.e. following placement of large volumes of fill at the northern and eastern boundaries of the pit). For this reason, additional

targeted events are proposed. Four (4) targeted LFG sampling events and surface emission surveys will be completed over the duration of the backfilling works.

To provide more detailed information on the potential effects of the filling process on ground gas conditions, continuous LFG monitoring is to be undertaken in at least two locations, for a period of at least one month during initial backfilling works and for at least one month near the completion of backfilling works.

The monitoring periods selected are required to be coordinated with filling works so far as practicable (i.e. during or immediately following a significant period of filling), with locations for the continuous monitoring selected by the Environmental Consultant and approved by the appointed Environmental Auditor.

Groundwater Monitoring

On-going groundwater monitoring at the site is required as a condition of the SoEA.

Groundwater Monitoring Requirements are addressed in the *Groundwater Quality Management Plan* (Coffey 2019).

Groundwater monitoring for the existing monitoring network is currently required on a biannual basis (~every 6 months) prior to, during the filling process and following filling (~2-3 years). Cessation of groundwater monitoring requires verification from an appointed environmental auditor and notification to EPA.

Installation of continuous groundwater level monitors is also required at the commencement of the filling process (dewatering of quarry void). During initial dewatering and filling works data is required to be downloaded on a monthly basis (for the first 3 months of filling) and then on a biannual basis for the remainder of the filling process.

In addition to the existing bore network, three further monitoring wells (BH43-BH45) are required to be installed within the Zone 4 quarry void during filling as part of the on-going monitoring network.

6. PROTECTING THE EXISTING ENVIRONMENTAL MONITORING NETWORK

In accordance with the CEMP (Coffey 2020) all LFG and groundwater monitoring infrastructure at the site (including additional bores to be installed within the quarry void) must be protected during construction works, including the following requirements:

- *All monitoring locations are to be retained in a serviceable condition (such that representative samples can be collected) until it is deemed they can be decommissioned by the Environmental Consultant and/or verified by an appointed environmental auditor.*
- *The Site Manager is responsible for ensuring that monitoring infrastructure is not damaged and if any damage does occur, that it is rectified as soon as practicable in consultation with the Project Manager and Environmental Consultant.*

7. CONTROLS DURING CONSTRUCTION

Construction (backfilling works) must be in accordance with the CEMP (Coffey 2020) and associated documents.

The CEMP includes measures to address health, safety and environmental risks during construction, associated with residual soil, groundwater and landfill gas contamination at the site and describes how activities undertaken during the construction phase of the site redevelopment (including preloading activities) will be managed to avoid or mitigate negative environmental impacts on site (or off-site) and how these environmental management requirements will be implemented.

The CEMP requires that prior to construction works occurring an overarching site specific OH&S plan must be developed to include the controls described in the CEMP. All contractors and subcontractors are required to prepare their own site specific OH&S plan and appropriate Safe Work Method Statements (SWMS) or similar as required.

Backfilling works undertaken in accordance with the CEMP are unlikely to pose an unacceptable amenity impact to neighbouring residents (e.g. through LFG migration, generation of dust, odour or stormwater run-off).

Compliance with the CEMP is a requirement of the SoEA and EPA EAN. It is expected that compliance with the SoEA / CEMP will be a condition on the planning permit for these works.

8. STAGING OF WORKS

The environmental audit is a complete assessment of the contaminated land considerations at the site and considered any potential inter-zone effects during site redevelopment. The staging of the works is considered to be consistent with the intent and requirements of the SoEA.

Coffey notes that as outlined in Section 3 of this letter, the site redevelopment staging considered in the SoEA and CEMP requires that prior to the completion of construction of the landfill cap in Domain 1, filling of Domain 4 must have progressed to a sufficient degree that the cap construction at the interface of the Domain 1 and Domain 4 boundary can be completed.

9. CONCLUSION

Potential environmental impacts associated with the Zone 4 backfilling works (as proposed under this planning permit application) will be appropriately managed through the requirements of the Statement of Environmental Audit and are considered unlikely to cause ‘unreasonable amenity impact’ or pose an unacceptable risk due to landfill gas or contaminated groundwater migration to surrounding residential properties.

10. CLOSING

This report should be read in conjunction with the attached ‘Important Information about your Tetra Tech Coffey Report’.

Should you have any queries regarding this information please contact the undersigned.

For and on behalf of Tetra Tech Coffey,

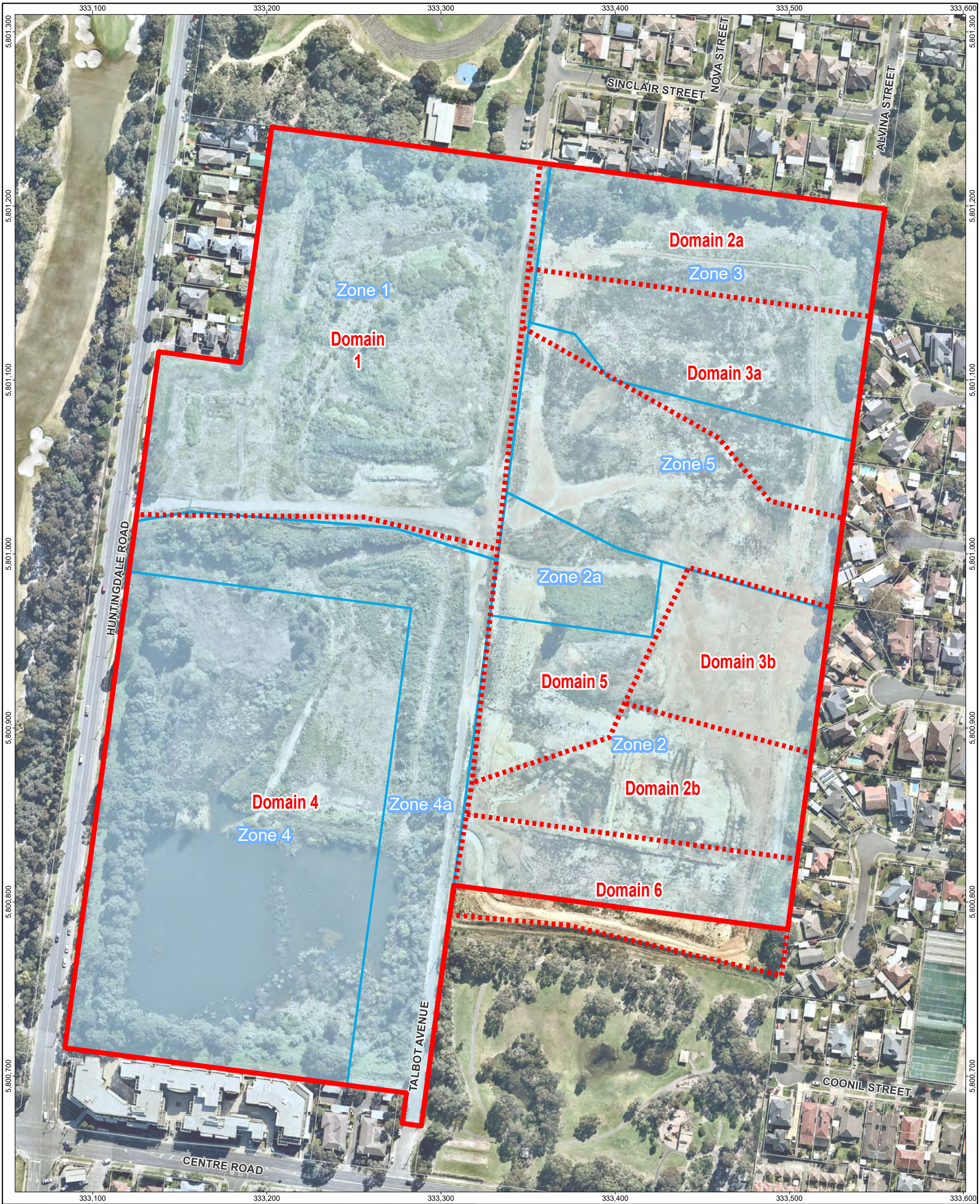
Roger Gibbs
Senior Associate – Site Assessment & Remediation

Attachments:

Attachment A – Figures

Attachment B – Zone 4 and Zone 4A Statement of Environmental Audit

ATTACHMENT A - FIGURES



revision no.	description	drawn	approved	date
A	ORIGINAL ISSUE	AM	RG	23.11.21

LEGEND

DOMAIN BOUNDARY

SITE BOUNDARY

HISTORICAL SITE ZONES

CADASTRE

IMAGERY SOURCE: Nearmap (06-09-2020)

SCALE 1:2,000(A3) METRES

0 20 40 60 80

Projection: GDA 1994 MGA Zone 55

drawn	AM
approved	RG
date	23.11.2021
scale	1:2,000
original size	A3

TETRA TECH COFFEY

client:	HUNTINGDALE ESTATE NOMINEES PTY LTD
project:	GEOTECHNICAL SITE INVESTIGATION 1221-1249 CENTRE ROAD & 22 TALBOT AVENUE OAKLEIGH SOUTH, VICTORIA
title:	SITE GEOTECHNICAL DOMAINS
project no:	GEOTABTF09257AA-EE
figure no:	FIGURE 1
rev:	A

MXD Template Reference: ENAUABTF00751AB_L15_GIS002_v0_1

ATTACHMENT B - ZONE 4 AND ZONE 4A STATEMENT OF ENVIRONMENTAL AUDIT

Statement of Environmental Audit – Zone 4 and Zone 4A

ENVIRONMENT PROTECTION ACT 1970

I, *Kenneth Neil Mival,* of *EHS Support Pty Ltd*, a person appointed by the Environment Protection Authority ('the Authority') under the *Environment Protection Act 1970* ('the Act') as an Environmental Auditor for the purposes of the Act, having

1. been requested by *Sinclair Brook Pty Ltd – Subsequently - Huntingdale Estate Nominees Pty Ltd* to issue a certificate of environmental audit in relation to the site located at *1221-1249 Centre Road and 22 Talbot Avenue, Oakleigh South, Victoria, identified as part of Lot 2 on PS409879V on Certificate of Title Volume 10378 Folio 210* ('Zone 4 and 4A' portions of the site*),* owned by *Huntingdale Estate Nominees Pty Ltd*.

2. had regard to, among other things,

   (vii) guidelines issued by the Authority for the purposes of Part IXD of the Act,

   (viii) the beneficial uses that may be made of the site

   (ix) relevant State environment protection policies/industrial waste management policies, namely

   State Environment Protection Policy, Prevention and Management of Contamination of Land, June 2002;

   State Environment Protection Policy, Ambient Air Quality, February 1999;

   State Environment Protection Policy, Air Quality Management, December 2001;

   State Environment Protection Policy, Waters, October 2018;

   EPA Environment Protection (Industrial Waste Resource) Regulations 2009.

   in making a total assessment of the nature and extent of any harm or detriment caused to, or the risk of any possible harm or detriment which may be caused to, any beneficial use made of the site by any industrial processes or activity, waste or substance (including any chemical substance), and

3. completed an environmental audit report in accordance with section 53X of the Act, a copy of which has been sent to the Authority and the relevant planning and responsible authority.

HEREBY STATE that I am of the opinion that

The site is suitable for the beneficial uses associated with the following land uses:

- *Sensitive Uses, limited to Medium or High-density Residential use in Zone 4A; Low, Medium and High-Density Residential Use in Zone 4; and Childcare/Kindergarten use in Zone 4 but not Zone 4A ;*
- *Recreation/Open Space use; and*
- *Commercial and/or Industrial use.*

Subject to the following conditions attached thereto:

1. This Statement is directly referable to and based upon the layout and types of construction proposed for the development as shown and described in Appendix A (Figures 1 to 4), and Appendix B (Figures 1 to 6) of the Draft Conceptual Design of Site Management Measures (CDSMM) (Document Reference: ENAUABTF00751AB_R14 and dated 1 May 2020) and the Construction and Environmental Management Plan (CEMP) (Ref: 754-ENAUABTF00751AB_R17 - dated 1 May 2020) reports, both prepared by Coffey Services Australia, attached to this Statement of Environmental Audit, that indicate that the site will be substantially covered by vapour protection measures and by medium or high-density residential developments and associated pavements and driveways, with the potential for a single basement car parking level for residential and commercial lots. Any development plan issued subsequent to, or as part of a permit application to Council, showing proposed land-uses, and any subsequent substantive changes to that layout and general pattern of land uses and building styles, must be subject to review and verification by an environmental auditor appointed under Part IXD of the Environment Protection Act 1970 (or its successor), with this verification advised in writing to EPA and the planning authority, to ensure that it conforms with the intent of this Statement of Environmental Audit.
2. The backfilling of the Zone 4 quarry void (and associated importation and temporary stockpiling of fill material) must be undertaken prior to redevelopment in Zone 4 in accordance with the:
    a. *'Construction Environmental Management Plan (CEMP)'* prepared by Coffey Services Australia Pty Ltd and dated 1 May 2020 (attached to this Statement);
    b. *'CEMP - Backfilling Works'* prepared by Coffey Services Australia Pty Ltd (Ref: ENAUABTF00571AA_R03_Rev10 - dated September 2015);
    c. '*Site Backfilling Protocol*' prepared by Coffey Services Australia Pty Ltd (Ref: ENAUABTF00571AA_R02_Rev06 - dated September 2015);
    d. '*Groundwater Quality Management Plan*' (GQMP) prepared by Coffey Services Australia Pty Ltd (Ref: ENAUABTF00751AB_R16 - dated 21 August 2019);
    e. '*Zone 4 Backfill Design Report*' prepared by Coffey Services Australia Pty Ltd (Ref: GEOTABTF09257AA-AQ Rev11 - dated June 2015);
    f. '*Zone 4 Backfill Design Specification*' prepared by Coffey Services Australia Pty Ltd (Ref: GEOTABTF09257AA-BC Rev09 - dated June 2015); and
    g. '*Zone 4 Construction Quality Assurance Plan*' prepared by Coffey Services Australia Pty Ltd (Ref: GEOTABTF09257AA-BB Rev09) - dated November 2015).
    h. Any updates of the above documents where revisions are required to address any substantive changes in development plans or circumstances where they may affect environmental management at the site, must be verified by an environmental auditor appointed under Part IXD of the Environment Protection Act 1970 (or its successor),

    The backfilling of the Zone 4 quarry void is to be reviewed and verified by an environmental auditor appointed under Part IXD of the Environment Protection Act 1970 (or its successor), as being compliant with the documents listed above and as suitable for the proposed land uses, including sensitive uses.

3. A gas/vapour mitigation system, based on the characteristic situation (CS2) as defined in British Standard BS8485:2015 +A1 (2019), must be incorporated into the areas of any future buildings or extensions constructed in Zone 4A at the site in accordance with of the advice provided in the attached CDSMM report prepared by Coffey Services Australia (Ref: ENAUABTF00751AB_R14 and dated 1 May 2020) and the relevant guidance included in British Standard BS8485:2015+A1 (2019) (or its successor).

4. As a precaution, ventilation measures, such as a pressure relief pathway, passive slab dispersal layer or ventilated basement substructure in accordance with British Standard BS8485:2015 +A1 (2019), must be incorporated into the design of any future buildings or extensions constructed in Zone 4 at the site prior to occupation in accordance with the advice provided in the attached CDSMM report prepared by Coffey Services Australia (Ref: ENAUABTF00751AB_R14 and dated 1 May 2020) and the relevant guidance included in British Standard BS8485:2015+A1 (2019) (or its successor) and/or with reference to NSW EPA (2012) Publication 0932 Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases which may be more relevant for Australian building designs.

5. The CEMP and CDSMM documents prepared by Coffey Services Australia Pty Ltd and dated 1 May 2020, attached to this Statement, also must be adhered to prior to the commencement of building and/or construction of civil works and followed in detail regarding the proposed staging; the location of required gas protection measures (i.e. gas pathway intervention and building/ services protection measures); and required continuing monitoring of landfill gases. In particular:

    d. A permanent vertical (boundary intervention) gas venting system (constructed prior to the landfill cap in Zone 1 and 2A), at the northern and eastern boundaries of Zone 4A as indicated on Figure 1 of the CDSMM report, to intercept and vent gas potentially migrating laterally from adjacent landfilled areas;

    e. Building protection measures (e.g. vapour barrier) for Zone 4A in accordance with the typical designs included in Appendix B of the attached CDSSM Plan, that achieve the minimum gas protection score required in BS8485, for a low hazard potential (CS2) and the particular building type. This is to include as a minimum a sub-slab passive ventilation system that must be demonstrated to achieve "good or very good performance" (as defined by British Standard BS8485) together with a sub-slab membrane (applied and tested in accordance with the product specifications) and/or a specifically engineered floor slab (cast in-situ monolithic reinforced ground bearing raft or reinforced cast in situ suspended floor slab with minimal penetrations);

    f. Building protection measures (e.g. ventilation measures) for the remainder of Zone 4 in accordance with British Standard BS8485:2015 +A1 (2019), such as a pressure relief pathway, passive slab dispersal layer or ventilated basement substructure; and

    g. A gas venting system for any on-site subsurface utilities or large hardstand areas such as roads, retarding basins, artificial sports pitches and pedestrianised areas.

6. Prior to the commencement of construction, the workplan and detailed design of the gas mitigation system (including Construction Quality Assurance Plan/s) required by Conditions 3, 4 and 5, must be prepared by a suitably qualified professional and verified by an environmental auditor appointed under Part IXD of the Environmental Protection Act 1970 (or its successor) prior to construction of each stage of the development, and this verification be advised in writing to EPA and the planning authority. Separate CQA plans should be prepared for the pathway intervention (venting measures) and the individual building protection measures.

7. The gas mitigation system required by Conditions 3, 4 and 5, must be constructed and installed by suitably qualified professionals and the installation verified by an environmental auditor appointed under Part IXD of the Environmental Protection Act 1970 (or its successor) during construction and prior to occupation, and this verification be advised in writing to EPA and the planning authority. The operating parts of the system must be maintained in a good state of repair at all times and replaced or enhanced if found to be insufficient.

8. The gas protection system required by Conditions 3, 4 and 5, must remain in place until such time as an environmental auditor appointed under Part IXD of the Environmental Protection Act 1970 (or its successor) verifies in writing that the vapour mitigation system is no longer of any continuing benefit, and this verification is advised in writing to EPA and the planning authority. No such system should be disabled until confirmed by EPA by written notice and/or revocation of any continuing restrictions that may be placed on the site by EPA.
9. Groundwater at the site is polluted and should not be used for the precluded relevant beneficial uses that include: Potable Water Supply (Desirable); Agriculture and Irrigation (irrigation and stock watering); Water based Recreation (primary or secondary contact recreation) (e.g. filling of swimming pools); or some forms of industrial and commercial water use that require water free from contaminants. Therefore, it is recommended that if it is intended that any beneficial use of groundwater be realised, whether considered to be relevant, protected or not, the groundwater quality must be subject to further review and approval by an environmental auditor appointed under Part IXD of the Environment Protection Act 1970 (or its successor), at the time when assessed to ensure that it is suitable for the proposed use. Groundwater may be extracted for the purpose of environmental monitoring or remediation;
10. For the construction of any subsurface features, materials must be designed to withstand the potentially corrosive properties of refuse fill material (where present on the northern and eastern boundaries of Zone 4A) and of groundwater potentially having a low pH, in accordance with Australian Standard 2159-2009 (Piling-Design and Installation) as amended from time to time.
11. The CEMP prepared by Coffey Services Australia Pty Ltd and dated 1 May 2020, attached to this Statement, must be updated at the completion of design works and then reviewed and verified by an environmental auditor appointed under the Environment Protection Act 1970 (or its successor). The final CEMP must be adhered to for the construction period and followed in detail regarding the management of soils, landfill gas and groundwater and implementation of appropriate health and safety measures for site workers.
12. The Post Construction Environmental Management Plan (EMP) for ongoing occupation of the site post construction, prepared by Coffey Services Australia Pty Ltd and dated 1 May 2020, attached to this Statement, must be updated prior to site occupation and then reviewed and verified by an environmental auditor appointed under the Environment Protection Act 1970 (or its successor) that it meets the intent of the conditions or this Statement of Environmental Audit. The final EMP must be implemented and maintained by the future occupants/ Owners Corporation from the commencement and for the duration of site occupation. Any modifications of the final EMP must be verified by an environmental auditor and this verification be advised in writing to EPA and the planning authority. The EMP must be followed in detail regarding the management of soils, landfill gas and groundwater and implementation of appropriate health and safety measures for site workers, residents and the public. The EMP must be maintained for any period of intrusive maintenance of utilities, or if there are any further excavations carried out at the site.
13. Single level ventilated basement substructures (having no habitable structures) in accordance with British Standard BS8485:2015 +A1 (2019), may be incorporated into the proposed future developments in the Zone 4 and 4A areas of the site provided that full time ventilation is incorporated into the design. If the basement substructure is to extend below the depth of the water table, the proposed design must be subject to further review and verification by an environmental auditor appointed under Part IXD of the Environment Protection Act 1970 (or its successor).
14. The Groundwater Quality Management Plan (GQMP), prepared by Coffey Services Australia Pty and dated 21 August 2019, attached to this Statement, must be applied by all parties responsible for on-going management of the development site in terms of ongoing monitoring and management of groundwater at the site and within areas designated by EPA as Groundwater Quality Restricted Use Zones (GQRUZs) on and off-site.

15. The GQMP has established 'Trigger levels' for key contaminants of concern at the site. In the event that the ongoing monitoring program identifies sustained exceedances of these Trigger Levels, the responsible parties must implement the contingency measures provided in the GQMP and provide a report to EPA on the nature of the exceedances and risks that may be occurring, and the actions to be taken, or that have been taken, as verified by an environmental auditor appointed under Part IXD of the Environmental Protection Act 1970 (or its successor).
16. The GQMP must remain in force until such time as an environmental auditor appointed under Part IXD of the Environment Protection Act 1970 (or its successor) verifies in writing (via an Audit under Section 53V of the Environment Protection Act 1970 - or its equivalent under the new EPA Act 2017) that the groundwater monitoring and management requirements of the GQMP are no longer required, and this verification is accepted by EPA, any other restriction imposed by EPA is revoked by EPA and also advised in writing to the responsible planning authority.

The condition of the site is detrimental or potentially detrimental to any (one or more) beneficial uses of the site. Accordingly, I have not issued a Certificate of Environmental Audit for the site in its current condition, the reasons for which are presented in the environmental audit report. The terms and conditions that need to be complied with before a Certificate of Environmental Audit may be issued are set out as follows:

Removal of remaining fill soils containing any aesthetically unacceptable material, bonded asbestos-containing material and any material having elevated concentrations of benzene, heavy metals (in particular arsenic and copper), PAHs (in particular naphthalene) and TRHs (C_{10}-C_{34}).

Remediation of groundwater to restore precluded beneficial uses.

Removal of all waste material having a gas generating potential.

Other related information:

The attached CEMP; CDSMM; GQMP and EMP contain further information about management of the site during and post construction and should be consulted when applying the conditions contained in this Statement of Environmental Audit.

- The extent of the Zone 4 and 4A portions of the Site audited site is defined by the following table of coordinates:

Location of Coordinates	Easting	Northing
P07 - Zone 4A – NE corner	333,307	5,800,810
P25 – Zone 4A - NE boundary	333,328	5,800, 965
P17 - Zone 4A – SE central	333,307	5,800,810
P18 - Zone 4A - SE corner	333,289	5,800,671
P19 – Zone 4A – SW corner - Entrance	333,278	5,800,673
P20 – Zone 4A – NW corner - Entrance	333,280	5,800, 690
P21 – Zone 4 – SW corner	333,084	5,800,716
P26 – Zone 4A SW corner – Zone 4 SE corner	333,246	5,800,695
P27 – Zone 4A N corner – Zone 4 NE corner	333,283	5,800,969
P28 -Zone 4A SW boundary – Zone 4 NW corner	333,121	5,800,990
P10 – Zone 4A NW corner	333,125	5,801,019
P09 – Zone 4A – N boundary	333,157	5,801,024
P08 – Zone 4A – N boundary	333,273	5,801,015
P07 - Zone 4A – NE corner	333,307	5,800,810

- Prior to the completion of the landfill cap in Zone 1, the filling of the quarry void in Zone 4 should have progressed to a sufficient degree that the cap construction at the interface of the Zone 1 and Zone 4a boundary can be completed.
- Following the backfilling of the Zone 4 quarry void, the first stage of civil works as a precaution should include construction and verification (by an environmental auditor) of the boundary gas venting system (to intercept and vent gas migrating laterally into Zone 4/4A from adjacent landfilled areas), prior to any further construction.
- Groundwater beneficial uses are precluded both on-site and off-site by regional groundwater conditions and on-site groundwater pollution, which includes elevated concentrations of ammonia, nitrate, PFHxS & PFOS, benzene, chloride, sodium and metals such as lead, copper, manganese and nickel. However, several of these beneficial uses are unlikely to be realised both on-site or down-gradient of the site. Regional groundwater conditions include naturally occurring concentrations of metals such as arsenic and zinc which do not constitute pollution.
- Based on the groundwater investigations undertaken at and surrounding the site, the groundwater beneficial use Water Dependent Ecosystems at the nearest receptor is considered likely to be protected and the beneficial use Buildings and Structures is also considered to be protected.
- The Authority has determined that groundwater has been cleaned so far as reasonably practicable and that the site is within a Groundwater Quality Restricted Use Zone. In accordance with clause 58(4) of SEPP (Waters), the Authority may require periodic reassessment of the practicability of groundwater clean-up.
- Soil at the site contains naturally elevated concentrations of nickel and zinc. The levels are considered typical of the regional soil quality surrounding the site and do not constitute pollution or represent a health or ecological risk. Local natural plants and fauna are likely to be adapted to these background levels, however, there may be some impact on introduced plants, grasses and fauna.
- Prior to any construction work or excavation of soils at the site, any existing onsite or offsite landfill gas and groundwater monitoring bores that are not required for ongoing monitoring at the site, must be decommissioned in accordance with the Minimum Construction Requirements for Water Bores in Australia (Edition 3, Revised February 2012, Australian Government National Water Commission).
- Any soil excavated at the site during or after construction must be assessed and managed appropriately on-site in accordance with any residual concentrations of chemicals and, if required to be removed from the site, be appropriately classified for disposal in accordance with IWRG 621 (or its successor) and managed in accordance with that classification;
- Any soils imported to the site should be accompanied by appropriate transport documentation and sampling description and results classifying the material as 'Fill Material' in accordance with IWRG 621 (or its successor) and managed in accordance with that classification.
- Whilst flux rates are low and considered likely to reduce over time, any discharge of landfill gases from the boundary venting system(s) must remain compliant with the SEPP (Air Quality Management).
- Prior to occupancy of the site, the relevant planning and responsible authority may require the owner of the site to enter into a Section 173 Agreement under the Planning and Environment Act 1987. The Section 173 Agreement is expected to include the management and monitoring requirements adopted by the Owners' Corporation at its inaugural meeting;
- The recipient of this Statement of Environmental Audit is also advised that under the requirements of section 53ZE of the *Environment Protection Act 1970* (or its successor), any future owners or occupiers of the subject land should be furnished with a copy of this Statement.

- Two separate statements of environmental audit have also been issued for other parts of the site located at 1221-1249 Centre Road and 22 Talbot Avenue, Oakleigh South:
    - Zones 1 and 2A: Lots 1, 2 & 3 on TP803687U on Certificate of Title Volume 8343 Folio 532, Lot 1 on LP38793 on Certificate of Title Volume 8186 Folio 871 and part of Lot 2 on PS409879V on Certificate of Title Volume 10378 Folio 210, part of Lot 1 on TP805390J on Certificate of Title Volume 9402 Folio 344 and part of Crown Allotment 6A Section 2 on TP523979Q on Certificate of Title Volume 6313 Folio 437.
    - Balance of Zone 2 and Zones 3 and 5: Part of Crown Allotment 6A Section 2 on TP523979Q on Certificate of Title Volume 6313 Folio 437, Lots 1-41 and roads on LP12090 on Certificate of Title Volume 3645 Folio 846.

This Statement forms part of environmental audit report EHS Support Pty Ltd, titled "53X Environmental Audit of Land at 1221-1249 Centre Road and 22 Talbot Avenue, Oakleigh South, Vic, Ref. AUS##C01679_2019, dated 13 May 2020, EPA References 70403-2 and 8004092. Further details regarding the condition of the site may be found in the environmental audit report.

DATED 13 May 2020

Signed:

Kenneth N Mival
Environmental Auditor
(Contaminated Land)

Attachments:

Figure 1: Zone Boundary Coordinates
GQRUZ as determined by EPA
Conceptual Design of Site Management Measures (CDSMM)
Construction Environmental Management Plan (CEMP)
Post Construction Environmental Management Plan (EMP)
Groundwater Quality Management Plan (GQMP)

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IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY ENVIRONMENTAL REPORT

Introduction

This report has been prepared by Tetra Tech Coffey for you, as Tetra Tech Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Tetra Tech Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Tetra Tech Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Tetra Tech Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Tetra Tech Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Tetra Tech Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Tetra Tech Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Tetra Tech Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Tetra Tech Coffey prepared the report and has familiarity with the site, Tetra Tech Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Tetra Tech Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.