Site Audit Report

Lot 204 in DP 1265921 (Stage 2B)
12 Johnston Crescent,
Horsley Park NSW

Prepared for

CSR Building Products Limited

James Davis
NSW EPA Accredited Contaminated Land Site Auditor
Accreditation Number: 0301

Final Report

October 2021 **Report Reference: 600105_0301-2010**

Report Title

Site Audit Report
Lot 204 in DP 1265921 (Stage 2B)
12 Johnston Crescent,
Horsley Park NSW

Report Reference: Ref: 600105_0301-2010
Revision Status: Final

Site Audit Details:

Enviroview Project Reference: 600105
Site Auditor: James Davis
Site Auditor Accreditation Number: 0301

List of Site Audit Statements that this report relates to:

0301-2010

Client Details:

Site Audit Commissioned By: CSR Building Products Limited
Client Contact: Wayne Pasalich

Document Control:

Revision Status	Date	Approved	Distribution		
			Client	Council	NSW EPA
Final	25/10/2021		*e/h*	*SAS-e*	*SAS-e*

Notes: (h) – hard copy and number of copies; (e) – electronic soft copy

Enviroview Pty Ltd
PO Box 327
Gladesville NSW 1675

Executive Summary

This Site Audit Report and subsequent Site Audit Statement have been produced to document the findings of a Site Audit, conducted by James Davis of Enviroview Pty Ltd, a New South Wales Environmental Protection Authority (NSW EPA) Contaminated Land Accredited Site Auditor on the subject site identified as Stage 2B, Lot 204 in DP 1265921 located at 12 Johnston Crescent, Horsley Park NSW.

The Site Audit has been conducted following a request from CSR Building Products Limited to undertake a Site Audit on the site and to determine in the Site Auditor's opinion whether the site is suitable for the proposed land use. It is understood that the site is proposed to be developed for continued commercial/industrial land use.

As the Site Audit is not commissioned to meet a specific requirement of a development consent or approval given under the *Environmental Planning and Assessment Act 1997* it has not been conducted as a Statutory Site Audit as defined by s 47(c) of the *Contaminated Land Management Act 1997*.

The objective and scope of the Site Audit was to independently review the assessment and validation works conducted at the site and the environmental consultant's reports that have been prepared for the site and to determine whether the site is suitable for the proposed land use. The site land use will remain unchanged; therefore, this Site Audit has been undertaken with consideration to commercial/industrial land use.

The outcome of the Site Audit is this Site Audit Report and subsequent Site Audit Statement (0301-2010), a copy of which will be attached to the back (following the appendices) of this report.

In order to achieve the objective of the Site Audit, the Site Auditor reviewed the relevant site assessment works undertaken as reported by the consultant together with a review of the remedial planning and site validation works completed. The Site Auditor has also completed a review of a works associated with the assessment of risk of potential landfill gas impact to the Site Audit area arising from an adjoining former landfill site located to the west of the Site Audit and an Environmental Management Plan (EMP) for land fill gas that has been prepared for the adjoining former landfill.

The Site Audit assessed if the consultant's work complied with relevant procedures and guidelines and whether it provides a robust basis for determining whether the objective has been met regarding the suitability of the land for the proposed land use.

The Site Auditor has inspected the site and reviewed the relevant documents prepared by the contaminated land consultants relating to the works conducted at the site.

The investigation, assessment and validation work reported and reviewed are considered to have met the requirements of NSW EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* and other guidelines approved under s.105 of the *Contaminated Land Management Act 1997* and the objectives of the Site Audit and the Site Auditor is satisfied that the assessment and validation works have been appropriately undertaken.

The NSW EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* prescribe that during an assessment of the suitability of a site for an existing or proposed land use in an urban context, Site Auditors should follow the decision-making process for assessing urban redevelopment sites provided in the guidelines.

The decision-making process prescribed in the NSW EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* has been followed by the Site Auditor and the site is considered suitable for the proposed commercial/industrial land use, however, the landfill gas risk assessment conducted has identified a low risk of landfill gas migration from the former Camide Landfill located to the west of the Site Audit area.

In the Site Auditor's opinion, the proposed monitoring and inspection program contained in the EMP effectively mitigates risk to site users in relation to potential risk associated with migration of landfill gas onto the Stage 2 area (including Area 2B) from the adjoining former landfill to the west. Ongoing risk at the Stage 2B development area is minimal, however, this is contingent on the implementation of the EMP. The EMP has appropriately addressed potential risk factors and the inspections, maintenance controls, and monitoring specified in the EMP should effectively continue to ensure the Site Audit area remains suitable for continued commercial/industrial land use.

While the requirements of the EMP are not specifically included in the Environmental Protection Licence (EPL) that applies to the landfill site, ongoing monitoring is a requirement and subject to ongoing regulation by the NSW EPA. In addition, there exists a contract for sale of the land with specific provision for the Vendor (CSR) to undertake all obligations relating to the contamination of the site. The provision in the contract will enable the purchaser to seek specific performance of that agreement regarding the obligations imposed by the EMP. The Site Auditor is therefore satisfied that there the EMP can be reasonably enforced.

The EMP will be attached to the Site Audit Statement which is required to be noted on the planning certificate issued by the Council under s 10.7 of the *Environmental and Planning Act 1979* as required by State Environmental Planning Policy no. 55. Purchasers must be provided the planning certificate as an attachment to the contract for the sale of land under s 52A(2) of the *Conveyancing Act 1919* and *Conveyancing (Sale of Land) Regulation 2010*.

In conclusion, a Site Audit Statement will be issued certifying that, in the opinion of the Site Auditor that the Site is suitable for commercial and industrial use subject to the implementation of the EMP.

Acronyms and Abbreviations

ACM	Asbestos Containing Material
AF/FA	Asbestos Fines/Friable Asbestos
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
BTEX	benzene, toluene, ethylbenzene, and xylenes
bgl	Below Ground Level
COC	Chain of custody (can also be contaminants of concern)
DA	Development Application
DEC	Department of Environment and Conservation (NSW)
DECC	Department of Environment and Climate Change (NSW)
DECCW	Department of Environment, Climate Change and Water (NSW)
DP	Deposited Plan
DSI	Detailed Site Investigation
HILs	health-based investigation levels
IA	interim advice
LOR	Limit of Reporting
m	Metre
MW	monitoring well
NEHF	National Environmental Health Forum
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NRMMC	Natural Resource Management Ministerial Council
NSW	New South Wales
OCPs	Organochlorine pesticides
OEH	The NSW Office of Environment and Heritage
OPPs	Organophosphorus pesticides
PAH	Polycyclic aromatic hydrocarbons
PID	Photoionisation Detector
RAP	Remedial Action Plan
RPD	Relative Per cent Difference
SAR	Site Audit Report
SAS	Site Audit Statement
SEPP 55	State Environmental Planning Policy No. 55 – Remediation of Land
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
VOCs	Volatile organic compounds

Table of Contents

List of Tables

List of Appendices

1 Introduction

1.1 Overview

This Site Audit Report and subsequent Site Audit Statement have been produced to document the findings of a Site Audit, conducted by James Davis of Enviroview Pty Ltd, a New South Wales Environment Protection Authority[1] (NSW EPA) Contaminated Land Accredited Site Auditor accredited under Part 4 of the *Contaminated Land Management Act 1997* as a Site Auditor.

The Site Audit has been conducted in accordance with the requirements of the *Contaminated Land Management Act 1997* (the 'Act'). The Act defines the Site Audit as follows:

> "site audit" means a review:
>
> (a) that relates to management (whether under this Act or otherwise) of the actual or possible contamination of land, and
>
> (b) that is conducted for the purpose of determining any one or more of the following matters:
>
> (i) the nature and extent of any contamination of the land,
>
> (ii) the nature and extent of any management of actual or possible contamination of the land,
>
> (iii) whether the land is suitable for any specified use or range of uses,
>
> (iv) what management remains necessary before the land is suitable for any specified use or range of uses,
>
> (v) the suitability and appropriateness of a plan of management, long-term management plan or a voluntary management proposal.

Furthermore, the Act provides the following definitions:

> "Site Audit Report" means a site audit report prepared by a site auditor in accordance with Part 4 [of the Act].
>
> "site audit statement" means a site audit statement prepared by a site auditor in accordance with Part 4 [of the Act].

The *Contaminated Sites: Guidelines for the NSW Auditor Scheme (3rd edition)*, (NSW EPA, 2017) describes the site assessment and Site Audit process where the consultant is commissioned to assess the contamination and the Site Auditor reviews the consultant's work.

[1] *The NSW EPA has undergone several name changes in the past; however certain statutory functions and powers have always and continue to be exercised in the name of the Environmental Protection Authority (NSW EPA). The NSW EPA is responsible for environmental regulation and associated activities throughout NSW including those activities regulated under the Contaminated Land Management Act 1997. The use of the names NSW Department of Environment and Conservation (NSW DEC), NSW Department of Environment and Climate Change (NSW DECC), NSW Department of Environment, Climate Change and Water (NSW DECCW), NSW Office of Environment and Heritage (NSW OEH) and NSW EPA in this report are used with reference to the name relevant at the time and context of the reference but are considered interchangeable and can be interpreted as one and the same.*

The Site Auditor inspected the site and reviewed relevant documents prepared by the consultants relating to the remedial planning, remediation and validation works completed for the site.

1.2 Guideline Documents

Guidelines made or approved by the NSW EPA under s.105 of the Act at the time of the Site Audit include:

- Contaminated Land Guidelines: Assessment and Management of Hazardous Ground Gases, NSW EPA, 2019 (NSW EPA, 2019)
- Contaminated Sites: Guidelines for the vertical mixing of soil on former broad-acre agricultural land, NSW EPA, 1995 (NSW EPA, 1995)
- Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (NSW EPA, 1995)
- Contaminated Sites: Guidelines for Assessing Banana Plantation Sites, NSW EPA, 1997 (NSW EPA, 1997)
- Contaminated Land Guidelines: Consultants Reporting on Contaminated Land, NSW EPA ,2020 (NSW EPA, 2020)
- Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens, NSW DEC 2005 (NSW DEC, 2005)
- Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition), NSW EPA, 2017 (NSW EPA, 2017)
- Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination, NSW DEC, 2007 (NSW DEC, 2007)
- Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997, NSW DECC, 2015 (NSW EPA, 2015)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, August 2018), (ANZG, 2018) (except for the water quality for primary industries component, which still refer to the ANZECC & ARMCANZ 2000 guidelines)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, Paper No 4, 2000 (ANZECC/ARMCANZ, 2000) (primary industries only)
- Composite Sampling. Lock, W. H., National Environmental Health Forum Monographs, Soil Series No.3, 1996, SA Health Commission, Adelaide (NEHF, 1996)
- Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards. Department of Health and Ageing and EnHealth Council, Commonwealth of Australia, 2012 (EnHealth, 2012)
- National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, 1999 (Amended May 2013) (NEPC, 1999, Amended 2013)

- Guidelines for the Assessment and Clean Up of Cattle Tick Dip Sites for Residential Purposes, NSW Agriculture and CMPS&F Environmental, February 1996 (NSW Agr., 1996)
- Australian Drinking Water Guidelines. National Health and Medical Research Council and Natural Resource Management Ministerial Council, 2011 (NHRMC/NRMMC, 2011)

From time to time the NSW EPA may amend the guidelines made or approved under s.105 of the Act.

Several additional technical notes and guidance is also provided by the NSW EPA that may not be made or approved under the *Contaminated Land Management Act 1997* that may be relevant to the site contamination management, where relevant these have been considered and include the following:

- Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation. NSW DECCW, 2009. (NSW DECCW, 2009)
- Technical Note: Investigation of Service Station Sites (NSW EPA, 2014a).
- Waste Classification Guidelines Parts 1-4 (Classifying Waste, Immobilisation of Waste, Waste Containing Radioactive Material, and Acid Sulfate Soils). NSW Environment Protection Authority, 2014 (NSW EPA, 2014b).

1.3 Site Auditor

James Davis of Enviroview Pty Ltd, is a NSW EPA Contaminated Land Accredited Site Auditor (NSW EPA Accreditation Number 0301) and conducted the Site Audit.

The Site Audit was initiated by a request from representatives of CSR Building Products Ltd who engaged the Site Auditor for this Site Audit on the 21 May 2018.

1.4 Type of Site Audit

The purpose of the Site Audit is to provide an independent review of the assessment and validation works as presented in the consultant(s) reports. As the Site Audit is not a specific requirement of a development consent or approval given under the *Environmental Planning and Assessment Act 1997* or any other statutory notice or instrument it has not been conducted as a Statutory Site Audit as defined by s 47 of the *Contaminated Land Management Act 1997*.

1.5 Objective and Scope of the Site Audit

The objective and scope of the Site Audit was to independently review the environmental consultant's assessment and validation reports prepared for the site and to determine whether the site is suitable for the proposed land use. The proposed land use is defined as commercial/industrial for the purposes of this Site Audit. A former landfill site, referred to as the former Camide Landfill, is located to the west of the Site Audit area. The potential for landfill gas migration from the landfill site onto the Site Audit area has been assessed as part of the Audit with reports prepared for both the Site Audit area and the former landfill site reviewed by the Site Auditor.

In order to achieve the aim of the Site Audit, the Site Auditor reviewed the work undertaken as reported by the consultants and assessed whether the consultant's work complied with relevant procedures and guidelines and provides a robust basis for determining whether the land is suitable for the proposed land use. The outcome of the Site Audit is this SAR and subsequent conditional SAS, (SAS number 0301-2010) a copy of which is attached to the back (following the appendices) of this report.

1.6 Documents Reviewed

The following documents were reviewed as part of this Site Audit:

DLA Environmental Services (June 2013). *Phase 1 Preliminary Environmental Site Assessment, Lot 1 in DP 106143 CSR Building Products 327-335 Burley Road, Horsley Park.* Reference DLH1121_H0000033, dated June 2013. (DLA, June 2013)

DLA Environmental Services (September 2013). *Phase 2 Detailed Environmental Site Assessment, Lot 1 in DP 106143 CSR Building Products 327-335 Burley Road, Horsley Park.* Reference DLH1121_H0068, dated September 2013. (DLA, September 2013)

DLA Environmental Services Pty Ltd (DLA) (February 2018). *Stage 1 and Stage 2 February 2018 Site Status – 327-335 Burley Road, Horsley Park, NSW 2175*. Report No. DL3109_S008131, dated 22 February 2018. (DLA, February 2018)

DLA (March 2018). *Bund Wall Remediation Strategy, 327-335 Burley Road, Horsley Park, NSW 2175*. Report No. 0449086_S008289, Version 2.0, dated 27 March 2018. (DLA, March 2018)

DLA Environmental Services (June 2018). *Bund Wall Assessment Report, 327 – 335 Burley Road, Horsley Park, NSW, 2175.* Reference 0449086_S008491, dated June 2018. (DLA, June 2018)

ERM (December 2018). *Addendum to Remediation Action Plan: Bund Wall Remediation Strategy, 327 – 335 Burley Road, Horsley Park, NSW 2175.* Reference 0449086_S009295, dated 7 December 2018. (ERM, December 2018)

ERM (December 2019). *Remediation Action Plan, 327-335 Burley Road, Horsley Park NSW 2175.* Reference S010173, dated 20 December 2019. (ERM, December 2019)

ERM (September 2020). *Validation Report, Stage 2A, 6 Johnston Crescent, Horsley Park NSW 2175.* Reference 0449086_S010649, dated 4 September 2020. (ERM, 2020)

Biogas Systems Australia (November 2020). *LFG Management Plan, Environmental Management Plan for Landfill Gas, Horsley Park Landfill*. Reference: 0103_RPT0076.D, dated 13 November 2020. (BSA, 2020)

ERM (August 2021). *Landfill Gas Risk Assessment, Horsley Logistic Park, 327-335 Burley Rd, Horsley Park NSW 2175*. Reference S011005_0565895, dated 10 August 2021. (ERM, August 2021)

ERM (September 2021). *Validation Report, Stage 2B, 12 Johnston Crescent, Horsley Park NSW 2175.* Reference 0449086_S011075, dated 23 September 2021. (ERM, September 2021)

1.7 Site Audit Inspections

While undertaking the Site Audit across the entire CSR Horsley Park site there have been several inspections was conducted. The site auditor is directly familiar and has viewed the areas of the site that this Site Audit relates.

1.8 Audit Correspondence

Correspondence in the form of Site Audit interim advice was issued regarding the Site Audit to clarify and request additional information and to provide guidance on the Site Audit requirements. Site Audit interim advice is provided in **Appendix A**.

1.9 Chronology of Site Assessment and Audit Works

The process of site assessment, Site Auditor review and preparation of final Site Audit Statement and report undertaken at the site has been summarised in the following.

Table 1-1 Summary Site Detail

Date	Action
June 2013	A *Phase 1 Preliminary Environmental Site Assessment* (DLA, June 2013) was undertaken for the wider site area (inclusive of Stage 2A) by consultant DLA.
September 2013	Preparation of *Phase 2 Detailed Environmental Site Assessment* (DLA, September 2013) for the wider property (inclusive of Stage 2A) by DLA.
7 December 2018	*Addendum to the Remediation Action Plan: Bund Wall Remediation Strategy* prepared by consultant ERM.
20 December 2019	The *Remediation Action Plan* (RAP) (ERM, December 2019) was revised by consultant ERM. The RAP addressed both Stage 2 and Stage 3 areas.
15 August 2016	Engagement of James Davis of Enviroview Pty Ltd to conduct a non-Statutory Site Audit for the property (Site Audit is 0301-1619 completed for Stage 1 on 16 August 2019)
September 2016 to September 2021	Soil assessment and validation of the site is completed under the supervision of consultant DLA/ERM.
19 March 2018	Preparation of *Material Assessment and Importation Procedure* (DLA, March 2018). The consultant noted that this report was prepared to fulfil recommendations from the RAP (ERM, December 2019).
21 May 2018	Engagement of James Davis of Enviroview Pty Ltd to conduct a non-Statutory Site Audit of Stage 2B.
31 May 2018	Preparation of Site Audit Interim Advice (0301-1807-IA 01) providing feedback on the *Bund Wall Remediation Strategy* document following a review by Site Auditor James Davis.
5 November 2020	Preparation of Site Audit Interim Advice (0301-1807-IA 04) providing feedback on the *Landfill Gas Risk Assessment* prepared by consultant DBD for the Stage 2 area and the *Environmental Management Plan* (EMP) prepared by Biogas Systems Australia following a review by Site Auditor James Davis.
13 November 2020	Finalisation of the updated EMP (BSA, 2020) by consultant BSA.
22 July 2021	Preparation of Site Audit Interim Advice (0301-2010 IA01) providing feedback on the *Landfill Gas Risk Assessment* prepared by consultant ERM following review by Site Auditor James Davis.
10 August 2021	Finalisation of *Landfill Gas Risk Assessment* (ERM, August 2021) by consultant ERM.
10 September 2021	Preparation of Site Audit Interim Advice (0301-2010 IA02) providing feedback on the revised *Landfill Gas Risk Assessment* and existing EMP (BSA, 2020) following review by the Site Auditor.

Date	Action
17 September 2021	Preparation of Site Audit Interim Advice (0301-2010_03) providing feedback on the *Validation Report* following review by Site Auditor James Davis.
23 September 2021	Finalisation of *Validation Report* (ERM, September 2021) by consultant ERM.
XX October 2021	Preparation of a Site Audit Statement and Site Audit Report for **Site Audit 0301-2010** conducted by James Davis of Enviroview Pty Ltd regarding the remediation and validation works conducted on the site and its suitability for the proposed land use.

2 Site Description

2.1 Site Identification

A summary of the site identification details is provided in **Table 2-1**.

Table 2-1 Summary Site Detail

Street Address:	12 Johnston Crescent, Horsley Park NSW
Development Phase:	Stage 2B
Lot and DP	Lot 204 of DP 1265921
Zoning:	IN1 – General Industrial under Fairfield Local Environmental Plan Amendment (Western Sydney Employment Area) 2009
Local Government Area:	Fairfield City Council
Site Audit Size:	4.027 hectares

Located within **Appendix B** are plans that depict the site. The consultant's **Figure 1** illustrates the location of what is referred to throughout the Site Audit as the Stage 2B area within the wider site. The outline of the former Camide Landfill to the west of the Stage 2B area.

The Site Audit area occupies the central-eastern portion of the property at 327-335 Burley Road, located within the suburb of Horsley Park. The site is located approximately 36 Km west-northwest of the Sydney central business district within the Fairfield City Council local government area.

2.2 Surrounding Environment

Surrounding land uses specific to the Site Audit area are (ERM, September 2021):

- North – Stage 3 of the wider redevelopment area with Burley Road, Old Wallgrove Road, and commercial/industrial land use beyond (warehouse and logistics facilities)
- East – Ecological conservation area with rural residential properties beyond
- South – Stage 2A of the wider redevelopment area and rural residential properties beyond
- West – Stage 2C of the wider redevelopment area, Camide Landfill and rural properties beyond

2.3 Topography and Hydrology

ERM (ERM, September 2021) reported that the Site Audit area lies at an elevation approximately 86 to 96 m Australian Height Datum (m AHD) and described the site as having an overall downwards gradient from east to west. The consultant noted that the wider development area was currently going cut and fill works which was altering the local topography. An earthen bund approximately 10-15 m high runs along the eastern boundary of the Site Audit site.

2.4 Geology and Hydrogeology

The consultant (ERM, September 2021) undertook a review of the 1:100,000 Penrith Geological Series Sheet 9035. The site is reported to be underlain by Bringelly Shale of the Wianamatta Group. The 1:100,000 Penrith Soil Landscape Map indicates the site is in an area of Blacktown Group soils. The consultant reported that there were no known occurrences of acid sulfate soils in the vicinity of the site. The consultant noted that owing to the quarrying activities and redevelopment works conducted at the site, the site has little resemblance to the previous natural soil landscape.

ERM (ERM, September 2021) undertook a search for registered groundwater monitoring bores within a 500-metre radius of the site using the NSW Office of Water Groundwater bore data. The search identified two registered monitoring bores approximately 400 m to the north-west of the site. The recorded groundwater level was 2.89 m bgl. With consideration of the topography and hydrology of the surrounding area, the consultant anticipated that groundwater flow across the site would be expected to flow in a west to north-westerly direction towards Ropes Creek.

As part of the Phase 1 assessment of the broader site, the consultant (DLA, June 2013) undertook a review of the Department of Infrastructure, Planning and Natural Resources (DIPNR) Salinity Potential in Western Sydney 2002 risk map. Groundwater in the general area of the site is classified as having a moderate salinity potential.

2.5 Audit Discussion of Site Description

The information provided by the consultant regarding the site condition and surrounding environment has been checked against and meets the requirements of NSW EPA Guidelines (NSW EPA, 2020). The information provided in the consultant's reports are also consistent with the observations made by the Site Auditor during the site inspections.

Overall, the information provided by the consultants in relation to site condition and the surrounding environment is considered adequate for the purposes of assessing the suitability of the site for the intended purposes. As such, in the Site Auditor's opinion the information provided meets the requirements of the Site Audit.

3 Site History

A review of the site's history was completed as part of the *Phase 1 Preliminary Environmental Site Assessment* (DLA, June 2013) for the wider site area, with Stage 2B occupying the southern portion of the assessment area. Review of land title records by the consultant indicated that the site was registered as Crown Land prior to 1954. The site appears to have been privately owned for a period of time (1954 to 1960), until ownership was transferred to Booths Clay Industries Pty Ltd (1960), following which the site was used for commercial/industrial purposes changing ownership again in 1989 (EKI Pty Ltd) and 1995 (Monier PGH Holdings Ltd). The consultant completed a review of historical aerial photographs dating from 1947 to 2009. Aerial photographs confirmed commercial/industrial activities on the wider site between 1961 and 1970, in particular quarrying activities which continued beyond 2009. It is understood that the wider site has been primarily used for large scale quarrying, brick and tile manufacturing since 1960 until recent times. Prior to its commercial use, the site comprised rural land. An assessment of the former landfill area to the west of the Site Audit site by BSA (BSA, 2019) confirmed that the former landfill was operated by a waste management contractor from May 1990 to February 1994. The landfill was capped and revegetated in 1995. Further assessment and remediation have been undertaken at the former landfill, however, this area falls outside of the Site Audit area. Relevant discussion of assessment of the former landfill area in relation to the Site Audit area have been addressed in **Section 9** and **10**.

3.1 Audit Discussion of Site History

The information required by NSW EPA (1997), in regard to the documentation of the site history, has been provided and meets the requirements of the Site Audit with regard to the objectives of the Site Audit. Unfortunately, aerial photographs were not appended to the *Phase 1 Preliminary Environmental Site Assessment* (DLA, June 2013) for review and verification, however, this is not considered to impact upon the outcome of the Site Audit.

The site history information provided by the consultant has been checked against and meets the requirements of the guidelines made or approved by the NSW EPA.

The consultant DLA (June 2013) also included a review of Section 149 planning certificates issued by Council on 22 July 2009. The certificate did not indicate the presence of any notifications or matters arising under the *Contaminated Land Management Act 1997.* It was noted that the site contains or is in close proximity to a critical habitat, namely a core habitat for Cumberland Plain Endangered Ecological Community. This area of critical habitat is located immediately east of the Stage 2B area (Site Audit area).

The extent of site history information presented by the consultant is considered adequate for the purposes of identifying potential contamination issues at the site.

4 Potential Contaminants of Concern

With respect to the Site Audit area, the consultant DLA/ERM confirmed that potential areas of environmental concern were identified from review of available desktop study information and observations made during a site walkover completed as part of the preliminary investigations at the site. These areas were also refined during site assessment and soil validation works (ERM, September 2021). Areas of environmental concern identified for assessment and validation included the eastern bund and stockpiled material. Contaminants of potential concern identified for assessment and validation of the various areas of the site included heavy metals, total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene, xylenes compounds (BTEX), pesticides (OCP/OPP), polychlorinated biphenyls (PCBs), and asbestos.

The potential for migration of landfill gas from the former Camide Landfill located to the west of the Site Audit area was also identified with the potential for landfill gases such as methane, carbon dioxide, carbon monoxide and hydrogen sulphide noted and assessed by consultant ERM (ERM, August 2021).

4.1 Audit Discussion of Potential Contaminants of Concern

The consultants identified potential contamination issues at the site based on the findings of desktop studies, site inspections and site assessment conducted. The potential contaminants identified are considered to have been suitably comprehensive noting the site location and history. Therefore, the Site Auditor is satisfied that the potential contaminants of concern identified were appropriate for the assessment of the site. The potential contaminants of concern were considered acceptable to enable assessing the suitability of the site for the intended land use and have met the objectives of the Site Audit.

5 Data Quality Objectives

The Data Quality Objectives (DQO) process is used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site. It provides a systematic approach for defining the criteria that a data collection design should satisfy. The USEPA developed the DQO process as a seven-step iterative planning approach, to be undertaken prior to investigative work.

NSW DEC (2017) states that Site Auditors must check that the consultant has properly addressed and adopted DQOs for the investigation or validation program and that the consultant's report includes the following:

- A statement of predetermined DQOs for the field and laboratory procedures, including quantitative DQOs (in this instance these DQO are related to the implementation of adequate field and laboratory QA /Quality Control (QA/QC) and are referred to as Data Quality Indicators for the quantitative assessment of data quality).
- A plan to achieve pre-determined DQOs.
- Procedures to be undertaken if the data does not meet the expected DQOs.

5.1 Audit Discussion on Data Quality Objectives

Data Quality Objectives are a planning tool that is an independent process from the Quality Assurance/Quality Control (QA/QC) processes that are standard in both investigation and validation reports. The DQOs are specific to each project/package of work and should be completed prior to any fieldwork to assist in development of an optimal sampling analytical and quality plan in order to most effectively reach the projects objectives.

DQOs have been established during the assessment and validation works undertaken at the site by consultant DLA/ERM and BSA. Overall, the details of the DQOs conducted across the works completed at the site are sufficient and meet the objectives of this Site Audit.

6 Site Assessment

6.1 Overview of Site Assessment Activities

The following provides an overview of assessment activities undertaken at the site by consultant DLA at the site. A *Phase 1 Preliminary Environmental Assessment* and *Phase 2 Detailed Site Investigation* was prepared by the consultant with the objective being to assess for the likelihood of contamination to exist on the site and whether the site would be suitable for the continued commercial/industrial land use. The Phase 1 and Phase 2 assessments addressed the entire area of 327 – 335 Burley Road which includes the Site Audit area. As such, overviews of the early assessment works provided in the following sub-sections address the broader site, within which lies the Site Audit area. For clarity, the Site Auditor has made reference to the term 'broader site' to clarify aspects of the assessment which relate to the wider site area. Specific information for the Site Audit area has also been included and clearly identified where possible.

6.2 Phase 1 Preliminary Environmental Assessment

DLA undertook at *Phase 1 Preliminary Environmental Assessment* (DLA, June 2013) for the entire property located at 327 – 335 Burley Road, within which the Site Audit area occupies the central-eastern portion. The consultant noted the area of assessment was approximately 72 hectares in size. It was reported that the objective of the assessment was to undertake a review of all existing information on the site and assess the possibility for past and present site activities which may have caused contamination to soils or groundwater at the broader site.

At the time of the assessment in 2013, the broader site was being used for brick manufacturing and associated quarrying activities. Site features across the broader site included process plant, office and amenity buildings, raw material stockpile areas, a clay quarry, sedimentation dames, settling ponds and storage dams, and the former Camide Landfill. The consultant noted that the ground level across the assessment area had been modified with the formation of earthen bunds and excavation of quarry voids. A site plan prepared by the consultant illustrating the location of the various site features described in the *Phase 1 Preliminary Environmental Assessment* is presented in **Appendix C.**

As part of the review of site history, the consultant reported that the following available resources were reviewed:

- records and site plans available from Government and State agencies
- geological and hydrogeological maps
- historical aerial photographs

The consultant reviewed Fairfield City Council Section 149 Certificate (now referred to as a s 10.7 planning certificate) for the entire Lot 1 DP106143. The Section 149 Certificate confirmed the following (among other aspects):

- the land does include or comprise a critical habitat
- the land is not a conservation area
- an item of environmental heritage is not situated on the land

- no matters apply to this property under the *Contaminated Land Management Act 1997*

The consultant completed a search of WorkCover's Stored Chemical Information Database for the broader site which indicated that dangerous goods have been historically stored on the site under licence number 35/017021. WorkCover records indicated that six underground storage tanks (USTs) had been decommissioned at the site. Four of the USTs were removed from the site in 1994. Two tanks (21,000 litres (L) and 5,000 L) remain at the site abandoned in situ[2]. The consultant confirmed the tanks are located to the north of kiln No. 2 and between the front office and No. 6 dryer respectively. In the Phase 1 report conclusion the consultant notes that documents from 1973 and 1974 indicate the possibility of a large number of USTs may remain undetected at the site with hand draw maps accompanying WorkCover records showing an additional 12 USTs at the site. No other documentation is available in relation to these USTs. An above ground diesel storage tank was identified during the Phase 1 assessment in the north of the site adjacent to the weighbridge. All petroleum infrastructure was reported to be located outside of the Site Audit area.

The consultant undertook a search of all records pertaining to Section 58 of the CLM Act 1997 and confirmed that the site, nor any sites in the vicinity, are not encumbered by any notices.

The following site features for the broader site were observed by the consultant as part of the Phase 1 assessment:

- An office building and factory are present, beside which finished products and raw materials are stored for use. The factory and raw material areas are surrounded by earthen bunds. It is understood that the purpose of the bunds is to delineate areas on-site and offer protections from potential noise and dust to surrounding receptors.
- USTs and an above ground oil storage tank were located to the north and east of the factory building, however, these have since been removed.
- A diesel AST is located on the northern part of the site near the buildings.
- The north-east corner of the broader site was the initial quarry area and has since been backfilled. The consultant noted that the backfill material may have comprised overburden generated from newer quarry areas on the site. The time period for backfilling of this quarry area coincided with expansion of the office building and as such, the consultant noted that the same backfill material could have been used to fill and level location for the office area.
- The stormwater detention pond was formerly occupied by septic ponds which formerly treated the sewerage on-site. The replacement wastewater treatment system irrigates treated water onto a portion of land to the west of the factory.
- The existing quarry located in the southern portion of the site is disused and is occupied by a large deep void.

[2] *The consultant notes that anecdotal evidence indicates that this tank may have been removed however confirmation in not available.*

The following potential sources of potential contamination were identified by the consultant:

- Imported uncontrolled fill material utilised on-site for levelling and backfill.
- Migration of contamination from off-site sources of contamination associated with neighbouring commercial and industrial activities (the Site Auditor notes that the consultant does not specifically identify the off-site areas of concern, however, does refer to the presence of Austral Bricks manufacturing facility adjacent to the site in early part of the Phase 1 report).
- Contamination associated with on-site commercial/industrial activities including chemical and oil storage, heavy metals associated with the use of metal oxides as colourants, waste products from the manufacturing process.
- Hydrocarbon contamination associated with the historical on-site storage of fuel.
- Presence of the former Camide Landfill (quarry void filled with non-putrescible waste) in the south-western portion of the site.

Areas of environmental concern noted by the consultant included:

- former USTs
- existing AST
- former oil and chemical storage areas
- the former Camide Landfill
- areas of uncontrolled filling including the filled former quarry area and earthen bunds
- dam sediments
- wastewater treatment system and disposal area
- former wastewater ponds and associated spoil

The consultant concluded that potential sources of land contamination exist at the site from its former industrial use, placement of uncontrolled fill and the storage of chemicals. It was noted that if future site assessments are to be undertaken, they should follow the most relevant land use criteria for industrial/commercial land use (which at the time of reporting of the Phase 1 assessment was NEPM (NEPC, 1999)).

6.3 Phase 2 Detailed Environmental Site Assessment

DLA undertook a *Phase 2 Detailed Environmental Site Assessment* (ESA) (DLA, September 2013) of the broader site which included the Site Audit area. The soil investigation was undertaken in September 2013 and comprised the following:

- A desktop study reviewing available historical and publicly available records for the site (in the Phase 2 report, the consultant reproduced the Phase 1 assessment findings).
- A site walkover inspection to observe current site conditions and identify potential sampling locations.

- Advancement of soil sampling points which included test pit and borehole locations, with six boreholes converted to groundwater monitoring locations. Stockpile and bund soil samples were also collected. Several of the investigation locations were positioned within the Site Audit area.
- Collection of 213 fill and natural soil samples (including quality control samples), four groundwater samples, and 11 surface water samples.
- Sampling and laboratory analysis of select soil and water samples collected during the investigation works.
- Preparation of a report documenting the works.

To assist in determining the current contamination status of the site, the consultant adopted a combined systematic and judgemental investigation approach. Representative samples were collected from fill and natural soils in targeted potential contamination source areas and systematically across remaining areas of the site. The consultant reported that a total of 112 soil sample locations were advanced during the Phase 2 Assessment works however, limited detail was provided in relation to the method of investigation.

Review of the borehole logs provided in an appendix to the report indicate that 16 test pits (TP1 to TP16) were advanced to a maximum depth of 4.2 below ground level by means of an excavator. Borelogs were also provided for 57 borehole locations (BH1, BH3 to BH58), six of which were converted into groundwater monitoring bores (MW1 to MW6). Boreholes were advanced using a truck-mounted drill rig to a maximum depth of 14 m bgl. Summary information provided by the consultant in relation to the six groundwater monitoring wells indicated they were advanced to depths of between 5.4 m and 11.79 m bgl. The consultant noted that, as a minimum, each well reached at least a moisture layer in the soil profile if a water bearing layer or perched water table was not intercepted.

Within the report discussion, the consultant noted that 24 locations within bunds were sampled (Bund-1 to Bund-24). Five surface soil samples were also collected in addition to ten stockpile samples (SP1-1 to SP1-6, SP2-1 to SP2-4 and SP3[3]). The surface soil sample identities were not clearly annotated within the report or accompanying site plan, however, based upon laboratory analytical results it is understood the surface samples were named S1 to S5. All surface soil sample locations were not clearly shown on the site plan.

No details were provided in relation to the collection methodology for the 11 surface water samples (Dam-1 to Dam-11) or four groundwater samples (MW2, MW3, MW5 and MW6) collected for laboratory analysis during the works. While it is unfortunate that the sampling works were not more thoroughly reported upon, the omission of this information is not considered by the Site Auditor to impact the outcome of the assessment or Site Audit.

The investigation sample locations shown on the consultant's figure are included in **Appendix D**. The following is noted with respect to the consultant's investigation location plan:

---

[3] *The report indicates a total of 10 stockpile samples were collected however the site plan indicates 11 stockpile sampling locations.*

- Two TP14 locations are shown on the site plan. This would appear to be a typographic error. Neither TP14 location is within the Site Audit area.
- Locations BH21 and BH42 appear to be omitted from the sample location plan.
- Locations S-runoff-1 and S-runoff-2 were shown on the site plan but not discussed within the report. It is unclear if these locations were representative of soil or water sample locations as they are not included within the scheduled laboratory analysis attached to the Phase 2 report.

Of the investigation locations advanced, the following have been determined to be within the Site Audit area based upon the site plan provided by the consultant (as presented in **Appendix D**): BH4, BH41, TP13, TP14, SP1-6, SP2-1, SP2-2, SP2-3, SP2-4 and SP3. One groundwater monitoring location MW4 was positioned within the Site Audit boundary.

For the investigation works completed, soil samples were collected with samples typically collected from both fill and natural soil horizons. Test pits and boreholes were terminated in both fill and natural soils. Only selected samples were analysed. Soil samples were not screened for the presence of volatile organic compounds (VOCs) during the field works through use of 'headspace' readings and a photoionisation detector (PID). The consultant noted that, instead, all samples were analysed for TRH however, the Site Auditor notes that this does not appear to correlate with sample analysis as reported in the Phase 2 report. While inaccuracies may exist in relation to the assessment of TRH across all samples, the Site Auditor is satisfied that subsequent robust assessment and validation works, as reported, were undertaken for the Site Audit area to supplement these earlier assessment works.

Laboratory analysis of soil and water samples included heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc), TRH, BTEX, PAHs, OCPs, OPPs and PCBs. Not all analytes were scheduled on all samples. The primary laboratory utilised was Envirolab Services, Chatswood, while the secondary laboratory services were provided by SGS Pty Ltd, Sydney.

6.3.1 Soil and Groundwater Assessment Criteria

Assessment activities undertaken at the site compared analytical results against health and ecologically based criteria available at the time of reporting. The assessment works compared soil analytical results to health-based investigation levels (HILs) for commercial/industrial land use (HIL-D), as included in the NEPM (NEPC, 1999, Amended 2013). The consultant did not adopt the HSLs from NEPM (NEPC, 1999, Amended 2013) and instead adopted criteria derived from the *Service Station Guidelines* (NSW EPA, 1994). No discussion was provided with respect to the application of ecological assessment criteria (NEPC, 1999, Amended 2013), Direct Contact criteria for petroleum hydrocarbons (Friebel & Nadebaum, 2011), or Management Limits for petroleum hydrocarbons for commercial/industrial land use (NEPC, 1999, Amended 2013).

Groundwater analytical results were compared with *Water Quality Guidelines* 95 % and 90 % freshwater trigger values (ANZECC/ARMCANZ, 2000) and *Australian Drinking Water Guidelines* (NHRMC/NRMMC, 2004). Threshold levels for some hydrocarbon compounds were adopted from the *Service Station Guidelines* (NSW EPA, 1994). In the absence of

Australian endorsed guidelines, Dutch Intervention Levels (Dutch Target and Intervention Values, 2000) were also utilised for the assessment of hydrocarbons.

While several of the criteria adopted during the early phases of assessment works are no longer current for assessment of investigations [e.g. *Service Station Guidelines* (NSW EPA, 1994)], the Site Auditor notes that they are considered broadly appropriate at the time the investigation work was completed, however, it is noted that the revised NEPM (NEPC, 1999, Amended 2013) assessment criteria were available at the time and could have been adopted by the consultant for the assessment of petroleum hydrocarbons. Overall, the selection of assessment criteria is not considered to impact upon the outcome of the Site Audit when considered in conjunction with subsequent robust assessment and validation works, which were undertaken for the Site Audit area to supplement these earlier assessment works.

The adopted criteria area presented in the consultant's summary tables of criteria provided in **Appendix E**. The consultant did not prepare comprehensive summary tables of soil and groundwater analytical results. Select tables of analytical results were prepared and included within the report text. These tables have been extracted and included in **Appendix E** for reference.

6.3.2 Investigation Results

Site Observations

The consultant confirmed the soil profile across the site typically comprised predominantly grey/orange mottled clay underlain by weathered shale. It was noted that clay fill material has been emplaced throughout the broader site with large stockpiles formed to the centre of the site.

Various earthen bunds are present around the broader site, including along the eastern boundary of the Site Audit area.

Visual or olfactory evidence was not specifically noted for investigation locations within the Site Audit area however, odours and green mottling was noted within proximity to the factory area in the central and east of the site. Hydrocarbon impacts were also observed in the vicinity of the above ground oil tank on the eastern side of the factory and at the storage tanks on the western side of the factory.

Review of the bore log records for investigation locations advanced within the Site Audit area (BH4, BH41, TP13 and TP14) indicates a thin layer of fill or topsoil less than 1 m in thickness overlying natural clays in areas of the site beyond the quarrying activities (TP14). Other locations (BH4, BH14 and TP13) reported the presence of clay fill and shale at depth.

The consultant reported depths to groundwater ranging from approximately 1.43 m to 4.81 m bgl in wells installed across the site. The monitoring well installed within the Site Audit area, MW4, was dry at the time of sampling, The well depth of MW4 is 5.4 m bgl. No discussion was provided in relation to potential groundwater flow directions.

Soil

The consultant prepared a summary table of selected soil analytical results for hydrocarbon detections reported for the wider site. Analytical results for locations within the Site Audit area were not tabulated. Review of the analytical results appended to the report and the consultant's discussion within the report text, confirm that detections of contaminants (heavy metals and PAH) were not reported in excess of the adopted health-based assessment criteria for the Site Audit area. Analysis for other contaminants of concern was not scheduled for samples collected from within the Site Audit area. Available analytical summary tables prepared by the consultant are provided in **Appendix E**.

Groundwater and Surface Water

The consultant prepared summary tables of groundwater and surface water analytical results for the wider site. These tables are reproduced in **Appendix E**.

Monitoring well MW4 located within the Site Audit area was not able to be sampled. With respect to groundwater results from the wider site, the consultant noted that concentrations of hydrocarbon compounds were reported in several wells (MW2 and MW3) at concentrations less than the adopted investigation levels. Monitoring well MW2, located adjacent to the factory and former chemical/potential hydrocarbon UST area, reported exceedances of the adopted investigation levels for TRH (concentration of 6,240 μg/L compared to 600 μg /L) and naphthalene (concentration of 38 μg compared to 16 μg). Detections of PAH were only reported at MW2 with exceedances of naphthalene (38 μg), phenanthrene (15 μg) and anthracene (1 μg) reported when compared with criteria of 16 μg, 2 μg and 0.4 μg respectively. Surface water samples from the dams were not scheduled for TRH/BTEX analysis.

With respect to heavy metals, detections were reported for both groundwater samples and surface water samples with exceedances across the wider site including chromium, copper, lead, mercury, nickel, and zinc.

The consultant noted that the pH of the samples collected from Dam-7, Dam-8 and Dam-9 were elevated above the range of 6.5 to 8.5 set out in the Australian Drinking Water Guidelines.

6.3.3 Quality Assurance/Quality Control

The consultant has reported QA/QC on a broader site-wide basis, and it is therefore difficult to extract and provide a review of data relating to the Site Audit area in isolation. In addition, the Phase 2 report did not contain the QA/QC summary review within the allocated appendix. The following information is based upon the QA/QC measures briefly reported in the main body of the Phase 2 report for the entire program of work undertaken across the wider site area which includes the Site Audit area.

The consultant collected ten soil intra-laboratory duplicates and ten soil inter-laboratory duplicate samples for select laboratory analysis. With consideration to the number of primary samples submitted for analysis (213), a duplicate frequency of approximately 4.7 % each for both intra-laboratory duplicates and inter-laboratory duplicates was achieved.

In the absence of the QA/QC summary review, it is unclear if rinsate blanks were collected during the field investigation. The consultant did note that samples were collected with a decontaminated trowel. No trip spikes or trip blanks appeared to be used during field works. There is no discussion on these quality control samples within the consultant's reporting.

The RPD calculations for duplicates was omitted from the report, however, the consultant did confirm that the results of the field and laboratory QA/QC procedures all complied with the pre-determined DQOs (the Site Auditor notes that the DQOs indicated that rinsate and trip blank and spike samples would be collected, and this does not appear to have occurred). The consultant noted that some heterogeneity was expected for the material type sampled and concentrations of contaminants. The Site Auditor notes that this is not uncommon with fill type materials.

It is anticipated that the consultant undertook a review of laboratory analytical reports and associated QC criteria (holding times, laboratory duplicates, spike recoveries, surrogate standards, and laboratory blanks) within the QA/QC review report which was omitted from inclusion in the Phase 2 report. While the detailed review completed by the consultant is not available, the consultant does note in their reporting that it is considered that the analytical data generated is of an acceptable degree of accuracy and precision for the purpose of assessing the soil quality on the site.

6.3.4 Conclusions and Recommendations

The consultant concluded that the sampling program was considered to be adequate to determine the contamination status of the site in accordance with guidelines at the time of investigation. It was noted that evidence of hydrocarbon contamination was identified at five investigation locations. PAH impacts were reported in isolated fill areas, with the consultant reporting these were likely due to the presence of asphalt for impacts reported in the bund material. The potential presence of a UST(s) was identified in the vicinity of the factory area. Evidence of hydrocarbon contamination was not reported for the Site Audit area.

No comment was made by the consultant in relation to site suitably for requirement for future assessment or remedial planning.

6.4 Bund Wall Assessment

DLA completed a soil assessment of the Southern Bund Wall (DLA, June 2018), located along the eastern boundary of the Site Audit area and extending to the southern boundary of the broader site.

The purpose of the investigation was to evaluate the presence of contamination within the bund wall material and assess the suitability of the material to remain on-site for ongoing commercial/industrial land use.

6.4.1 Scope of Work

The scope of work comprised the following:

- Review of the history and environmental setting of the site, including previous environmental investigation reports.
- Systematic and targeted soil sampling within the southern bund wall in order to achieve representative coverage and target identified AECs.
- Laboratory testing of selected soil samples for a range of potential organic and inorganic contaminants.
- Data interpretation and preparation of a report documenting the works.

6.4.2 Investigation Works

The consultant confirmed that 36 test pits were advanced using an excavator to maximum depths of approximately 5 m bgl. The test pits were systematically located along the bund wall to achieve sufficient lateral coverage.

Soil samples were typically collected at depths of 1 m intervals to a maximum depth of 5 m bgl. The consultant noted that the bund material extended beyond the 5 m depth extent of investigation and further assessment would be needed to characterise the entire bund.

A total of 186 soil samples were collected from the 36 test pits. Test pit locations TP55 and TP56 were located within the Site Audit area. Soil samples were collected by hand directly from the excavator bucket. Soil samples were not screened for the presence of VOCs during the field works through use of ‘headspace’ readings and a PID. Samples were collected into laboratory supplied containers.

The investigation sample locations depicted on the consultant’s figure included in **Appendix F**.

Laboratory analysis of soil samples comprised the following:

- asbestos – 185 soil samples and three material samples
- Total Recoverable Hydrocarbons (TRH) – 186 soil samples
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) – 186 soil samples
- Polycyclic Aromatic Hydrocarbons (PAH) – 186 soil samples
- heavy metals (As, Cd, Cr, Cu, Pb, Ni, Zn) – 134 soil samples
- mercury – 186 soil samples
- Organochlorine and Organophosphorus Pesticides (OC/OP) – 87 soil samples
- Polychlorinated Biphenyls (PCB) – 87 soil samples
- foreign materials – 36 soil samples

The laboratories utilised were Envirolab Services, Chatswood and SGS Pty Ltd, Sydney. Australian Safer Environment and Technology Pty Ltd were utilised for asbestos analysis.

6.4.3 Assessment Criteria

Assessment activities undertaken at the site compared analytical results against health- and ecologically-based criteria available at the time of reporting. The assessment works compared soil analytical results to Health Investigation Levels (HILs) and Health Screening Levels (HSLs) for commercial/industrial land use (HIL-D and HSL-D) as included in the NEPM (NEPC, 1999, Amended 2013). Direct Contact criteria (HSL-D) for petroleum hydrocarbons (Friebel & Nadebaum, 2011), Management Limits for petroleum hydrocarbons for commercial/industrial land use in fine soils (NEPC, 1999, Amended 2013) and ecological criteria (EILs/ESLs) (NEPC, 1999, Amended 2013) were also applied.

The adopted criteria area presented in the consultant’s summary tables of criteria provided in **Appendix G**.

6.4.4 Investigation Results

Site Observations

The consultant confirmed that the southern bund wall was approximately 950m in length and runs immediately parallel to the southern boundary of the site, extending northwards at the south-eastern and south-western corners of the site. The widest point at the base of the bund is approximately 40 m, while the narrowest point at the top of the bund is approximately 5-10 m in width. The bund stands at a maximum height of 10 m and was estimated to comprise a total of approximately 280,000 m^3 to 345,000 m^3 of material.

The material comprising the bund wall was reported to include heterogeneous fill generally consisting of silty brown clay and varying amounts of foreign materials such as rock, concrete, steel, brick, bitumen and wood. Red/grey silty clay was also observed in the western and eastern sections of the bund wall.

Soil Analytical Results

Analytical summary tables prepared by the consultant are provided in **Appendix G**.

The following analytical results were reported.

- All TRH, BTEX, pesticides and BTEX concentrations were reported below the adopted assessment criteria.
- All PAH concentrations were reported below the adopted assessment criteria except for benzo(a)pyrene in 18 samples which exceeded the adopted Ecological Investigation Levels (EIL). None of the exceedances were reported for samples collected from TP55 and TP56, located within the Site Audit area
- Heavy metals concentrations were reported below the adopted assessment criteria except for copper and zinc concentrations exceeding the EIL criteria at five locations, none of which were within the Site Audit area.
- Asbestos as asbestos fines/fibrous asbestos was identified in 11 soil samples. None of the samples were located within the Site Audit area.
- The presence of bonded asbestos was confirmed in the six samples, none of which were located within the Site Audit area.
- Asbestos was also confirmed within three material samples (i.e. fragments of ACM) collected from the bund, but not within the Site Audit area.

6.4.5 Quality Assurance/Quality Control

The consultant provided a review of field and laboratory QA/QC procedures for the assessment works.

The consultant collected 17 soil intra-laboratory duplicates for select laboratory analysis, representing a frequency of 9.4 %. A total of 10 inter-laboratory duplicates were collected, representing a frequency of 5.5%.

Rinsate blanks, trip spike and trip blank samples were not collected as part of the field program. The consultant reported that samples were collected with a decontaminated trowel. All samples were placed in dedicated laboratory supplied sample containers with unique IDs. All samples were accompanied by a chain of custody form and transported in chilled conditions to the nominated project laboratory.

The RPD calculations for duplicates were discussed by the consultant. It was noted that eight RPD exceedances were reported for heavy metals and benzo(a)pyrene. The consultant reported that the outliers were expected to be associated with the heterogenous nature of the soil and uneven distribution of contaminants of concern within the soil.

The consultant completed a review of laboratory analytical reports and associated QC criteria (holding times, laboratory duplicates, spike recoveries, surrogate standards, and laboratory blanks). Outliers noted by the consultant with four of the matrix spike samples reporting recoveries outside of the accepted range due to sample heterogeneity. All other QC criteria were reported to be within acceptable ranges.

Overall the consultant considered that the analytical data generated is representative of the overall site condition.

6.4.6 Discussion and Conclusion

The consultant concluded that based on visual observations and the results of the laboratory analysis, the bund wall material was not suitable to be retained on-site in its entirely under a continued commercial/industrial land use scenario due to the presence of asbestos.

It was recommended that a Remediation Action Plan (RAP) be developed in accordance with the relevant regulatory requirements to address the identified contamination issues to render the material suitable for on-site reuse.

6.5 Audit Discussion of Investigation Works

Investigation Sampling Design

A Phase 1 (DLA, June 2013) and Phase 2 Assessment (DLA, September 2013) has been undertaken across the broader site, with observations and investigation locations advanced within the Site Audit area. The Phase 2 Assessment (DLA, September 2013) has been supplemented with a targeted investigation of the bund wall (DLA, June 2018) located along the eastern boundary of the Site Audit site.

Sampling locations were a combination of systematically and judgementally located in areas of potential concern at the broader site. The bund wall assessment targeted the top 5 m of the bund wall only and only two of the 36 locations were located within the Site Audit area.

It is considered a reasonable number of investigation locations were advanced within the areas of concern within the Site Audit area considering the limited previous uses of the Site Audit area. As only the top 5 m of the bund wall material has been characterised at two locations within the Site Audit site, the contamination status of the underlying material was unknown and required further assessment.

The suite of laboratory analysis for the Site Audit area provides sufficient analytical data to give an adequate assessment of the site contamination status.

The investigation works are supplemented and supported by information gathered during the subsequent material assessment and validation phases of work undertaken in the Site

Audit area. As such, the limitations in coverage across the Site Audit area during historical investigation activities does not impact upon the outcome of this Audit.

Quality Assurance/Quality Control

The consultant utilised the seven-step DQO process as required by the NSW EPA guidelines for Site Auditors (NSW EPA, 2017) during assessment of the site. However, unfortunately due to the omission of an appendix to the Phase 2 report (DLA, September 2013), the consultant did not provide a discussion on the adopted field and laboratory QA/QC program adopted as part of the investigation works. A review of QA/QC was provided however, for the bund wall assessment (DLA, June 2018).

The QA/QC assessment and interpretation was generally found to be adequate. Sufficient inter- and intra-laboratory duplicate samples were collected and analysed as part of the overall site investigation program for a range of key contaminants with a frequency of just under 5 % (4.7 %) achieved for both intra- and inter-duplicates as part of the Phase 2 Assessment across the wider site. The calculated RPDs were not tabulated and included in the Phase 2 Assessment report for review due to an omission in report appendices.

Sufficient duplicate samples were collected as part of the *Bund Wall Assessment* (DLA, June 2018). RPDs summary tables were not provided with the *Bund Wall Assessment Report* (DLA, June 2018) however, discussion of RPD results was included with reported RPD outliers associated with heterogeneity of soil samples.

It is unfortunate that rinsate samples, trip spike and trip blank samples did not appear to be collected across all programs of investigation. The consultant noted that adequate decontamination procedures were in place, however, it would have been beneficial to have collected additional QA/QC samples to support the veracity of this statement. Chain of custody documentation was provided with the investigation reports for most laboratory batches submitted to the nominated laboratories. Several chain of custody records were omitted. While this is unfortunate, it is not considered to impact the outcome of the reported assessment works or Site Audit.

Some discussion of laboratory QA/QC results is provided by the consultant, and where available laboratory QA/QC information has been appended to the report in addition to the laboratory analytical reports. In general, the laboratory QA/QC results indicate that the laboratory analytical program was achieving adequate levels of precision and accuracy during the time when samples from the site were being analysed. As such, the sampling, analytical and quality protocols undertaken by the consultant were considered satisfactory and the data is reliable for the purpose of assessing the contamination status of the site for the proposed land use.

Overall, the Auditors review of the QA/QC measures employed by the consultant and the laboratory was found to provide adequate information for the purpose of characterising the site.

Site Criteria

The assessment criteria utilised for the assessment for the site by DLA (September 2013 and February 2018) were primarily derived from the NEPM (NEPC, 1999, Amended 2013) and ANZECC/ARMCANZ (2000) and are considered appropriate for the purpose of the assessment works. It is noted that the Phase 2 Assessment (DLA, September 2013) adopted

Service Station Guidelines (NSW EPA, 1994) for the assessment of potential petroleum impacts. While this was not ideal given the availability of NEPM HSLs (NEPC, 1999, Amended 2013) at the time of reporting, the Site Auditor does not consider this to impact the outcome of the Site Audit given the extent of subsequent assessment completed at the site (**Section** Error! Reference source not found.**)** with currently endorses assessment c riteria.

It is noted that the Phase 2 Assessment did not assess analytical soil results against ecological assessment criteria (NEPC, 1999, Amended 2013), Direct Contact criteria for petroleum hydrocarbons (Friebel & Nadebaum, 2011), or Management Limits for petroleum hydrocarbons for commercial/industrial land use (NEPC, 1999, Amended 2013), however, the targeted bund wall assessment conducted within the Site Audit area did utilise all the above-mentioned criteria.

Investigation Results

The consultant unfortunately did not consistently provide tables summarising the soil and groundwater laboratory results from the Phase 2 investigation undertaken of the broader site. Summary tables of the analytical results were provided for the *Bund Wall Assessment* (DLA, June 2018). The Site Auditor reviewed the relevant laboratory analytical data for investigation locations within the Site Audit area and found the results to be consistent with those reported by the consultant. Where available, summary tables of data reported by the consultant are provided in **Appendix E** and **G**. The laboratory procedures were appropriate for the identified potential contaminants of concern.

The site plans provided by the consultant identified the sampling locations relevant to the main site features such as the existing buildings, boundaries, and roads. The north arrow appears to be correctly orientated in the sample location plan provided in the report.

The conclusions reached by the consultants regarding the site assessments are considered appropriate given the data obtained from the site. The Phase 2 soil investigation did not identify any concentrations of contaminants of concern in the Site Audit area. The investigation targeting the eastern bund wall within the Site Audit area did not identify chemical contaminations exceeding the adopted human health or ecological criteria or the presence of asbestos in any of the samples collected from within the Site Audit area.

Groundwater assessment (DLA, September 2013) has identified the presence of nitrogen and phosphorus in excess of the adopted threshold criteria within the broader site. Elevated concentrations of heavy metals were also reported in excess of the adopted threshold values; however, the consultant considered these concentrations to be consistent with background metal concentrations. Detections of nitrogen and phosphorus were identified in groundwater from the northern portion of the broader site. No visual evidence of pollution from nitrogen or phosphorus in the form of algal blooms or and eutrophication was reported by the consultant. The Site Auditor concurs that the reported groundwater detections are not considered to represent a risk to human health or the environment. The nearest ecological receptor is located about 850 m off-site, and on-site groundwater uses are not reported. It is the Site Auditor's opinion that with the removal of the transpiration infrastructure located to the north of the site, the site has effectively removed the source of the reported nitrogen and phosphorus detections and the levels of both will reduce over time.

In summary, the soil investigations conducted within the Site Audit area did not identify impacts exceeding the assessment criteria, although further assessment of the bund is required and the area is utilised for the stockpiling of materials from other areas of the site. Detections of heavy metals, phosphorus and nitrogen have been reported in groundwater; however, the Site Auditor considers that the reported groundwater conditions do not affect the suitability of the site for the proposed land use. The conclusions reached by the consultant regarding the site assessment are considered appropriate given the data obtained from the site.

7 Remediation Action Plan

The remedial strategy for the broader area (Stage 2 and Stage 3 areas) was initially presented in a RAP (DLA, 2014) prepared by consultant DLA in 2014. The remedial approach has subsequently been refined through addendums and revisions of the RAP as additional investigations have been undertaken and the remedial requirements have evolved.

The Remediation Action Plan (ERM, December 2019) was prepared for the broader site (327 – 335 Burley Street) which was investigated as part of the Phase 2 Assessment works (DLA, September 2013). Although this broader area includes the Site Audit area, the focus of the remedial strategy presented in the RAP was areas of concern within the Stage 3 development area to the north of the Site Audit area.

The southern/eastern bund wall, which extends along the eastern boundary of the Site Audit site, was identified as a data gap within the RAP (ERM, December 2019). Following additional assessment of the bund wall (DLA, June 2018), a document titled *Bund Wall Remediation Strategy* (DLA, March 2018) was developed detailing the remedial approach for the bund wall and subsequently revised and issued as an Addendum to the RAP (ERM, December 2018).

The Auditor has considered both the RAP (ERM, December 2019) and Addendum to the RAP (ERM, December 2018) and the specific remediation and validation measures proposed for the Site Audit area have been identified and summarised in the following subsections.

7.1 Remediation Objectives

The consultant stated that the remediation objectives for the RAP (ERM, December 2019) was to set remediation goals and document the management procedures and environmental safeguards to be implemented to ensure the site will be rendered suitable for the proposed land use (commercial/industrial) and will pose no unacceptable risk to human health or the environment.

7.2 Remediation Options

In accordance with the Site Auditor Guidelines (NSW EPA, 2017) and the referenced schedule of the NEPM (NEPC, 1999, Amended 2013), soil remediation and management are implemented in the following preferred order:

1. on-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level
2. off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level
3. consolidation and isolation of the soil on-site by containment within a properly designed barrier.
4. removal of contaminated soil to an appropriate site or facility, followed where necessary by replacement with clean fill

The consultant provided discussion regarding the treatment options from the Site Auditor Guidelines (NSW EPA, 2017) which outlines preferred remediation strategies.

With evaluation by the consultant, a remedial strategy was identified for implementation at the site. The proposed strategy comprised excavation and classification of material. Where material was deemed to be suitable, beneficial reuse on-site. Unsuitable material would be disposed off-site to an appropriately licensed waste management facility. The consultant reported that this remedial approach offered a more cost-effective solution while offering end land use suitability with no ongoing liability following completion of the remediation works.

7.3 Proposed Remediation Works

7.3.1 Areas of Environmental Concern

The consultant presented a listed summary of site contamination/areas of environmental concern identified during the Phase 2 environmental assessment of the broader site. The following areas of concern were detailed by the consultant in the RAP as part of their review of the broader site conditions. A site plan prepared by the consultant illustrating the location of areas of environmental concern is provided in **Appendix H**.

- *"Two missing USTs and tank pits at the northern site of the factory;*
- *The presence of a BaP TEQ and PAH concentration hotspot in TP3 at a depth of 0.5m;*
- *Aged oil observed on the eastern side of factory at BH51 in former oil storage area;*
- *The hydrocarbon contamination located on the western side of factory (with possible UST) in the location of BH24 and BH25, including the potential of hydrocarbon contamination of groundwater in the vicinity;*
- *The presence of the AST and minor elevated hydrocarbon concentrations within one sample at a depth of 0.3 m;*
- *The presence of large bunds around the site with potential for ACM to be present, (this would be dealt with as an unexpected find as no ACM was observed or located during investigation);*
- *The pH of dam surface water is outside of the criteria range;*
- *The heavy metals within water of Dams 1-5; and*
- *Sediments within the dams investigated following dewatering of dams".*

The areas of concern within the Site Audit area include the eastern bund wall, which is the continuation of the southern bund wall that extends up the eastern boundary of the Site Audit site.

The consultant also noted that given the site's history of use and disturbance of terrain with the movement of landforms and importation of materials, there is a possibility that not all contamination has been identified or delineated at the site. It was reported that remediation would be completed in a precautionary manner with appropriate management of potential areas of unidentified contamination not previously encountered during investigation works at the site.

7.3.2 Preliminary Remedial Works

The consultant provided details with respect to the proposed remedial works including site set-up and management during the activities. Key aspects of the proposed works relevant to the Site Audit area included:

Site Establishment

- establishment of all necessary plant and equipment
- site set-up including work areas
- establishment of Site Environmental Monitoring Program and environmental protection measures

Site Pre-Works

- demolition of all existing structures on-site
- removal of overlying hardstand
- construction of bunded and hardstand designated treatment areas to preclude run-off onto the surrounding site

Remediation of Surface Water and Sediment Contamination

The consultant noted that while contamination impacts were noted in dam water on-site, no further remediation action was considered necessary as the dam water was not proposed for discharge off-site. It was noted that the dam water was transferred between dams to reduce suspected sediments prior to being used in the factory where that water was used for dust suppression.

It was noted that further assessment of dam sediment would be undertaken following future dewatering of the dams. None of the dams are located within the Site Audit area.

Groundwater Contamination

The consultant noted the hydrocarbon impacts have been identified in groundwater monitoring wells located across the broader site. The consultant reported that a Groundwater Monitoring Program would be developed separately the RAP to address potential management or remediation requirements for groundwater. It is unknown if this plan was prepared.

7.3.3 Remediation of Southern/Eastern Bund Wall

The consultant proposed the following remedial approach to the eastern bund wall, which is the continuation of the southern bund wall extending along the eastern boundary of the Site Audit site.

Excavation of Material

Previously identified asbestos impact would be located using a GPS and demarcated appropriately using signage, barricades, and plastic sheeting. The identified areas of impact are included on the consultants Figure 2 included in **Appendix H**.

Due to the presence of AF/FA in the bund wall, a Class A licensed asbestos contractor would be engaged to conduct asbestos remediation works. The asbestos contractor will ensure appropriate controls (e.g. decontamination unit and PPE) are in place as per their Asbestos Removal Control Plan.

During the remediation process, material that contains ACM, AF/FA and material not identified to be impacted from asbestos will be segregated. The consultant identified four types of material within the bund wall:

1. Soil with no asbestos identified, typically red/orange silty clay with no identified foreign material (Green).

2. Soil with Bonded ACM identified, typically brown silty clay with minor amounts of foreign material (Yellow).

3. Soil with compliant concentrations of AF/FA, typically brown silty clay with minor amounts of foreign material (Orange).

4. Soil with non-compliant concentrations of AF/FA, typically brown and black silty clay with minor amounts of foreign material (Red).

To separate contaminated material from non-contaminated material, it was proposed the four material types are excavated separately. The known locations of the four material types are illustrated on the consultant's figure 2 included in **Appendix H**.

In order to separate material, the following strategy was proposed:

1. Mark out the known locations of the four material types (as above).

2. Yellow, Orange and Red material will be excavated and placed separately in stockpiles (approximately 100m^3 - 200m^3) within the ATA. Stockpile volume will be determined through recording the weight of material transported by on-site machinery by the Civil Contractor.

3. Green material will be excavated under supervision of a Class A licensed asbestos removalist and an ERM representative to identify the potential presence of ACM. If no ACM is visually identified, soils can be placed on-site as fill without remediation. If ACM is identified, the material will be stockpiled in the ATA for remediation.

4. ERM recommended excavations take place in 1m to 2m layers to avoid creating large holes in the ground and to assist in identifying different material types throughout the soil profile.

Where no asbestos is visually identified during excavation works, "Green" material (no identified contamination) is to be reused on-site as fill without additional assessment. However, the consultant noted that if more than 65,000m^3 of material was excavated from "Green areas", then additional sampling would be required to assess the material in accordance with the requirements of the *Material Assessment and Importation Procedure*.

As only the top 5 m of the bund material had been assessed, the proposed excavation approach required the material to be benched at a depth of 5 m to enable assessment of the underlying material. The assessment of underlying material was expected to be conducted in situ through the excavation of test pits down to natural ground level.

It was noted that subject to the development needs of the site and significant volume of bund wall material, relocation of the bund may be required prior to assessment. In this case, visually similar material would be grounded together within the ATA and assessed for remedial requirements of reuse on-site.

Treatment of Contaminated Material

Once impacted material has been stockpiled in the Asbestos Treatment Area (ATA), it will undergo treatment through handpicking of fragments of bonded ACM. Additionally, large pieces of foreign material such as timber and steel would be removed in order to meet geotechnical requirements.

The consultant proposed the following treatment and assessment strategy for contaminated material.

1. Spreading and handpicking of the impacted soils by the removalist, until no visible ACM remains;

    a. Soils are to be spread into pads no thicker than 100mm. Material will be handpicked with multiple transects walked by personnel of the Class A Licensed Removalist. Secondary transects perpendicular to the first are to be undertaken at the completion of picking works;

    b. At the completion of initial handpicking the material can be turned or tined with subsequent handpicking as per step 1;

2. At the completion of handpicking, the pad will be scraped up and re-placed into a stockpile. Each stockpile will be given an identification number and its location will be marked on a map.

    a. ERM will visually inspect the stockpile and subject it to sampling for ACM quantification and AF/FA analysis.

        i. Material passing visual inspection and quantification analysis will be placed at depth on-site (> 2.0 m below ground level);

        ii. Material failing either visual inspection or quantification for the presence of bonded ACM will require further handpicking and assessment until a time that validation sampling confirms the suitability of the material to remain on-site

        iii. Material submitted for laboratory analysis and reporting a detection of AF/FA exceeding land use criteria may undergo additional analysis to delineate the extent of AF/FA contamination. If the stockpile contains visually distinct material types then additional sampling will be conducted from these material types to delineate the extent of AF/FA impacted soils. Following this delineation, material not compliant with land use criteria will require management as contaminated material.

Assessment of Contaminated Material

The consultant stated that all stockpiles within the ATA would be sampled for asbestos quantification. A sampling frequency of one ACM and one AF/FA sample per 70m^3 of material was proposed based on the *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (WA DoH, 2009).

If a stockpile does not comply with AF/FA land use criteria, additional sampling would be conducted to delineate the extent of the contamination.

Reuse of Material

The RAP (ERM, December 2019) and RAP Addendum (ERM, December 2018) stated that only material that complies with the land use criteria can be beneficially reused on-site.

The RAP (ERM, December 2019) required material to beneficially reused on-site to be sampled at a rate of one sample per 1,000 m^3 of excavated material.

The consultant (ERM, December 2018) also recommended that soils containing asbestos at concentrations below the land use criteria be preferentially placed at depths greater than 2.0 m below the final surface level. Furthermore, the top 100 mm of surface soils cannot have visible asbestos in accordance with the validation criteria. A visual inspection during the placement of the material will be required to confirm no visible asbestos is present.

On-site Containment of Contaminated Material

In order to minimise the volume of asbestos contaminated soils that require off-site disposal, the construction of a containment cell is proposed to accommodate AF/FA impacted material that does not comply with the land use criteria.

In the interim period between excavation and construction of the containment cell, impacted material will be stockpiled within the Stage 3 area and covered with plastic or geofabric.

The containment cell will be constructed following receipt of Council approval. The dimensions of the cell will be sufficient accommodate the entire volume of AF/FA contaminated soils and will be determined in consultation with the final development design plans.

Soil excavated to create the containment cell will be stockpiled on-site and an assessment of the suitability of the material to remain on-site from a contamination perspective will be carried out.

Where the soil is not considered suitable for beneficial on-site reuse from a contamination perspective, the material will be classified for on-site containment, and or off-site disposal to landfill

Once constructed, the containment cell will be backfilled with the AF/FA contaminated fill.

Given the nature of the contamination to be contained on-site, contaminant mobilisation and the generation of leachate is not expected, therefore placement of geotextile lining along the base and walls of the containment cell, and installation of a leachate collection system, is not necessary.

Following filling and compaction of the containment cell with AF/FA contaminated fill, a high visibility non-woven geotextile marker layer will be installed over the footprint of the cell such that it covers all potentially contaminated material. The marker layer will extend at least 1 m beyond the perimeter of the cell. Where joins in the marker layer occur, an overlap of at least 200 mm will be required.

Following installation of the marker layer, a minimum 0.5 m thick capping layer, consisting of Virgin Excavated Natural Material (VENM), will be placed over the top of the marker layer.

A Long-term Environmental Management Plan (EMP) will be prepared and implemented to ensure the capping is maintained to a standard that continues to protect human health.

In the case that the containment cell is not of sufficient capacity to contain the entire volume of noncompliant materials generated during remediation works, the material will require classification and off-site disposal in accordance with NSW EPA (2014) Waste Classification Guidelines.

7.4 Remediation Criteria

It is proposed that the site is developed for ongoing commercial/industrial land use. The soil criteria proposed by the RAP (ERM, December 2019) to guide the remedial works for the site were a combination of the HILs for commercial and industrial land use (HIL-D) and the HSLs for vapour intrusion for commercial/industrial land use for clay soil type (HSL-D) as set out in NEPM (NEPC, 1999, Amended 2013). It was proposed that Management Limits for petroleum hydrocarbons for commercial/industrial land use for fine soil types would also be adopted.

With respect to asbestos impacts, the HSLs for asbestos in soil for a commercial/ industrial setting were adopted from the NEPM (NEPC, 1999, Amended 2013).

The RAP (ERM, December 2019) stated that EILs and ESLs for fine soil types for commercial/industrial land use would be adopted from NEPM (NEPC, 1999, Amended 2013).

With respect to aesthetics, the consultant noted the following considerations should be considered for remediation and validation of the site with respect to the upper 1 m of soil:

- no staining
- no odour
- <5 % anthropogenic material

7.5 Proposed Validation Program

The consultant provided a general validation approach for the remediation works.

DQOs were not developed as part of the RAP.

The following areas were noted as requiring validation within the Site Audit site:

- eastern bund wall
- stockpiling areas
- asbestos treatment area (ATA)
- any additional potential unidentified contamination source areas

The consultant confirmed that validation will comprise visual inspection and soil sampling with laboratory analysis.

Validation of Bund Footprint and ATA

Following completion of remediation works, validation sampling of the bund footprint and ATA will be undertaken in accordance with densities outlined in the NSW EPA (1995) *Contaminated Sites: Sample Design Guidelines* noting that twice the number of samples will be required than recommended in Table 4 as asbestos is the contaminant of concern. The number of soil samples required would be determined at the time of validation based upon the size of area.

Visual validation and clearance of the bund and ATA footprint areas will also be conducted by a licensed asbestos assessor.

Cap Validation

Validation of the capping layer will involve visual inspection conducted by a suitably qualified and experienced environmental consultant to document, via photographic evidence, the lateral extent of the marker layer following installation.

Surveys will be carried out by a suitably qualified and experienced contractor following the installation of the marker layer and capping layers to document the lateral extent and elevation of each layer. A copy of the photographic record and survey data will be included in the validation report.

7.6 Validation Reporting

The RAP (ERM, December 2019) required that a validation report be prepared documenting works undertaken and results of the validation testing. The RAP Addendum stated that following the completion of works in the Stage 2 area, an Asbestos Clearance Certificate Report will be prepared documenting the materials handling of asbestos impacted soils and make a conclusion as to the suitability of residual soils in regard to the land use of the site. This consultant noted that the Clearance Certificate will cover the footprint of the southern bund wall, the remediated stockpiles, the footprint of stockpiles that required off-site disposal and the footprint of the ATA.

7.7 Site Management

The consultant provided a Site Environmental and Remediation Works Management Plan as an appendix to the RAP. The plan included site management provisions to reduce the impact of the remediation works on the remediation workforce and surrounding environment (including neighbouring properties).

7.8 Contingency Plans

The contingency plan provided in the RAP (ERM, December 2019) presented procedures for dealing with unexpected or unidentified contamination in soil and insufficient containment cell size or design. An unexpected finds protocol was also provided as an appendix to the RAP (ERM, December 2019).

7.9 Audit Discussion of the Remediation Action Plan

Based on the information contained in the consultant's RAP (ERM, December 2019) and Addendum to the RAP (ERM, December 2018) the Site Auditor finds that the proposed remediation:

- is technically feasible
- is environmentally justifiable given the proposed development activities
- the proposed validation sampling plans are suitably comprehensive to ensure contamination above the remediation criteria is appropriately removed and managed

The RAP (ERM, December 2019) and Addendum to the RAP (ERM, December 2018) identified the areas of contamination located as a result of the previous assessment works at the site that would be subject to remediation. It is noted that based upon the site information available at the time of preparation of the RAP, the area of environmental concern within the Site Audit area was limited to the eastern bund wall, however, the use of the Site Audit area for stockpiling and asbestos treatment required additional remedial measures to be adopted. Appropriate measures were also outlined in the RAP (ERM, December 2019) in the event that unidentified or unknown contamination is found during future works within the Site Audit area.

General requirements for the validation of the remediation program were provided within the RAP and Addendum with a recommendation for the number of validation samples to be determined during the actual works with consideration to the size of the validation surface and requirements of current relevant guidelines. It is anticipated that a robust validation sampling strategy can be further developed and implementation by a qualified environmental professional engaged to complete the validation phase of works based upon the information presented in the RAP and Addendum.

With regards to the proposed validation criteria, appropriate and currently endorsed validation criteria were proposed.

It is the Site Auditor's opinion that the proposed management approach for unexpected finds (and associated strategy for remediation works if required) as detailed in the RAP (DLA, December 2014) and Addendum to the RAP (ERM, December 2018) is appropriate for the proposed land use of the site as ongoing commercial/industrial. In the event that contamination or areas of environmental concern are subsequently identified in the Site Audit area, it is considered that following the successful implementation of the remediation and validation works as detailed in remedial plans, the site can be made suitable for the proposed land use.

8 Remedial Activities and Validation

The following sections describe the reported remedial works and validation program for the Site Audit area (Stage 2A) as reported by ERM in the *Validation Report* (ERM, September 2021).

The works reported in the *Validation Report* (ERM, September 2021) comprise the assessment and validation works of Stage 2B derived soil materials, in addition to the assessment and validation of imported material sourced from the adjacent Stage 1 and Stage 2 (A and C) areas and placed within Stage 2B.

8.1 Material Assessment and Importation Protocol

The *Material Assessment and Importation Protocol* (MAIP) (DLA, March 2018) was prepared in response to recommendations made within the RAP (ERM, December 2019). The RAP recommended that assessment of materials encountered during cut-to-fill works should be undertaken in order to confirm material suitability for beneficial reuse/retention on-site. The MAIP was prepared to document the material assessment protocol and procedures. The MAIP also captured assessment requirements associated with material proposed for importation to the Stage 1 area.

With respect to assessment and on-site reuse of materials, the MAIP noted the following:

- No potentially contaminated material will be reused on-site without prior approval from the Site Auditor and Local Council; and
- Isolation and investigation of the excavation area will occur upon identification of foreign materials such as bitumen, steel, or household waste.

The MAIP proposed sampling of on-site soils at a rate of one sample per 1,000 m^3 with samples collected from in situ locations or existing stockpiles. Soil samples are to be scheduled for analysis for contaminants of concern including heavy metals, TRH, BTEX, PAH, OCP, PCB, asbestos, and foreign materials. It was noted that materials would also be subject to aesthetic assessment. Soil analytical results would be assessed against commercial/industrial land use criteria set out in NEPM (NEPC, 1999, Amended 2013). Daily checks sheets outlining the supervision and quality of soils encountered on-site are to be prepared with documented information including date, personnel details, material description, stockpile origin, placement location, visual description of material and quantity. It was reported that no material would be reused on-site without authorisation of the nominated environmental consultant and Site Superintendent through written confirmation. A non-compliance procedure was set out for the management of soils determined not to be suitable for reuse on-site.

Material importation procedures and controls were also set out in the MAIP with import material to comprise validated VENM and excavated natural material (ENM) only. Prior to acceptance of import material, classification and validation of the proposed imported material is required. VENM classification requirements included a review of source site information, a detailed description of the import material, sampling, analysis, and assessment of analytical results. ENM classification requirements were as set out in the Excavated Natural Material Order 2014.

8.2 Site Validation Criteria

8.2.1 Validation Soil Criteria

It is proposed that the site is used for ongoing commercial/industrial land use. The soil criteria utilised by the consultant to guide the assessment/validation works were a combination of HILs for commercial/industrial land use (HIL-D) and HSL for vapour intrusion for commercial/industrial land use in clay soils (HSL-D). Asbestos in soil criteria were based upon commercial/industrial land use as provided in NEPM (NEPC, 1999, Amended 2013). Management Limits for petroleum hydrocarbons for commercial/industrial land use was utilised for evaluation of the petroleum hydrocarbon analytical results.

EILs and ESLs for commercial/industrial land use were also adopted. Where available, the consultant utilised site-specific data to calculate site-specific EILs for use in the assessment and validation of analytical results.

8.3 Assessment and Validation Works

An overview of the assessment and validation works as reported by the consultant is provided in the following sub-sections.

Remediation works within the Stage 2B area commenced in July 2019 and comprised the following works as reported by the consultant:

- Assessment of excavated fill material and pre-existing stockpiled fill for suitability to remain on-site (June 2018 to June 2020).
- Establishment of the ATA and exclusion zone for remediation works.
- Excavation of southern and eastern bund wall fill material to encounter natural ground and assessment of remediated material for land use suitability (June 2018 to January 2021).
- Ongoing test pit sampling and assessment of bund wall material >5m deep.
- Placement of soils on natural ground under Level 1 Geotechnical Supervision following confirmation that soils were suitable to remain on-site (September 2016 to January 2021).
- Validation of failed stockpile footprints, ATA footprint and bund wall footprint.

Assessment of in situ material including stockpiled material located within Stage 2B was completed and is summarised in **Table 8-1**. Site plans prepared by the consultant illustrating each of the assessment areas and stockpiles identified in **Table 8-1** is presented in **Appendix I**. Further discussion of the validation sampling program and associated results is provided in the following sub-sections.

Table 8-1 Summary of Validation Samples – Stage 2B

Material Source (*Grid Reference (GR))	Placement Area(s)	Sample Date	Sample IDs	Material Description	Total Approximate volume (m3)	Primary Sample No.	Analytical Suite
Bund materials sorted in Stage 2B							
Southern / Eastern Bund wall and Stage 3 Bund wall (including UFEBP10 and UFH4SP)	Stage 2C/Stage 2B with portions in Stage 2A.	Multiple sampling events between 24th June 2018 to 17th December 2019	EB1 to EB37 TP38 to TP75 (multiple samples extending depth of bund wall	Non-homogenous brown silty clay fill with foreign materials, ACM	523,600**	524	TRH, BTEX, PAH, Heavy Metals- all samples OC/OP/PCB, asbestos – selected samples
		18th October 2019	UFEBP10-1 to 10	Dark grey/black sandy clay with red crushed brick, ACM and timber.			
		15th May 2020 6th June 2020	UFH4SP1-1 to 10 UFH4SP2-1 to 10	Wet, brown loamy soil with large amounts of foreign materials such as concrete, brick and metal			
		Multiple Sampling events between 28th June and 12th August 2019	TP64, TP66, TP67, TP95, TP116, TP117, TP33, TP9, TP120, TP8, TP124, BH211, BH218. (multiple samples extending depth of bund wall)	Brown silty clay fill with minor foreign materials, ACM			
		13th October 2020 4th February 2021	S3-Bund -1 to 35 S3-Bund-36 to 41	Brown silty clay fill with minor foreign materials, ACM			
Site sourced VENM and residual brick making materials							
Grade A Shale stockpile (I9)	Lot 204	17th June 2019	GASP-1 to 10	Blue shales	1,500	10	TRH, BTEX, PAH, OC/OP/PCB, Heavy metals, asbestos
Grade A from Eastern Bund	Lot 204	18th October 2019 22nd October 2019 29th November 2019 14th January 2020	O9-1 to 15 TP-P11-1.0 to 5.0	Blue Shales	20,000	20	TRH, BTEX, PAH, OC/OP/PCB, Heavy metals, asbestos
			UFEBP10_B1 to B16, S1-S4, N1-N4 (Multiple samples from various depths)	Brown/red/grey silty clay with some grey shales	31,000	33	TRH, BTEX, PAH, OC/OP/PCB, Heavy metals, asbestos
Topsoil from Stage 1/2	MEZ	13th November 2019	TS-1 to TS-20	Brown silty topsoil	5,000	20	TRH, BTEX, PAH, OC/OP/PCB, Heavy metals, asbestos
Topsoil stockpile from Stage 2	MEZ	19th December 2019	N10SP-1 to 20	Brown silty clay topsoil	5,500	20	TRH, BTEX, PAH, OC/OP/PCB, Heavy metals, asbestos
PGH Stockpiles for clean-up (ITP69)	Lot 204	17th August 2020 18th August 2020 3rd September 2020	CAS, KG Pink, LC, White Clay SP	Blue Shales, Brown/Pink clays	2,000	56	TRH, BTEX, PAH, OC/OP/PCB, Heavy metals, asbestos
Summary of Site sourced VENM and residual brick making materials					**65,000**	**159**	

GR refers to Grid references presented in Figure 2
***Total volume Includes 434,840m³ of materials sorted and Validated in Stage 2A (ERM, 2020, 0449086_S010649).*

All samples were collected by the ERM personnel trained in field investigation techniques. The consultant reported that soil samples were immediately placed within laboratory supplied sample containers. Each sample was allocated a unique sample identity including the samples initials, date of sampling and project number. Each sample was collected using a new pair of disposable nitrile gloves, which were changed between each sample. Chemical samples were placed immediately into chilled cooler to minimise loss of potential volatile components. Samples were reported under chain of custody conditions to the nominated NATA accredited project laboratories, namely Envirolab Services, SGS Australia and Australian Safer Environment and Technology.

8.3.1 Assessment and Remediation of Eastern Bund Wall

Southern, Eastern and Stage 3 Bund Characterisation Assessment

The additional characterisation assessment of the southern/eastern bund was reported in the Validation Report prepared for the adjacent Stage 2A area and reviewed by the Site Auditor as part of the Site Audit report for Stage 2A.

In summary, as bulk earthworks of the Southern and Eastern Bund Wall progressed, depths greater than 5m not previous assessed were able to be accessed and sampled. Test pits below 5m were collected in the approximate locations of the original 36 test pits advanced into the bund wall. This method was progressed over the length of the bund wall.

Soil samples of the bund wall material were collected at the surface and every metre thereafter, at depths where changes to the soil profile were observed, or where there were signs of contamination. A total of 439 soil samples were collected from the bund wall as part of the additional characterisation assessment. An additional 34 samples were also collected of unexpected finds material located within the southern and eastern bund wall.

Subsequent to the southern/eastern bund characterisation works, bund materials from the Stage 3 were also remediated in the ATA located within Stage 2B. A total of 44 chemical samples were collected from test pits of the Stage 3 bund wall material with an additional 41 samples collected from compliant stockpiled soils post-sorting in the ATA.

The consultant reported that a total of 523,600m^3 of bund wall material was assessed (including the volume of unexpected finds UFEBP10 and UFH4) and a sampling density exceeding 1 per 1,000m^3 of material was achieved in accordance with the MAIP.

Chemical samples were placed immediately into a chilled esky to prevent the loss of potential volatile components. The samples were transported under standard ERM chain of custody protocols to the NATA accredited laboratories – Envirolab Services Pty Ltd, ALS, SGS Australia, and Australian Safer Environment & Technology Pty Ltd. All chemical samples were stored and transported at temperature below 4°C

Soil samples were analysed for heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc), TRH, BTEX, OCPs, PCBs, PAHs and asbestos.

Eastern Bund Remediation

Materials were progressively excavated form the bund from top to bottom, moving along the length of the wall. Material was segregated based on the material type in accordance with the RAP (ERM, December 2018).

Excavation works of the bund wall were conducted under full-time supervision by a Class A asbestos contractor (Empire Contracting Pty Ltd AD204967) who visually inspected the materials for the presence of ACM.

Where no asbestos was visually identified during excavation works and materials matched 'Type 1' description as described by the RAP, the material was beneficially reused on-site as fill.

A total of 7,480 stockpiles were generated as part of remediation works of the bund wall material. This included the 6,212 stockpiles validated and reported as part of the Stage 2A works. Each individual stockpile assessed was approximately 70m^3 and all materials were assessed for land use suitability and beneficial reuse on-site when in compliance with the commercial/industrial land use criteria (NEPM, 2013).

A total approximate volume of 434,840 m^3 of material was excavated and sorted from the bund wall. This included all non-compliant material and footprint scrapes. Of the 434,840 m^3 of material a total approximate volume of 412,790 m^3 was assessed as compliant with the adopted site criteria. This material was placed on-site at depths greater than 2 m below the final surface level which was confirmed by GPS equipment attached to the compactors during filling.

Where material was assessed to not be compliant, contaminated soils were temporarily stockpiled in a designated storage area within the Stage 3 area adjacent the site, in accordance with the *Asbestos Management Plan* prepared for the remediation works.

Only soils validated as being suitable for commercial/industrial land use were used as fill material within the Stage 2B area.

Unexpected Finds

During excavation of the southern and eastern bund wall, two unexpected finds were encountered.

The first unexpected find was located in the eastern section of the bund wall, within the Site Audit area, at depth and identified as UFEBP10. Materials comprised approximately 1,200m^3 of dark grey/black sandy clay with red crushed brick, ACM and timber. As no asbestos was previously identified within this section of the bund wall this was identified as a hotspot of ACM. The material was assessed for land use suitability and owing to the presence of bonded asbestos material, was excavated and remediated within the ATA.

The second unexpected find was located within the southern section of the bund wall within Stage 2A, and was identified as UFH4. Materials comprised approximately 10,000m^3 of wet, brown loamy soil with large amounts of foreign materials such as concrete, brick and metal. Materials were visually different to previous materials observed within the southern bund, as such this material was identified as an unexpected find and stockpiled separately within the ATA for assessment.

The combined 11,200 m^3 of unexpected finds were sorted and stockpiled into the ATA and accounted for with the total remediated material volume.

Unexpected Finds locations are provided on the consultant's figures included in **Appendix I**.

8.3.2 Reuse Materials Assessment

Between October 2016 and February 2021 progressive filling works of the Stage 2A area was conducted using a combination of site sourced material from the adjacent development areas and imported material. The consultant reported that a total of approximately 133,750 m^3 of fill (comprising site sourced fill and imported mulch) was placed within the Stage 2B area.

Site Sourced Fill

During the filling works within Stage 2B, ERM collected validation samples from stockpiled material to confirm the suitability of material for backfilling. The material was sourced from Stages 1 and 2 (A,B,C) and was generally observed to comprise VENM described at silt clays and shales. No indications of excess foreign material, staining or odours were observed during the assessment process of the on-site sourced VENM material. A sampling rate of one sample per 1,000 m^3 was adopted and the material was confirmed to be compliant with land use criteria.

8.3.3 Imported Material

A total of approximately 358m^3 of mulch to the Stage 2B area for use in the setback area to the east of the Site Audit site, adjacent the E2 conservation area.

Analysis of the mulch materials were undertaken by Mulgoa Quarries and the materials were shown to comply with the NSW EPA Mulch Order (2016). Compliance documents for the imported material were appended to the *Validation Report* (ERM, September 2021).

8.4 Validation Program

The assessment/validation sampling program conducted at the site was broadly consistent with the proposed strategy outlined in the RAP (ERM, December 2019), Addendum to the RAP (ERM, December 2018) and MAIP (DLA, March 2018). Consultant ERM supervised the excavation and placement of soils during the Stage 2B earthworks. The consultant noted that additional site supervision was provided by consultant Douglas Partners who oversaw placement of material from a geotechnical perspective.

ERM confirmed that a combined visual and sampling approach was adopted for the assessment and validation of in situ, imported and beneficially reused material in the Stage 2B area.

8.5 Validation Results

Analytical summary tables of soil validation results were prepared by the consultant and are provided in **Appendix J**. Site plans illustrating the location of validation sampling points are presented in **Appendix I.**

The following table was provided by the consultant summarising the validation samples collected as part of the remediation works.

8.5.1 Visual Inspection

Visual inspection of the assessed/validated material confirmed that no potentially contaminated material was observed with no evidence of odours, staining, foreign materials and/or ACM observed by the consultant.

8.5.2 Validation Soil Results

Southern/Eastern Bund Wall Characterisation

All soil samples collected from the test pits advanced as part of the southern /eastern bund wall characterisation works analysed for heavy metals, TRH, BTEX and pesticides reported concentrations below the adopted validation criteria. The bund wall characterisation works were reported in the validation report prepared for the Stage 2A area, however, a summary of the results is provided below.

A total of 34 primary test pit samples from the bund wall material reported exceedances of the adopted ESL criteria for B(a)P (1.4 mg/kg) with a maximum concentration of 27 mg/kg. Additionally, sample TP40_6.5 (42mg/kg) reported a minor exceedance of the adopted HIL criteria for B(a)P TEQ (40mg/kg). Calculation of the 95% UCL indicated a value of 5.039 to be used which is compliant with the adopted site criteria. All remaining test pit samples were found to be compliant with the adopted PAH site criteria.

The concentrations of PCBs in sample TP45_9 (11 mg/kg) reported an exceedance of the adopted HIL criteria (7 mg/kg). Calculation of the 95% UCL indicated a value of 3.445 which is compliant with the adopted site criteria.

A total of 56 asbestos soil samples were collected during test pit sampling of the bund wall material at depths greater than 5 m. Of these, two samples reported detections of AF/FA which were below the adopted site criteria. The consultant noted that the need for collecting asbestos samples at every test pit location was not considered necessary as sufficient asbestos sampling post-sorting was conducted of all bund wall material.

It is noted that none of the reported exceedances from the bund wall characterisation were from within the Site Audit area.

Bund Wall Remediation

Validation of the southern and eastern bund wall material was reported in the Stage 2A validation report. In summary, a total of 6,212 asbestos quantification samples were collected from remediated stockpiles of bund wall material. Results indicated a total of 315 stockpiles exceeding the adopted site acceptance criteria for AF/FA (5.07% fail rate). Failed material was temporarily stockpiled in the Stage 3 area awaiting the establishment of the on-site containment cell.

All other remediated stockpiled material was assessed to be suitable for placement at depths greater than 2.0 m below the final surface level of the site.

Additional bund wall material sourced from the Stage 3 area was subsequently remediated within the ATA following the initial bund wall validation works summarised above.

A total of 1,268 asbestos quantification samples were collected from remediated stockpiles of bund wall material sourced from the Stage 3 area. Of the 1,268 stockpiles, a total of 21 stockpiles exceeded the adopted site acceptance criteria for AF/FA (1.66% fail rate). Failed material was temporarily stockpiled in the Stage 3 area awaiting the establishment of the on-site containment cell.

Stockpile Footprint Validation

The footprints of all failed stockpiles were validated following removal from the ATA to the Stage 3 area. Where a footprint sample failed, the area was re-scraped and re-validated.

A total of 23 stockpile footprint samples were collected as part of the stockpile footprint validation works, which includes samples collected following scraping and re-validation.

Following the footprint validation works, the entire floor of the ATA in Stage 2B was scraped and validated as discussed in the following sub-section.

Bund Wall and ATA Footprint Validation

The ATA located within Stage 2B covered an area of approximately 2.66 hectares. A total of 158 asbestos soil samples were collected from the footprint of the ATA (including re-validation samples from failed areas) over multiple sampling events. The sampling density was in accordance with RAP, exceeding a sampling rate of twice the NSW EPA Sampling Design Guidelines (1995).

If samples reported detections of AF/FA or ACM, the area was scraped and re-validated until no detections of asbestos were reported. The consultants Figure 5 in **Appendix I** depict the ATA validation sample locations.

Unexpected Finds

UFEBP10 was uncovered during bulk excavation works of the eastern portion of the bund wall. The material was excavated and stockpiled separately within the ATA for sorting and assessed in accordance with the RAP (ERM, 2019). A total of ten samples were collected and analysed from the excavated material and all results were compliant with the adopted land use criteria. This material was spread, handpicked and stockpiled within the ATA for asbestos quantification sampling.

A Photon Ionisation Detector (PID) was used as a semi-quantitative indicator of the potential presence of volatile contaminants in soil. PID readings ranged between 0.0 and 0.6 ppm and did not indicate the presence of volatile compounds.

UFH4 was uncovered during bulk excavation works of the southern part of the bund wall. A total of 20 samples were collected from the excavated material and all results were compliant with the adopted land use criteria. This material was spread, handpicked and stockpiled within the ATA for asbestos quantification sampling.

Site Sourced Fill Material

All samples collected from the site sourced (including adjacent Stage 1 and Stages 2A and 2C) fill material reported contaminant and asbestos concentrations below the adopted site criteria apart from one sample (UFEBP10_S1_1.0) sourced from the eastern bund wall which exceeded the adopted EIL criteria for benzo(a)pyrene. The 95% UCL was calculated and the result was compliant with the adopted site criteria. Additionally, this material was placed greater than 2 m below the final surface level.

8.6 Waste Classification

No waste soil was removed from the site as part of the remediation works for Stage 2B.

Pre-Classified waste separated and bagged during remediation works were removed from the site by the demolition contractor, including asbestos fragments/piping/sheeting, general rubbish and recyclables (e.g. concrete). The material was generated from the remediation and handpicking of the bund wall material. A total of 2.36 tonnes of pre-classified asbestos waste was disposed at SUEZ Elizabeth Drive Landfill.

A further 3335.22 tonnes of construction and demolition waste including concrete, tyres and other foreign materials was disposed at Blacktown Waste Services.

The following table summarises the pre-classified waste disposed from the site.

Table 8-2 Waste Disposal Information

Waste Type	Disposal Date	Quantity (tonnes)	Disposal Facility
Pre-Classified – Asbestos	25/06/2020	2.36	SUEZ Elizabeth Drive Landfill
R/R MQ C&D	20/07/2020 to 4/11/2020	1117.1	Blacktown Waste Services
Machinery Tyres	5/06/2020 to 9/12/2020	51	Blacktown Waste Services
MQ C&D	22/04/2020 to 9/12/2020	985.12	Blacktown Waste Services
Truck Tyres	5/06/2020 to 9/12/2020	479	Blacktown Waste Services
Tyres	5/06/2020 to 9/12/2020	703	Blacktown Waste Services

MQ C&D – Mulgoa Quarries Construction & Demolition Waste

8.7 Data Quality Assurance and Quality Control

A QA/QC assessment was prepared by the consultant and provided within the *Validation Report* (ERM, September 2021).

The collection of duplicate soils samples collected as part of the southern/eastern bund wall validation activities were reported in the Stage 2A Validation Report which was reviewed by the Site Auditor and found to be acceptable.

As part of the additional validation works conducted subsequent to the Stage 2A reporting, ERM reported that 25 intra-laboratory duplicate soil samples and 10 inter-laboratory duplicate soil samples were collected as part of the validation sampling activities. The consultant noted that the number of intra-duplicate soil samples achieved the recommended minimum requirements of 10%, however, the inter-laboratory soil samples were slightly below (4.1%) the recommended sampling rate of 5%. However, when the duplicate sampling frequencies are considered as part of the previously conducted validation works and sampling for the wider development area, the recommended minimum requirements have been achieved.

Trip spike and trip blank samples were not collected during the validation program given the absence of volatile contaminants of concern. Rinsate samples were also not collected. The consultant provided details of decontamination procedures for all reusable sampling equipment. All samples were placed in dedicated laboratory supplied sample containers with unique IDs. All samples were accompanied by a chain of custody form and transported in chilled conditions to the nominated project laboratory.

The RPD calculations for duplicates samples were discussed by the consultant within the validation report and stated that all RPD calculations conformed with the DQIs.

The consultant completed a review of laboratory analytical reports and associated QC criteria (holding times, laboratory duplicates, spike recoveries, surrogate standards, and laboratory blanks) and concluded the analytical data generated is representative of the overall site condition.

8.8 Ongoing Management

No ongoing soil or groundwater management is considered to be required at the site following completion of the remediation and validation works.

Ongoing monitoring and management of the former Camide Landfill is required and is discussed in **Section 10**.

8.9 Consultant's Conclusions

The consultant reported the following conclusions:

- The validation program and subsequent reporting are considered to be adequate for the assessment purposes to evaluate the suitability of the site for its intended commercial/industrial land use.
- Soils present within Stage 2B and imported to Stage 2B from the adjacent Stage 1 and 2 areas were found to be compliant with the adopted land use criteria and remediation was not required.

8.10 Audit Evaluation of Validation Report

The following sections provide discussion of the Site Audit findings of the material assessment and validation works reported for the Stage 2B area.

8.10.1 Material Assessment and Validation Work Program

The material assessment and validation work program, as documented in the RAP (ERM, December 2019), Addendum to the RAP (ERM, December 2018) and MAIP (DLA, March 2018), and described in the *Validation Report* prepared by ERM (ERM, September 2021) was appropriate for the site.

No contamination was observed during initial investigation of the site (Phase 2), however, the RAP identified the southern/eastern bund as an area of concern likely to contain asbestos. The RAP and Addendum to the RAP recommended that additional assessment should be undertaken during cut and fill activities in the event of unidentified contamination being present at the site. The ground conditions observed during the excavation and assessment works were consistent with expected conditions based upon desktop study findings and site conditions observed during the initial site investigation works, with the exception of the two unexpected finds identified during the bund excavation works.

The consultant undertook the assessment and validation sampling and analysis in a systematic way, meeting the objectives of the remediation and validation program.

8.10.2 Validation Data Quality Assurance and Quality Control

A QA/QC program was implemented to provide data of an appropriate quality and validity to meet the objectives. The program consisted of field QA/QC measures and laboratory QA/QC procedures.

Quality assurance/quality control in the field consisted of the following procedures:

- Supervision of works by experienced environmental consultants.
- Samples collected into appropriate laboratory supplied glass jars and zip lock bags (asbestos samples).
- Transporting samples under chain of custody conditions to a laboratory that is a NATA accredited for the analysis performed.

Laboratory QA/QC analysis was in accordance with the following procedures:

- analysis and reporting of laboratory duplicate samples
- analysis and reporting of laboratory method blank samples
- analysis and reporting of laboratory control samples or certified control samples
- analysis and reporting of laboratory control spikes, matrix spikes and surrogate spikes

The QA/QC undertaken during the validation sampling and reported by the consultant has been reviewed by the Site Auditor in reference to the parameters of precision, accuracy, representativeness, comparability, and completeness (the PARCC parameters) which are a useful tool for evaluating the quality control techniques used.

The following table summarises the QA/QC in relation to the PARCC parameters.

Table 8-3 Validation QA/QC Summary

Quality Indicator	Frequency & Acceptable Quality Parameter	Auditor Review of Quality Parameter Acceptance
Precision		
Intra-laboratory duplicates	Greater than 5% for COPC analytes Results <30-50% RPD	RPDs – acceptable*
Inter-laboratory duplicates	Greater than 5% for COPC analytes Results <30-50% RPD	RPDs – acceptable*
Laboratory duplicates	1 in 20 samples, <50% RPD (>10xEQL), <75% RPD (5-10xEQL), <100% RPD (<5xEQL)	RPDs – acceptable*
Accuracy		
Matrix spikes	70-130%	Acceptable*
Certified reference material or Laboratory Control Sample	70-130%	Acceptable
Surrogate Spikes	70-130%	Acceptable
Representativeness		
Sampling appropriate for media and analytes	As per NEPM and AS 4482.1	Yes
Rinsate blanks	1 per sample batch <LOR	Not collected*

Quality Indicator	Frequency & Acceptable Quality Parameter	Auditor Review of Quality Parameter Acceptance
Trip spikes/trip blanks	1 per sample batch 70-130%/<LOR	Not collected*
Laboratory blanks	1 per 20 or 1 per batch <LOR	<LOR
Samples extracted and analysed within holding times	Extracted within holding times	Yes
Comparability		
Standard operating procedures used for sample collection and handling	Suitable description of sampling procedures	Yes
Standard analytical methods used for all analyses	Analytical methods are referenced and NATA Accredited	Yes
Consistent field conditions, sampling staff and laboratory analysis	Consistent fieldwork team, single primary laboratory used	Yes
Limits of reporting appropriate and consistent	Reporting limits less than the appropriate site criteria	Yes
Completeness		
Appropriate and complete COC documentation	Supplied in report	No
Satisfactory frequency and result for QC samples	As per NEPM and AS 4482.1	Yes
Data from critical samples is considered valid	COC	Yes

*Table Notes: * specifically discussed in Auditor comments*

The QA/QC assessment and interpretation was generally found to be adequate. The field QA/QC program implemented by the consultant included the collection of intra-laboratory and inter-laboratory duplicates at the required frequencies when considered in conjunction with the southern/eastern bund validation works previous reported as part of the Stage 2A works. A limited discussion of RPD results was included with reported.

It is unfortunate that rinsate samples, trip spike and trip blank samples did not appear to be collected across the sampling program. The consultant noted that adequate decontamination procedures were in place, however, it would have been beneficial to have collected additional QA/QC samples to support the veracity of this statement. Considering that the purpose of such samples is to determine the potential for cross-contamination resulting in the error of stating that contamination is more widespread than it actually is this is not a primary concern for the Audit objective. Chain of custody documentation was provided with the investigation reports for the majority of laboratory batches submitted to the nominated project laboratories.

Discussion of laboratory QA/QC results is provided by the consultant, and where available laboratory QA/QC information has been appended to the report in addition to the laboratory analytical reports. In general, the laboratory QA/QC results indicate that the laboratory analytical program was achieving adequate levels of precision and accuracy during the time when samples from the site were being analysed. As such, the sampling, analytical and quality protocols undertaken by the consultant were considered satisfactory and the data is considered to be adequately reliable for the purpose of assessing the contamination status of the site for the proposed land use.

Overall, the Auditors review of the QA/QC measures employed by the consultant and the laboratory was found to provide adequate information for the purpose of characterising and validating the site.

8.10.3Site Validation Criteria

The site remediation validation criteria has been derived from sources approved by the NSW DECCW under s.105 of the *Contaminated Land Management Act 1997* and are considered appropriate for the protection of human health and the environment at the site with consideration to the site land use.

The criteria adopted by the consultant are considered to be appropriate in the context of the primary contaminants of concern.

8.10.4Validation Results

The consultant discussed the results and provided tables that adequately presented the analytical results from the laboratory reports. Spot checks of the concentrations of contaminants reported by the consultant were undertaken and found to be consistent with those reported by the laboratory. The laboratory procedures were appropriate for the identified contaminants of concern and the adopted remediation criteria against which the results were compared.

The site plans and sample location records provided by the consultant were detailed and adequately identified the validation sampling locations in relation to the assessment areas.

The conclusions reached by the consultant in relation to the validation of the Stage 2B material conducted and required in order to render the site suitable for the proposed land use are considered appropriate.

9 Landfill Gas Assessment

A *Landfill Gas Risk Assessment* (ERM, August 2021) was completed for the Stage 2 area by ERM with the report finalised in August 2021 following review by the Site Auditor. An overview of the landfill gas assessment is provided in the following sub-sections with a Site Auditor review provided in **Section 9.8**.

9.1 Objectives and Scope of Work

The objective of the *Landfill Gas Risk Assessment* (ERM, August 2021) was to assess the potential risks of hazardous ground gas to future commercial/industrial site users which have been identified at the adjacent former Camide Landfill located immediately to the west of Stage 2 and establish the gas mitigation measures required for future construction on the site. A site plan illustrating the location of the former landfill relative to Stage 2 is provided in **Appendix K**.

The scope of work undertaken as part of the risk assessment process comprised:

- installation of 13 sub-surface gas monitoring wells
- undertaking four landfill gas monitoring events to measure the ground gas conditions over a variety of barometric pressures and climatic changes
- installation of a continuous gas monitor in a selected well for a period of 8 weeks
- compile a LFG Risk Assessment report in accordance with the relevant NSW Guidelines pertaining to hazardous ground gas conditions

9.2 Field Investigation and Sampling

In order to complete the landfill gas risk assessment, consultant ERM undertook a field investigation and sampling program to supplement the historical data available for the site and address data gaps identified by previous investigations. The activities undertaken as part of these works are summarised in the following subsections.

9.2.1 Well Installation and Monitoring

A total of 13 landfill gas monitoring wells were installed between 20th and 21st August 2020 along the boundary between Stage 2 and the former Camide Landfill. Wells were also located across the Stage 2A area with increasing distance from the landfill to assess the subsurface gas conditions across the entire Stage 2 area. Three wells were also located within the Stage 3 area where access allowed.

The location of the wells are shown on Figure 2 in **Appendix K**.

The wells were drilled to depths between 4 and 6 m, aiming to represent the unsaturated zone below the proposed new buildings. The gas monitoring wells were considered of suitable depth to intercept landfill gas migrating from the landfill that could have potential to impact the proposed development.

Wells were constructed using a 50mm casing with machine-slotted u-PVC, and the annulus backfilled with sand to allow for infiltration of sub-surface gases. Each well was designed with a response zone (slotted interval) across the whole depth of the well, with length of plain pipe just sufficient to provide a good seal. The annulus above the screened interval was filled with bentonite pellets. All wells were fitted with landfill gas caps operating as airtight locking expansion plugs with the capability of connecting field instruments for gas sampling without removing the cap.

9.2.2 Monitoring Methodology

Spot Monitoring

Four sampling events of all 13 gas wells were conducted over an 11 week period between 11 September 2020 and 1 December 2020.

Measurements were taken using a GA5000 landfill gas analyser. The following measurements were recorded:

- Peak methane (CH_4) –the highest CH_4 concentration recorded during sample period.
- Stabilised CH_4 – measures the steady concentration of CH_4 following stabilisation.
- Peak carbon dioxide (CO_2) – the highest CO_2 concentration recorded during sample Zero flow and differential pressure reading on analyser.
- Stabilised CO_2 – measures the steady concentration of CO_2 following stabilisation.
- Minimum oxygen (O_2) –the lowest concentration of oxygen measured during the sample period.
- Stabilised O_2 – measures the volume of O_2 in gas well following purging of built-up gases in the head of the well, reflects the rate of O_2 production/infiltration into the well.
- Carbon monoxide (CO) – the stabilised CO concentration.
- Hydrogen sulfide (H_2S) – the stabilised H_2S concentration.
- Flow rate (L/hr) – measures the internal flow of air through the well into the instrument.
- Barometric pressure (mb) – records the barometric pressure as measured at the monitoring well.
- Relative pressure (mb) – records the difference in pressure between gases built up in the well and the surrounding atmosphere.

Continuous Monitoring

Gas well location GM206 was selected for continuous monitoring using GasClam units.

Hourly gas data was collected for a continuous period of 8 weeks, with the exception of a 2-day period due to maintenance requirements.

Weather Conditions Assessment

The consultant noted that in view of the relatively short sampling period, it was appropriate to consider how the sampling period is likely to represent the potential seasonal variation in weather conditions that might be experienced over a full year, and whether ‘worst-case’ conditions are reasonably represented.

ERM reviewed the meteorological information for the sampling period and considered the sampling dates were reasonably representative of a “normal” September to November conditions. The consultant noted that, as would be expected, the sampling conditions do not fully represent the hottest and driest conditions that are likely to occur over a full year. Lower soil moisture conditions may facilitate increased soil permeability for gas movement, although in the absence of any significant gas pressure, the difference in actual migration is likely to be minimal.

The NSW EPA Hazardous Ground Gas Guidelines (NSW EPA, 2019) recommend that worst-case atmospheric pressure can be estimated from the fifth-percentile three-hour pressure decrease rate for the site, based on a two year dataset from the nearest BoM site with continuous pressure recording. Atmospheric pressure was falling between 9am-3pm on all sampling days, at rates between 0.37 – 1.23 hPa/hr. The fifth-percentile three-hour pressure drop across 2019-2020 at Badgerys Creek weather station was 1.02 hPa/hr and the monitoring was therefore completed on one occasion at worst-case pressure drop conditions. The consultant therefore considered that the pressure conditions during the monitoring period were sufficiently representative of worst-case.

9.2.3 Monitoring Results

Spot Monitoring

Spot monitoring was undertaken across four events on the 11th and 29th September, 30th October and 1st December 2020.

The consultant reported the following results:

- Stabilised methane (CH_4) concentrations ranged between 0 and 0.5 % v/v.
- Carbon dioxide (CO_2) concentrations ranged between 0.8 and 24.8 % v/v.
- Carbon Monoxide (CO) ranged from 0 to 2 ppm.
- Hydrogen Sulfide (H_2S) ranged from 0 to 10 ppm.

The consultant noted that CO_2 readings were highest in the south-east area of the site, with GM209 recording the highest CO_2 readings in three out of four events and GM210 recording the highest reading in the remaining event

Methane was detected in four wells during the monitoring period – GM202, GM204, GM205 and GM302. GM204 and GM205 had methane detections only in the peak readings, and only on one occasion each, with stabilised readings of zero in all remaining events. GM202 and GM302 recorded stabilised methane detections of 0.1 and 0.5 % v/v respectively, on one occasion each, with the other events recording stabilised readings of zero.

Carbon monoxide (CO) and hydrogen sulphide (H_2S) results ranged between 0-4ppm and 0-2ppm respectively, with one reading of 10 ppm recorded for CO in GM209 the exception.

Flow rates were generally low across the site. Across the four monitoring events, flow rates ranged from between -6.5 L/hr to 0.4 L/hr. Wells located in the southwest displayed a greater negative flow than the rest of the site.

The tabulated data from the spot monitoring is included in **Appendix L** and depicted on the Consultant Figure 3 in **Appendix K**.

Continuous Monitoring

The consultant reported that over the eight-week monitoring period, carbon dioxide was detected at concentrations ranging from 2.0% to 20.7%, although it generally fluctuated between approximately 8% and 20%, with a few instances where isolated readings dropped into the 4-8% range. No methane detections were recorded over the monitoring period.

The tabulated data from the continuous monitoring is included in **Appendix L**

Dataset Reliability

The consultant undertook an assessment of whether the period of monitoring was sufficient to draw conclusions about the gas risk, and whether additional monitoring events would have any effect on the conclusions of the risk assessment.

It was noted that the zero to occasional low detection of methane, and the flow rates below 0.5L/hr were very consistent in the dataset. Carbon dioxide concentrations, [which drive the Gas Screening Value (GSV)], were highly variable as is demonstrated by the continuous monitoring data in GM206. ERM considered it likely that the real range of CO_2 in most of the wells is likely to be similar to this. With a flow rate of 0.5 L/hr or below, a GSV of >0.7 (CS3) is not possible as the CO_2 concentration would have to exceed 100%. Therefore, ERM concluded that additional monitoring rounds were not considered likely to change the conclusions of the risk assessment.

9.3 Conceptual Site Model

The consultant provided details of a CSM which was developed based upon available background information. The CSM considered the following:

- **Source** – the primary source of landfill gas is derived from decomposition of buried putrescible waste in the former landfill to the west of the Stage 2 area.
- **Pathways for landfill gas** – the primary pathways for landfill gas from the former landfill to site receptors are via soil, the underlying geology, and as dissolved phase in groundwater. Gas migration in to the enclosed spaces of proposed new buildings and excavations was considered.
- **Receptors** – potential receptors include workers and site users including maintenance personnel and future users of the site.

9.4 Risk Assessment

The consultant completed a landfill gas risk assessment in accordance with NSW EPA (2019), with the focus of the assessment being the risk of sub-surface migration of landfill gas from the adjacent off-site former landfill to the Stage 2 development area.

The Level 2 risk analysis and assessment considered both landfill gas concentrations and flow rates to define a Characteristic Situation (CS) for the site using a calculation of a GSV. The consultant conservatively adopted the highest methane and carbon dioxide readings recorded during the spot monitoring events for the calculation of the GSV and CS.

The monitoring data indicated a maximum flow rate of 0.4 L/hr with a maximum carbon dioxide concentration of 24.8% and maximum methane concentration of 0.5%. The consultant calculated a GSV of 0.0992 (CO_2) and 0.002 (CH_4).

The consultant ERM reported that the calculation of the worst-case GSV utilised the CO_2 concentration from well GM209 (remote from the landfill boundary), and the flow rate from GM201 (near the landfill boundary). ERM considered the possibility that wells GM201-GM206, all installed close to the landfill, represent a different gas regime from the other wells on-site (i.e. 'potentially landfill influenced' versus 'not landfill influenced'). Calculating the GSV from these two sets of wells separately results in a GSV for the wells GM201 – GM206 of 0.068 (GM201 flow, GM203 CO_2) (or 0.083 if GM206 continuous data is utilised).

The remote wells provided a GSV of 0.0248 (utilising GM209 CO_2 and flow of 0.1 L/hr which is common to all four wells (GM207- GM210) in this zone). ERM subsequently considered that the monitoring data did not provide strong evidence that the gas regimes are actually different, and whether there is a real difference between a flow rate of 0.1 L/hr and a flow rate of 0.4 L/hr is uncertain. The consultant did note that the approach demonstrated that if there is any part of the site exceeding the CS1 threshold (0.07) it would be a limited area adjacent to the landfill.

Utilising the guidance values for gas protection presented in Table 8 of the NSW EPA (2019) guidance, the gas protection value of the buildings located on Stage 2 be zero and no gas protection measures would be required for the proposed development.

9.5 Discussion and Recommendations

The consultant provided an overview of the assessment activities completed. A Level 2 risk assessment was completed using both spot monitoring and continuous monitoring data collected from monitoring wells located within Stage 2 and Stage 3 areas of the site adjacent the Camide Landfill. Based upon the findings of the landfill gas risk assessment the consultant concluded:

- There is no significant migration of landfill gas from the landfill.
- The primary origin of the elevated carbon dioxide concentrations is natural organic material in the site fill.

The risk assessment considered the gas concentrations and flow rates, and calculated Gas Screening Values of 0.083 (CS2 'low risk') for the site area close to the landfill boundary, and 0.248 (CS1 'very low risk') for the remainder of the site. In accordance with the NSW EPA Hazardous Ground Gas Guidelines, ERM has considered the risk together with the lines of evidence for the source and migration potential of the gas and concluded that a 'very low risk' classification is the most appropriate for the entire site.

On the basis of the above, gas protection measures were not required for the proposed development.

9.6 Auditor Review

Assessment of landfill gas at the former Camide Landfill has been undertaken as part of the Landfill Closure Plan (LCP) and EPL for some time. Although the *Landfill Gas Risk Assessment* (ERM, August 2021) did not include a detailed review of previous landfill gas monitoring undertaken at the site, the data collected by ERM for the risk assessment generally supports the previous dataset, investigation findings and risk assessments conducted (by ERM and others) and previously reviewed by the Site Auditor.

The landfill gas monitoring network installed as part of the current works provides acceptable coverage along the western site boundary of Stage 2. The monitoring network provides data both along the landfill/Stage 2 boundary as well as across the Stage 2 area (increasing distance from landfill).

The landfill gas monitoring program performed by ERM comprised sub-surface monitoring of the newly installed monitoring well network. This program of monitoring incorporated both spot monitoring of gas wells and continuous of one selected well.

The data collected as part of the ERM field investigations was utilised to prepare the CSM for the site and evaluate potential landfill gas risk. The consultant has identified the presence of landfill gas (methane and carbon dioxide) at the site. Detections of carbon dioxide have also been reported within wells located across the Stage 2 development area and were attributed to the presence of organic matter within the fill materials across the site.

A GSV was calculated for wells along the Stage 2 boundary using both the spot monitoring data and continuous monitoring data. A CS of 1 (very low risk) was determined for the data.

It is anticipated that this protection value would be met through the proposed development incorporating reinforced concrete foundations.

Further discussion on the EMP is provided in **Section 10**.

The consultant provided tables that summarised the monitoring results. These summary tables have been presented in **Appendix L**.

The site plans provided by the consultant identified the sampling locations relevant to the main site features and site boundary. The north arrow appears to be correctly orientated in the sample location plan provided in the report. Available sample location plans have also been presented as appendices to this SAR.

The landfill gas risk assessment has identified a low risk of landfill gas migration from the former Camide Landfill onto the Stage 2 area. There are no building protection measures required for the Stage 2 development.

The Site Auditor agrees with the consultant's findings. In addition, ongoing monitoring of LFG will also be conducted in accordance with the EMP implemented for the Camide Landfill site which requires ongoing monitoring of the performance of the biofiltration trench including monitoring of perimeter wells, gauging of groundwater levels, monitoring of pits and services and ensuring the biofiltration media is monitored to ensure emissions are in accordance with the EPL.

10 Environmental Management Plan

The following sub-sections provide details of the EMP (BSA, 2020) developed for the adjoining former Camide Landfill, located immediately west of the Stage 2 area. A Site Audit evaluation is provided in **Section 10.11**. A complete copy of the EMP is provided in **Appendix M**.

An initial version of the EMP was prepared by Biogas Systems Australia (BSA) in July 2019 to monitor and manage the risk between the former Camide Landfill and the Stage 1 development area to the north. The EMP was subsequently revised and expanded to include the additional monitoring requirements for the Stage 2 area and incorporate the additional gas monitoring wells installed in the interim period.

The EMP was developed with respect to the landfill gas regime at the former Camide Landfill to ensure protection of the surrounding properties (including Stage 1 and Stage 2 areas). Suitability of the Stage 1 and Stage 2 areas requires that the off-site EMP is implemented to ensure that the landfill gas regime identified at the adjoining former landfill is appropriately monitored and managed, in addition to demonstrating ongoing effectiveness of landfill gas protection measures at the former landfill. The Site Auditor completed a review of the revised EMP, which was subsequently finalised in November 2020.

10.1 EMP Objectives

The consultant stated the EMP was developed to provide a landfill gas management plan that can be enforced to ensure protection of surrounding land users from the former Camide Landfill. To achieve the EMP objectives, the following aspects of landfill gas management will be addressed to ensure ongoing suitability of the neighbouring sites for commercial/industrial land use:

- Monitoring and management of subsurface emissions in the perimeter well network.
- Monitoring and management of surface emissions from the landfill cap and the biofiltration trench.
- Monitoring and management of emissions in service pits and enclosed spaces on the landfill and adjacent to the landfill (where possible).

10.2 Site History and Management

The EMP provided an overview of the former Camide Landfill. The site was utilised as a quarry prior to 1990. Landfilling activities occurred between 1990 and 1994 with an estimated 950,000 m^3 of waste material placed within the former quarry. It was reported that commercial and industrial wastes were primarily received, however, some putrescible wastes are also considered likely to also be present.

A *Landfill Closure Plan (LCP)* (Egis, 1999) was developed in 1999 and included an RAP which provided details of landfill assessment activities and key findings in relation to landfill gas. In addition to the LCP, and EPL #123 is active for the site and is regulated by the NSW EPA. The EPL outlines monitoring requirements for the landfill.

The landfill has undergone assessment and investigation since the LCP. Remediation options were developed and remediation works implemented to manage landfill gas emissions identified at the site. The capping of the former landfill was upgraded in 2000 in accordance with the LCP. This resulted in an increase in sub-surface gas migration. A passive landfill gas mitigation measure comprising a gas interception biofiltration trench was installed along the western boundary of the landfill in June 2005 as a trial. A landfill gas monitoring well network was established around the former landfill, with quarterly monitoring of selected wells occurring as part of the EPL #123 in place for the site. The landfill gas monitoring network was expanded with the addition of further wells to allow the assessment of lateral landfill gas migration from the former landfill. The biofiltration trench trial was considered to be a success in 2009 (Dever, 2009) and the remaining trench was constructed around the remainder of the landfill between July 2018 and May 2019. Results from post-installation monitoring at perimeter locations outside of the biofiltration trench indicate a reduction of methane concentrations to below the threshold of 1 % v/v. A *Stage 1 Landfill Gas Risk Assessment* (BSA, 2019) and *Landfill Gas Risk Assessment Stage 2* (DBD, 2020) has confirmed the effectiveness of the northern and western portions of the biofiltration trench.

10.3 Landfill Gas Mitigation Measures

Landfill gas mitigation currently in place at the site comprises:

- a landfill cap comprising 1 m clay and 0.5 m landscaping material
- a biofiltration trench installed around the perimeter of the former landfill

10.4 Controls and Monitoring

The consultant presented procedures designed to monitor landfill gas conditions at the site including:

- ongoing landfill gas monitoring
- routine site inspections

10.4.1 Ongoing Landfill Gas Monitoring

Ongoing monitoring at the site will comprise:

- Quarterly monitoring of gas concentrations in all nominated monitoring wells using a calibrated landfill gas monitor (Geotech GA5000 Landfill Gas Analyser or similar). Landfill gas concentrations and gas flow rates will be collected so that an assessment of landfill gas regime and performance of the landfill gas mitigation measures can be made. Groundwater levels will also be gauged and recorded during this monitoring event.
- Quarterly grid-based monitoring of the former landfill surface including biofiltration trench will be undertaken using a calibrated sensitive landfill gas detector (for example RKI Eagle Multi-Gas Monitoring instrument).
- Quarterly monitoring of enclosed structures (namely utility/service pits) will be undertaken using a calibrated sensitive landfill gas detector (for example RKI Eagle Multi-Gas Monitoring instrument).

A summary table providing details of the various threshold/assessment criteria to be adopted for the evaluation of monitoring data is clearly set out within the EMP.

Monitoring protocols are set out in the EMP for each type of data collection (service pits, sub-surface gas and ambient air/surface monitoring) to ensure consistent monitoring approaches are adopted. The EMP outlines that all monitoring data will be collated and reported on a quarterly basis with recommendations provided, as needed. Upon completion 12 months of monitoring, an annual review and report will be prepared to summarise landfill gas conditions and determine future monitoring/management requirements at the site.

The EMP noted that if reportable environmental conditions are detected during any monitoring event, immediate corrective action will be required. Corrective actions are set out within the EMP (and detailed within **Section 10.5**).

10.4.2 Routine Site Inspections

The consultant notes that during surface gas monitoring, inspection of the site surface will be completed to confirm no large cracks or erosion is noted. The biofiltration media within the trench will also be inspected to confirm it is in good condition, at correct moisture levels and has not subsided. A detailed procedure for management and monitoring of the biofiltration trench is set out in the EMP.

A record of the inspection and any details of further assessment will be prepared on a quarterly and annual basis.

10.5 Corrective Actions and Contingency Planning

The consultant presents corrective actions and contingency planning within the EMP. The following events/triggers are discussed within the EMP:

- Methane detected above 500 ppm in ambient air conditions across the landfill surface.
- Methane detected above 1.0 % v/v in service pits.
- Methane detected above a concentration of 1.25 % v/v sub-surface landfill gas monitoring wells.

The consultant also notes that if monitoring wells are reported to be dry, well integrity and weekly investigation of water levels and gas concentrations will be undertaken to assess the risk of off-site migration and effectiveness of the biofiltration trench. If extended dry conditions are recorded, a landfill gas risk assessment should be completed to reassess potential landfill gas risk to surrounding land users.

10.6 Environmental Records

The EMP sets out that results of ongoing performance monitoring including landfill gas monitoring and routine inspections are to be recorded and maintained by the property owner. Records of non-conformances and environmental incidents with associated corrective actions are also to be maintained.

10.7 Responsibilities

The EMP defined that current responsibility of implementing the EMP lies with the site owner. They must provide sufficient resources, where needed, to comply with the requirements of the EMP. Responsibilities for other parties including Project Manager, Employees and Caretakers of the former landfill, Contractors and Maintenance Workers and an environmental consultant has also been set out within the EMP.

The EMP notes that the current property owner maintains ultimate responsibility for implementation of the EMP. The site owner must ensure that the EMP is provided to any future purchasers of the site, in addition to tenants and contractors.

10.8 Enforcement of EMP

The EMP provides details of the enforceability of the EMP. To ensure legal enforceability of the EMP, details of the EMP and responsible parties is to be included in the sale contract. Specific details of the contract clause are provided in the EMP.

10.9 Currency of the EMP

The consultant notes that the validity of the EMP is based on the site conditions remaining stable as a closed landfill with regular monitoring and maintenance. If conditions on-site change, or conditions on the adjacent properties change, there may be a need to reassess changes to the landfill gas risk assessment. Changes should be included in the annual report. If deemed significant by the environmental consultant, a recommendation to review the risk assessment will be made.

10.10 Review of the EMP

The EMP will be reviewed on an annual basis or following any incident or event which suggests the current EMP is ineffective.

The annual review will include an assessment of the suitability of the perimeter monitoring well network to ensure the EMP objectives are being met. Where necessary, consideration will be given to replace lost/destroyed wells to ensure the adequacy of the perimeter monitoring network meets requirements of the EMP.

In undertaking a revision of the EMP the following will occur:

- The site owner must inform the adjacent site owners of the changes in condition, and
- if required, notify the relevant authorities for environmental and planning changes (including but not limited to the NSW EPA and Council).

10.11 Audit Evaluation of the EMP

The EMP meets the objectives of the Site Audit and is considered an appropriate framework for managing potential risk to the Site Audit area from the former landfill located to the west of the site.

The EMP sufficiently presents the background of the former landfill site and a detailed description of the landfill gas conditions identified at the site.

The EMP is primarily required in order to facilitate ongoing commercial/industrial use of the site. A program of ongoing landfill gas monitoring and inspections are required at the former landfill site to confirm landfill gas conditions at the site remain stable and do not have any impact on the Stage 1 and Stage 2 development areas.

In the Site Auditor's opinion, the proposed monitoring and inspection program effectively mitigates risk to site users in relation to potential risk associated with migration of landfill gas onto the Stage 2 area from the adjoining former landfill to the west. Ongoing risk at the Stage 2 development area is minimal, however, this is contingent on the implementation of the EMP. The EMP has appropriately addressed potential risk factors and the inspections, maintenance controls, and monitoring specified in the EMP should effectively continue to ensure the Site Audit area remains suitable for continued commercial/industrial land use.

While the requirements of the EMP are not specifically included in the EPL, ongoing monitoring is a requirement and subject to ongoing regulation by the NSW EPA.

In addition, there exists a contract for sale of the land with specific provision for the Vendor (CSR) to undertake all obligations relating to the contamination of the site. The provision in the contract enable the purchaser to seek specific performance of that agreement regarding the obligations imposed by the EMP.

The EMP will be attached to the Site Audit Statement which is required to be noted on the planning certificate issued by the Council under s 10.7 of the *Environmental and Planning Act 1979* as required by State Environmental Planning Policy no. 55. Purchasers must be provided the planning certificate as an attachment to the contract for the sale of land under s 52A(2) of the *Conveyancing Act 1919* and *Conveyancing (Sale of Land) Regulation 2010*.

The Site Auditor considers that the EMP is sufficient and appropriate in its detail of the requirements for the long-term management of the Stage 2 site with respect to off-site landfill gas risks.

11 Consideration of Regulatory Requirements

As the Site Audit is not a specific requirement of a development consent or approval given under the *Environmental Planning and Assessment Act 1997* it has not been conducted as a Statutory Site Audit as defined by s 47of the *Contaminated Land Management Act 1997*.

A variation of the EPL to remove the land included in the Site Audit site does not have an impact on the future management of the site from potential land fill gas, however, the continuation of the licence on the lands of the former landfill and regulatory overview of monitoring under those licence conditions is of benefit to the review of risk from landfill gas on the neighbouring lands including the Site Audit site.

12 Evaluation of Site Land Use Suitability

The NSW DEC (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* prescribe that during an assessment of the suitability of a site for an existing or proposed land use in an urban context, Site Auditors must follow the decision-making process for assessing urban redevelopment sites (page 46-47) of the Site Audit Guidelines (NSW EPA, 2017).

For the purposes of this Site Audit the objective is to determine whether the site is suitable for commercial/industrial land use.

The findings of the Site Audit are presented for each requirement of the decision process:

All site assessment, remediation and validation reports follow applicable guidelines.

The documents provided by the consultant meet the requirements of the Site Audit in relation to the *Guidelines for consultants reporting on contaminated sites* (NSW EPA, 2020).

Any aesthetic issues relating to site soils have been adequately addressed.

Aesthetic issues have been considered in the works undertaken at the site with the consultant (ERM, September 2021) confirming the absence of staining, odours, and significant anthropogenic inclusions. Soils have been validated to assess suitability for ongoing commercial/industrial land use. Soil validation has included detailed visual inspection and soil sampling for laboratory analysis for the presence of asbestos (where applicable).

Soils have been assessed against relevant health-based investigation levels and potential for migration of contamination from soils to groundwater has been considered.

Soils were typically assessed against the appropriate and equivalent health-based and ecological investigation levels during assessment and validation works. Validation results have confirmed that soils present on-site meet with the nominated assessment criteria and do not present an unacceptable risk to human health or the environment.

Groundwater was encountered during the initial investigation works of the wider development area with analytical results indicating the presence of several detections of contaminants of concern, likely associated with expected background conditions (several heavy metal concentrations) and historical on-site activities (phosphorus and nitrogen associated with Transpiration Area) within the Stage 3 area to the north of the site. Evidence of gross contamination has not been identified during the extensive cut and fill soil works which included excavation and assessment of fill and soil at the site. Given the reported analytical results for the site across the various programs of work, historical site uses and on-site activities the potential for migration of contamination from soils to groundwater is considered to be low.

Groundwater (where relevant) has been assessed against relevant health-based investigation levels and, if required, any potential impacts to buildings and structures from the presence of contaminants considered.

Assessment of groundwater was completed as part of the Phase 2 Assessment. Evidence of gross contamination was not encountered. Some detections of heavy metals were reported. The Site Auditor considers that the reported groundwater detections are not representative of a risk to human health or the environment. The nearest ecological receptor is located approximately 850 m off-site, and on-site groundwater uses are not reported. Following review of the site setting and historical site activities/uses, it is considered that there was unlikely to be any significant or widespread groundwater contamination on-site and, as such, groundwater has not been subject to additional remedial works or further validation.

Hazardous ground gases (where relevant) have been assessed against relevant health-based investigation levels and screening values.

Assessment of hazardous ground gases (landfill gas and soil vapours) has been undertaken along the western boundary of Stage 2 and across the Stage 2 area. Landfill gas has been identified within sub-surface of the former Camide Landfill site. Gas mitigation measures comprising a biofiltration trench have been installed at the perimeter of the waste cell. Collection of a range of site-specific landfill gas data has allowed development of a reasonably robust CSM. This site-specific monitoring data and landfill gas risk assessment has been utilised to evaluate potential risk to the Stage 2 area from the migration of landfill gas from the adjoining former landfill. The landfill gas risk assessment has identified a low risk of landfill gas migration from the former Camide Landfill onto the Stage 2 area and no specific protection measures were determined to be required for the Stage 2B development. In addition, a program of ongoing landfill gas monitoring and site-specific management requirements with respect to landfill gas risk has been set out in an EMP for the former landfill area. The EMP has been reviewed by the Site Auditor and is considered robust and appropriate for implementation at the site.

Any issues relating to local area background soil concentrations that exceed relevant investigation levels have been adequately addressed in the site assessments report(s).

No local background soil concentrations above the appropriate criteria were identified as an issue.

The impacts of chemical mixtures have been assessed.

No issues relating to chemical mixtures in relation to the identified contaminants of concern are expected.

Any potential ecological risk has been assessed.

While ecological-base criteria were not adopted during early investigation of the site, soils were assessed against the appropriate and equivalent ecological investigation levels during subsequent material assessment and validation works. Investigation results did not exceed the adopted ecological investigation levels confirming that soils at the site do not present an unacceptable risk to ecological health.

Any evidence of, or potential for, migration of contaminants from the site has been appropriately addressed, including potential risks to off-site receptors, and reported to the site owner or occupier.

There is not considered to be any evidence of, or potential for, off-site migration of contaminants identified at the site.

The site management strategy (where relevant) is appropriate including post-remediation environmental plans.

It is considered that all known soil and groundwater contamination has been addressed with the completed assessment and validation works at the site, and further on-site management will not be required.

Landfill gas has been identified at the former landfill site to the west of the Site Audit area. A low risk of landfill gas migrating from the property onto the Site Audit area has been identified. An EMP has been prepared for the former landfill site to address ongoing monitoring/management requirements with respect to landfill gas risk posed to off-site properties including the Stage 2 area. The EMP has been reviewed by the Site Auditor and is considered robust and appropriate for implementation at the site.

The decision-making process prescribed in the NSW EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* (NSW EPA, 2017) has been followed by the Auditor and the site is considered suitable for the proposed commercial/industrial land use, with the implementation of the EMP for the for the former landfill site to the west of the Site Audit area.

13 Conclusions

The investigation works, remediation and validation work reported and reviewed are considered to have met the requirements of NSW DEC (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* and other guidelines endorsed under s.105 of the *Contaminated Land Management Act 1997* and the objectives of the Site Audit.

The Site Auditor is satisfied that the soil, groundwater and landfill gas assessment and validation works have been appropriately undertaken. It is considered that that soils at the site are suitable for the proposed land use. Potential presence of landfill gas has been identified to the west of the Site Audit area and an EMP for the off-site area has been developed. This EMP has been reviewed with respect to the objectives of the Site Audit and is found to be acceptable in meeting the Audit objectives.

The NSW EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* prescribe that during an assessment of the suitability of a site for an existing or proposed land use in an urban context, Site Auditors should follow the decision-making process for assessing urban redevelopment sites provided in the guidelines.

The decision-making process prescribed in the NSW EPA (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* (NSW EPA, 2017) has been followed by the Auditor and the site is considered suitable for the proposed commercial/industrial land use, however, the landfill gas risk assessment conducted has identified a low risk of landfill gas migration from the former Camide Landfill located to the west of the Site Audit area.

In the Site Auditor's opinion, the proposed monitoring and inspection program contained in the EMP effectively mitigates risk to site users in relation to potential risk associated with migration of landfill gas onto the Stage 2 area from the adjoining former landfill to the west. Ongoing risk at the Stage 2 development area is minimal, however, this is contingent on the implementation of the EMP. The EMP has appropriately addressed potential risk factors and the inspections, maintenance controls, and monitoring specified in the EMP should effectively continue to ensure the Site Audit area remains suitable for continued commercial/industrial land use.

While the requirements of the EMP are not specifically included in the EPL that applies to the landfill site, ongoing monitoring is a requirement and subject to ongoing regulation by the NSW EPA. In addition, there exists a contract for sale of the land with specific provision for the Vendor (CSR) to undertake all obligations relating to the contamination of the site. The provision in the contract will operate as a Deed following completion of the sale and will enable the purchaser to seek specific performance of that agreement regarding the obligations imposed by the EMP. The Site Auditor is therefore satisfied that there the EMP can be reasonably enforced.

The EMP will be attached to the Site Audit Statement which is required to be noted on the planning certificate issued by the Council under s 10.7 of the *Environmental and Planning Act 1979* as required by State Environmental Planning Policy no. 55. Purchasers must be provided the planning certificate as an attachment to the contract for the sale of land under s 52A(2) of the *Conveyancing Act 1919* and *Conveyancing (Sale of Land) Regulation 2010*.

In conclusion, a Site Audit Statement will be issued certifying that, in the opinion of the Site Auditor that the site is suitable for commercial and industrial use subject to the implementation of the EMP.

14 Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based in part on information obtained from the client and other parties. Enviroview Pty Ltd or the Site Auditor accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client or amended in any way without prior approval by the Site Auditor and should not be relied upon by other parties who should make their own enquires other than regulatory and planning authorities as required under the *Contaminated Land Management Act 1997* and *State Environmental Planning Policy 55*.

The data used to support the conclusions reached in this report have been obtained by other consultants and have been audited with a reasonable level of scrutiny, care, and diligence. Every reasonable effort has been made to identify and obtain all relevant data, reports and other information that provide evidence about the condition of the site, and those that were held by the client and the client's consultants, or that were readily available. No liability can be accepted for unreported omissions, alterations or errors in the data collected and presented by other consultants. Accordingly, the data and information presented by others are taken and interpreted in good faith.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations reviewed, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analyses selected are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site that was not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur after the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, Enviroview Pty Ltd and the Site Auditor reserves the right to review the report in the context of the additional information.

15 References

ANZECC/ARMCANZ. (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Australian and New Zealand Environmental Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand.

ANZG. (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

BSA. (2020). *LFG Management Plan, Environmental Management Plan for Landfill Gas, Horsley Park Landfill. Reference: 0103_RPT0076.D, dated 13 November 2020.*

CIRIA. (2007). *Assessing risks posed by hazardous ground gases to buildings.*

DBD. (2020). *Landfill Gas Risk Assessment Stage 2, Horsley Park. Reference 0093_DBD_RPT0002A, dated 1 December 2020.*

Dever. (2009). *Passive Drainage and Biofiltration of Landfill Gas: Behaviour and Performance in a Temperate Climate. A thesis submitted in fulfilment of the requirements for a degree of Doctor of Philosopy. School of Civil and Environmental Engineering UNSW Sydney.*

DLA. (December 2014). *Remediation Action Plan, 327-335 Burley Road, Horsley Park NSW 2175. Reference DLH1121_H00280, dated 1 December 2014.*

DLA. (February 2018). *Stage 1 and Stage 2 February 2018 Site Status – 327-335 Burley Road, Horsley Park, NSW 2175. Report No. DL3109_S008131, dated 22 February 2018.*

DLA. (June 2013). *Phase 1 Preliminary Environmental Site Assessment, Lot 1 in DP 106143 CSR Building Products 327-335 Burley Road, Horsley Park. Reference DLH1121_H0000033, dated June 2013. .*

DLA. (June 2018). *Bund Wall Assessment Report, 327 – 335 Burley Road, Horsley Park, NSW, 2175. Reference 0449086_S008491, dated June 2018.*

DLA. (March 2018). *Bund Wall Remediation Strategy, 327-335 Burley Road, Horsley Park, NSW 2175. Report No. 0449086_S008289, Version 2.0, dated 27 March 2018.*

DLA. (March 2018). *Material Assessment and Import Procedure, 327 – 335 Burley Road, Horsley Park, NSW 2175. Reference 0449086_S008246 Version 1, dated 19 March 2018.*

DLA. (September 2013). *Phase 2 Detailed Environmental Site Assessment, Lot 1 in DP 106143 CSR Building Products 327-335 Burley Road, Horsley Park. Reference DLH1121_H0068, dated September 2013. .*

Egis. (1999). *Landfill Closure Plan for Camide Landfill, Horsley Park.*

EnHealth. (2012). *Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards.* Department of Health and Ageing and EnHealth Council Commonwealth of Australia.

ERM. (2020). *Validation Report, Stage 2A, 6 Johnston Crescent, Horsley Park NSW 2175. Reference 0449086_S010649, dated 4 September 2020.*

ERM. (August 2021). *Landfill Gas Risk Assessment, Horsley Logistic Park, 327-335 Burley Rd, Horsley Park NSW 2175. Reference S011005_0565895, dated 10 August 2021.*

ERM. (December 2018). *Addendum to Remediation Action Plan: Bund Wall Remediation Strategy, 327 – 335 Burley Road, Horsley Park, NSW 2175. Reference 0449086_S009295, dated 7 December 2018. .*

ERM. (December 2019). *Remediation Action Plan, 327-335 Burley Road, Horsley Park NSW 2175. Reference S010173, dated 20 December 2019. .*

ERM. (September 2021). *Validation Report, Stage 2B, 12 Johnston Crescent, Horsley Park NSW 2175. Reference 0449086_S011075, dated 23 September 2021.*

Friebel, E., & Nadebaum, P. (2011). *Health Screening Levels for Petroluem Hydrocarbons in Soil and Groundwater* (Technical Report No. 10 ed.). CRC for Contamination Assessment and Remediation of the Environment.

NEHF. (1996). *Composite Sampling.* Adelaide, SA: National Environmental Health Forum South Australian Health Commission.

NEPC. (1999). *National Environment Protection (Assessment of Site Contamination) Measure.* National Environment Protection Council.

NEPC. (1999, Amended 2013). *National Environment Protection (Assessment of Site Contamination) Measure.* National Environment Protection Council.

NHRMC/NRMMC. (2004). *Australian Drinking Water Guidelines.* National Health and Medical Research Council and Natural Resource Management Ministerial Council.

NHRMC/NRMMC. (2011). *Australian Drinking Water Guidelines.* National Helath and Medical Research Council and Natural Resource Management Ministerial Council.

NSW Agr. (1996). *Guidelines for the Assessment and Clean Up of Cattle Tick Dip Sites for Residential Purposes.* NSW Agriculture and CMPS&F Environmental.

NSW DEC. (2005). *Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens.*

NSW DEC. (2007). *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination.*

NSW DECCW. (2009). *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation.*

NSW DECCW. (2010). *Handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system .*

NSW EPA. (1994). *Service Station Guidelines.*

NSW EPA. (1995). *Contaminated Sites: Guidelines for the vertical mixing of soil on former broad-acre agricultural land.*

NSW EPA. (1995). *Contaminated Sites: Sampling Design Guidelines.*

NSW EPA. (1997). *Contaminated Sites: Guidelines for Assessing Banana Plantation Sites.*

NSW EPA. (2014a). *Technical Note: Investigation of Service Station Sites.*

NSW EPA. (2014b). *Waste Classification Guidelines - Parts 1-4 (Classifying Waste, Immobilisation of Waste, Waste Containing Radioactive Material, and Acid Sulfate Soils).*

NSW EPA. (2015). *Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997.*

NSW EPA. (2017). *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* (2nd ed.).

NSW EPA. (2019). *Contaminated Land Guidelines: Assessment and Management of Hazardous Ground Gases.*

NSW EPA. (2020). *Contaminated Land Guideline: Consultants Reporting on Contaminated Land.*

Victoria EPA. (February 2018). *Landfill gas fugitive emissions monitoring guideline, Publication 1684. .*

WA DOH. (2009). *Guidelines for Remediation and Management of Asbestos Contaminated Sites in Western Australia, 2009.*

Appendix A:
Audit Interim Advice

31st May 2018

Ref: 0301-1807-IA 01

Wayne Pasalich
CSR Building Products Ltd
C/- Claire Kollaras
Calibre Consulting
PO Box 8300
BAULKHAM HILLS BC
NSW, 2153

Via email: Claire.Kollaras@calibreconsulting.co

Dear Wayne

RE: Interim Site Audit Advice 01 – Bund Wall Remediation Strategy, 327-335 Burley Road, Horsley Park, NSW 2175.

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor, to conduct a Site Audit in relation to the site identified as 327 – 335 Burley Road, Horsley Park NSW 2175 (the 'Site'), in accordance with the *Contaminated Land Management Act 1997* and relevant guidelines made or approved under s105 of that Act.

The objective of the Site Audit is to provide a Site Audit Report and Site Audit Statement to certify, in the Auditor's opinion, in relation to contaminated land, that the site is suitable for ongoing commercial/industrial land use, in relation to the guidelines made or approved by the NSW EPA.

A Site Audit Interim Advice is provided at a particular stage of the Audit to assist in the management of contamination issues with regard to the requirements of the Site Audit. An Interim Advice does not constitute a Site Audit Statement or a Site Audit Report and should not be considered pre-emptive of the final audit conclusions. A Site Audit Report and Site Audit Statement will be prepared at the conclusion of the Site Audit following the remediation of the Site.

The purpose of this Interim Advice is to provide comments by the Site Auditor regarding the following documents:

- DLA Environmental Services Pty Ltd (DLA) (February 2018) *Stage 1 and Stage 2 February 2018 Site Status – 327-335 Burley Road, Horsley Park, NSW 2175*. Report No. DL3109_S008131, dated 22 February 2018.
- DLA (March 2018) *Bund Wall Remediation Strategy, 327-335 Burley Road, Horsley Park, NSW 2175*. Report No. 0449086_S008289, Version 2.0, dated 27 March 2018.

Review Comments – Stage 1 and Stage 2 February 2018 Site Status

1. General Comment. For the purposes of this Site Audit Interim Advice, the Auditor has reviewed the Site Status report (DLA, February 2018) with respect to data presented for the "Bund wall – south boundary" to provide context for review of the *Bund Wall Remediation Strategy* (DLA, March 2018). When reviewing the analytical data summary tables with information presented in Figure 2 of the *Bund Wall Remediation Strategy* (DLA, March 2018)

some irregularities were apparent in the information as presented which require some clarification.

The consultant should review the data tables and ensure that all detections and exceedances of asbestos impacts are reported and highlighted accurately with respect to exceeding the adopted criteria. For completeness, a summary table presenting field observations of ACM should be prepared. This will assist in understanding site conditions in full.

Several locations, as reported in the summary tables in DLA (February 2018), did not report detections of asbestos. However, these locations are included within the “red zone” in Figure 2 of DLA (March 2018) which is defined as “AF/FA Detected and > Criteria”. Examples of this include locations TP42 and TP43. Clarification required.

Locations TP44, TP45, TP64, TP65 and TP66, for example, are noted as non-detect for asbestos in the summary tables (DLA, February 2018) however are included in the “yellow zone” defined as “Bonded ACM Identified” on in Figure 2 of DLA (March 2018). In this case it may be beneficial to present field observations in a summary table for completeness.

Several other locations are reported as non-detect for asbestos in the analytical summary table but are classified within “yellow zone” and “orange zone” on Figure 2 of DLA (March 2018). The consultant should complete a review and confirm all remedial zone designations are correct and consistent.

The Auditor has not been provided the Stage 2 Investigation report it is possible that some of these apparent inconsistencies will be resolved with the review of that report.

Review Comments – Bund Wall Remediation Strategy

2. Section 1.2 Objectives. The consultant notes that Section 4 of the RAP outlined a remediation strategy for asbestos impacted materials. Review of the RAP in relation to asbestos impacts and remedial strategy for the site indicates limited specific information is included in relation to the management/remediation/validation of asbestos impacts. It may be appropriate that the strategy recognise this and is positioned as an addendum to the RAP.
3. Section 1.1 Background. Paragraph 2 – include a reference to investigation works (author and year of issue). The Auditor will need to review aspects of the investigation report for consistency of information presented in the remediation strategy document.
4. Section 2.1 Property Identification.
    a. Include both the overall site size and the area of interest which is the subject of this report.
    b. Include reference to relevant Local Environment Plan where site zoning details have been obtained.
5. Section 2 Property Description. For context, include a brief description of the property, its current land use, proposed land use and the location of the bund within the site.
6. General comment. Provide a brief site history if known.
7. Section 2.3 Bund Wall Investigation. Provide reference to investigation report. Who conducted the work and when? The report text states 37 test pits were advanced however only 36 locations are shown on Figure 2.
8. Section 3 Statutory Requirements.

a. This section should also include review and commentary on requirements to be met under the current Development Application and State Environmental Planning Policy (SEPP) 55 – Remediation of Land.

b. What Category of remediation will the works fall under? Does this work require any additional planning approvals?

c. Provide details of any notifications which may be required prior to commencement of the proposed works.

d. Include details of any particular licence requirements for those undertaking the works, including but not limited to those involved in the remediation, validation and supervision of works. Alternatively provide a cross reference to where this information is contained elsewhere within the report.

9. General Comment. It is noted from brief review of the Phase 1[1] (DLA, June 2013) report prepared for this site, that the site is, or is close to, critical habitats. This information is included on the Section 149 presented as an appendix to the Phase 1 report and is also noted in the report text. Clarification is required as to how this impacts upon the proposed works and considerations for remediation under SEPP 55.

10. General Comment. Set out Data Quality Objects using the seven-step process.

11. Section 4 Southern Bund Wall Remediation Strategy. It would be beneficial to provide a broader over-arching introduction to the proposed remedial strategy. For example, is an excavate, segregate, dispose/reuse approach proposed? Specific details are included on the proposed approach. It is suggested to reduce some detail here and include as required in the relevant sub-sections of the remedial approach methodology.

12. Section 4.1 Site Establishment.

a. How will areas of impact be identified? Have they been marked on-site previously during investigation? Are survey points available?

b. Are the areas of asbestos impact located together? Will a single exclusion zone be formed or multiple zones? Will a single Asbestos Treatment Area (ATA) be established for the whole site or will one ATA per exclusion area be formed if several exclusion areas are to be established?

c. The second paragraph suggests that sediment controls are recommended. The wording of this should be adjusted to make this an obligatory requirement, rather than a recommended action.

d. Cross reference to Section 5.2.1 and Section 6.4 are incorrect, these numbered sections do not exist. Update accordingly.

13. Section 4.2 Segregation. It is noted in Step 3 that the "Green" material will be excavated and if no ACM is identified it will be placed on-site as fill with no remediation undertaken. How will this material be inspected for ACM? What protocol will be adopted (e.g will it be inspected as it is excavated, or will it be temporarily stockpiled or spread out?). Has this material been adequately assessed during investigation stage to determine that it is suitable for use as fill on-site? What frequency of sampling has been undertaken to date to confirm that there is no risk of AF/FA present in this material prior to reuse? Given the unknown

[1] DLA (2013) *Phase 1 Preliminary Environmental Site Assessment. Lot 1 in DP106143, CSR Building Products, 327-335 Burley Road, Horsley Park*, Reference: DLH1121_H0000033, dated June 2013.

history of bund and its heterogeneous nature (i.e. widespread impact rather than concentrated in a single area), this risk should be addressed in full.

14. Section 4.3 Remediation.
    a. At what stage will samples be collected for AF/FA analysis? This is not clear in the bullet point stages set out in this sub-section. It is assumed that this step will be completed prior to placement at depth for material passing visual inspection?
    b. Outline what is meant by placement 'at depth'.
    c. Cross reference to Section 5.4 should be updated as this section heading does not exist.
15. Section 4.4 Assessment Procedure.
    a. With consideration that AF/FA has been identified the reduced sampling frequency AF/FA when not initially identified in the bund material is not supported. The frequency of sampling should me the guidelines requirements in this regard.
    b. Bullet points – for clarity, it would be beneficial to cross reference these with the colour designation adopted under Section 4.2 (if applicable).
    c. How will stockpile volumes be determined?
    d. How will soil sample locations be recorded for future reference during the characterisation and validation activities?
    e. The proposed approach for the delineation of AF/FA impact by splitting stockpiles in quadrants and collecting one additional sample is not supported for a relatively homogenous material. Stockpiles may be separated by some visual indicator that there are differences in the material and that may justify this approach but not arbitrary splitting of stockpiles to 'play the probabilities'.
    f. Clarification required on the collection of wall and base samples? Does the consultant mean wall samples where the quadrant of material adjoined the remainder of the stockpile, with the base sample collected from the former footprint? Clarification required.
    g. To further enhance the validation sampling protocol which currently states one sample per wall (assuming two walls) and base, it would be beneficial to also provide an indicative frequency of validation sampling per m^2 as an alternative guide.
    h. Include cross-reference within the report to where information is provided on sampling and analysis for waste classification of the material.
    i. Will the stockpiled material undergo analysis for other contaminants of potential concern? Clarification required. Provide full justification if no further analysis is proposed prior to reusing the material on-site. How will suitability of the material from a contamination perspective for use on site be demonstrated? Is adequate historical information available?
16. General Comment. There is no discussion on the validation of the bund footprint following completion of the work. Provide details including visual inspection protocol, frequency of sampling and proposed suite of laboratory analysis.
17. Section 4.5 Sampling. Outline what quality controls, if any, will be put in place.
18. Section 4.5.5 Sample Transport. Provide the name of the project laboratory if known.

19. Section 4.6 Re-use of material. Provide specific details of conditions for placement at depth. What depth(s) must the material be placed at? Are there any areas on site where the material should be preferentially placed based on landuse? Is a marker layer require? Provide cross-reference to sub-section within the report where land use criteria are provided.
20. Section 4.7 Disposal of Non-Compliant Material. Provide proposed sampling frequencies and suite of analysis for waste classification.
21. Section 4.8 Reporting.
    a. Clarify if an asbestos clearance will be provided for the bund as a whole or for the various stockpiles (and their respective footprints) generated during the works? Will clearance certificates also be provided for the asbestos treatment areas?
    b. What is meant by a Compliance Certificate Report? Is this similar to a Validation Report? Future reporting on the works should consider the reporting requirements of *Guidelines for Consultants Reporting on Contaminated Sites* (NSW OEH, 2011).
    c. The NSW DEC (2017) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition)* prescribe that during an assessment of the suitability of a site for an existing or proposed land use, Site Auditors must follow the decision-making process for assessing urban redevelopment sites (page 46-47) of the Site Audit Guidelines (NSW, 2017). The consultant should consider this checklist when reporting on the proposed works to be completed and ensure relevant items on the checklist are clearly addressed. This will assist in the audit process.
22. Section 5.1.1 Visual Asbestos Clearance Inspection. Clarify the qualifications/licence requirements for the person completing clearance inspections.
23. Section 6.0 Site Criteria. Include footnote for Table 4a explaining "*" in second row of the table.
24. Section 7.1 Exclusion Zone. Update cross reference to sub-section 3.2.2 as it is incorrect.
25. Section 7.3 Placing of Soils. Clarify what is meant by "at depth". It is noted that Section 4.9 includes placement of material as fill at depths greater than 3 metres below ground level. Confirm if this is correct and update accordingly throughout the report for clarity.
26. Section 8.1 Essential Responsibilities Requirements.
    a. The section heading should be rephrased as it currently is unclear/poorly worded.
    b. This section contains a list of information but does not relate it clearly to the relevant aspects of the proposed works. It currently provides limited benefit to the document. Perhaps the section can be restructured such that the various phases of work are outlined and the relevant key requirements for each phase is identified.
27. Section 8.2 On-site Responsibilities. Confirm the responsibilities of the licenced asbestos removalist.
28. General Comment. Include a references section.
29. Figures.
    a. Include a site boundary on both plans.
    b. Key features have not been identified on Figure 2.

c. Are there any areas where both ACM and AF/FA have been identified. How are these presented on the plan?

d. Include a site plan illustrating proposed material handling areas and exclusion zones.

e. Refer to comments provided under the Site Status report (DLA, February 2018).

I look forward to seeing the outstanding points addressed. If you require additional information or clarification, please do not hesitate to contact me. Thank you for your time in regard to this matter.

Yours sincerely

James Davis
NSW EPA Contaminated Land Site Auditor
Enviroview Pty Ltd

Ref: 0301-1807-IA 04

5th November 2020

Wayne Pasalich
CSR Building Products Ltd
C/- Claire Kollaras
Calibre Consulting
PO Box 8300
BAULKHAM HILLS BC
NSW, 2153

Via email: Claire.Kollaras@calibreconsulting.co

Dear Wayne

RE: Interim Site Audit Advice 04 – Review of Landfill Gas Risk Assessment and Environmental Management Plan, Stage 2, 327-335 Burley Road, Horsley Park, NSW 2175.

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor, to conduct a Site Audit in relation to the site identified as 327 – 335 Burley Road, Horsley Park NSW 2175 (the 'Site'), in accordance with the *Contaminated Land Management Act 1997* and relevant guidelines made or approved under s105 of that Act.

The objective of the Site Audit is to provide a Site Audit Report and Site Audit Statement to certify, in the Auditor's opinion, in relation to contaminated land, that the site is suitable for ongoing commercial/industrial land use, in relation to the guidelines made or approved by the NSW EPA.

A Site Audit Interim Advice is provided at a particular stage of the Audit to assist in the management of contamination issues with regard to the requirements of the Site Audit. An Interim Advice does not constitute a Site Audit Statement or a Site Audit Report and should not be considered pre-emptive of the final audit conclusions. A Site Audit Report and Site Audit Statement will be prepared at the conclusion of the Site Audit following the remediation of the Site.

The purpose of this Interim Advice is to provide comments by the Site Auditor regarding the following documents:

> DBD Environmental. *Landfill Gas Risk Assessment Stage 2, Horsley Park*. Report No. 0093_DBD_RPT0002A, dated 2 September 2020.
>
> Biogas Systems Australia. *Environmental Management Plan for Landfill Gas, Horsley Park Landfill.* Report No. 0103_RPT0075.C, dated 2 September 2020.

Review Comments

Landfill Gas Risk Assessment

1. Section 1 Introduction. It is stated that the risk assessment is based on works previously conducted, however the scope of works and report details the installation of wells and monitoring conducted for the purpose of the risk assessment. Please clarify
2. Section 1.1 Background.
   a. Confirm the distance between the waste, the Stage 2 boundary and proposed development.
   b. I generally advise consultants to not directly make reference to a site audit and the process of a site audit as it is an independent review of the report and the report objectives.
3. Section 2.1 Stage 2 Site Summary of Previous Investigations.
   a. The list of reports does not include the validation report for the Stage 2 area or southern bund. The Stage 1 validation report is listed and its relevance to the to the Stage 2 risk assessment is unclear. Clarification required.
   b. It is stated that a summary of the most relevant information is presented in the following section. It is unclear what information this is referring to.
4. Section 2.2 Former Camide Landfill Summary of Relevant Investigations. The Risk Assessment should provide a detailed review of reports and pertinent information that is relevant to the risk assessment process, please update.
5. Section 3.1 Site Details. Confirm the property description details as they differ from that provided using https://maps.six.nsw.gov.au title information – confirmation may be required from the client regarding the current Lot and DP for the site.
6. Table 3.3 Summary of the Former Camide Landfill. The table indicates that putrescible wastes were not recorded at the former landfill site, however subsequent sections of the report refer to the potential presence of putrescible wastes. It would be beneficial to include a footnote clarifying the potential presence of putrescible wastes, the composition of which may be a source of landfill gas generation.
7. Section 4 Review of Landfill Gas Monitoring Records and Site Assessments. Review and revise the opening sentence of this section.
8. Section 4.1 Landfill Gas Monitoring Well Construction and Appropriateness for Monitoring. Confirm the number of previously installed wells.
9. Section 4.3 Summary of Historical LFG Results from Former Camide Landfill. With consideration of the purpose of the risk assessment and statements made in latter sections of the report, a summary of the monitoring results and trends from historical monitoring events should be provided in the report. Particular reference should be made to data reported before and after the installation of the biofiltration trench. It would also be helpful to include the installation date of the trench on the attached graphs.
10. Section 4.4. Conclusions. Refer to Comment #9. The consultant has included conclusive statements about the effectiveness of the bioremediation trench. It would be beneficial to provide some context on the data collected and assessments conducted to support this conclusion.

11. Section 5 Initial Conceptual Site Model. Confirm which area the CSM has been developed for. It is unclear in the text if the CSM relates to Stage 2 or the former landfill area. Section 5.4 suggests the CSM has been developed for the landfill site. Please clarify.
12. Section 5.1 Source. Refer to Comment #6. The consultant discusses the likely presence of putrescible wastes within the landfill. Consideration should be given to noting this in Table 3.3 (Waste Composition).
13. Section 6 Perimeter Well Installation and LFG Monitoring. Justification should be provided for the limited parameters monitored as part of the assessment, including why VOCs, hydrocarbons and other common landfill gases have not been assessed. Further discussion regarding the presence and potential migration of leachate should be included.
14. Section 6.2.3 LFG Monitoring Network.
    a. The figures referenced do not provide the stated information.
    b. Figure 1 does not depict the location of the wells.
    c. Figure 2 does not show the location of the background well. Please clarify the location and well ID of the background well.
    d. The label for GM40 is not displayed on Figure 4.
    e. Table 6.1 describes GM21, GM22, GM28, GM29 as being "*in waste*". Are these wells located within the landfill waste, or between the waste and the trench?
15. Section 7.2 Water Levels in LFG Monitoring Network. As the wells have not been surveyed, how has the consultant determined/estimated the invert depth of the trench in relation to groundwater levels? Surveying of the wells and comparison to the survey data for the trench is imperative to the development of the conceptual site model and ongoing management of the site.
16. General Comment. The report is lacking any discussion of the assessment criteria utilised for the analysis of data and associated risk. The consultant should provide a dedicated subsection discussing the adopted threshold values. Provide justification in support of adopted thresholds and full source references for each of the adopted values. Comparison of the recorded concentrations against the relevant criteria should be included in the discussion of results (Section 7.0).
17. Section 7.3.1 Methane. The consultant states that wells GM22, GM28 and GM29 are located *inside of the biofiltration trench* and *are indicative of landfill conditions*. Please clarify the location of these wells which are understood to be located between the landfill waste and biofiltration trench.
18. Section 7.3.6 Volatile Organic Compounds.
    a. Additional information is required regarding the reported VOC concentrations. Please provide the data to support the statements made regarding historical VOC measurements and trace analysis, impacts of PVC cement/glue on reported concentrations, and VOC concentrations not posing a risk to future site users.
    b. Which wells had their height extended and what '*filling*' is being referred to?
19. Section 7.4 Continuous In-Situ Monitoring. For clarity, the definition of a worst-case meteorological event should be specified in the report.

20. Section 8 Updated Conceptual Site Model. Clarification is required as to which area the CSM has been developed for.
21. Section 8.1 Source.
    a. Reference is made to waste materials being placed within the site. For clarity, maintain consistency in reference to the site.
    b. In the discussion of landfill gas sources, the consultant refers to significant filling having been conducted within Stage 2C. This statement should be clarified to ensure it is not confused with the landfill waste mass filling.
    c. The consultant states that VOCs have previously been assessed in the perimeter network wells and not found to be a major contributor sufficient to cause a vapour intrusion risk to development. It would be beneficial to provide some context on the data collected and appropriate discussion to support this key conclusion.
22. Section 8.2 Potential Pathways. The discussion of potential pathways would benefit from the inclusion of relevant site specific information, including the geology encountered and presence of underground services.
23. Section 8.4 Summary of the LFG Regime. The consultant should clarify that the gas regime being discussed (second paragraph) relates to the landfill present adjacent the site, not associated with the wastes discussed in the first paragraph.
24. Table 8.1 Stage 2 Conceptual Site Model. The use of the term VENM (second column) should be reconsidered as it not an appropriate term for the description of natural geology underlying the site (being a waste classification in NSW legislation).
25. Section 9.3 Preliminary Screening. Cross reference to Section 0 requires correction.
26. Table 9.4 highlights the importance of understanding the relationship between groundwater levels and the invert depth of the biofiltration trench in assessing the risk to the site. As such, survey of the wells should be conducted and the risk assessment revised as necessary.
27. Section 9.5 Level 2 Risk Analysis and Assessment.
    a. Text required formatting.
    b. The report states that GM20 is not indicative of perimeter conditions as it is located too close to the biofiltration trench. Section 2.4 of the report states that GM20 may have been damaged but is still suitable for sampling. Significant fluctuations in groundwater levels have also been recorded in this well. The figures indicate minimal distance between the perimeters well GM44 and GM20 and the borelog for GM20 indicates installation within natural shales. Please confirm the distances between the biofiltration trench, GM20 and GM44. Is the consultant able to make a more conclusive discussion regarding the findings and results reported for GW20? Provide comment on the reliability of GM20 and the monitoring network.
    c. The calculation of risk has been determined based on data collected following installation of the trench. To support the risk assessment findings, it would be beneficial to clarify, on the data summary tables and associated graphs, the date of trench installation.
    d. The report should clearly state the gas protection measures required by the development to meet the Characteristic Situation 2 assessment. The floor slab requirements should specified.

28. Section 10 Discussion and Conclusions.
    a. Review this section with consideration to comments provided in this Interim Advice on other subsections of the report and update accordingly.
    b. Second paragraph – the discussion of gas migration underneath the biofiltration trench does not consider the depth of groundwater or data gap associated with lack of survey data.
    c. Third paragraph should detail the concrete slab requirements associated with the development.
    d. Fifth paragraph – the protection measures associated with the concrete slab should be discussed.
    e. Have the data gaps listed in Section 5.4 been addressed?
29. Figures. Cross Section A depicts the trench intersecting the water table. Cross Section B has the trench sitting above the water table with potential gas migration underneath. Is the biofiltration trench known to intercept the water table in some areas and not others, or are two different scenarios being depicted?
30. Graphs. It would be helpful to include a line on the graphs indicating the installation date of the biofiltration trench. The dates provided along the bottom axis are difficult to read.
31. Tables. Include all data utilised in the calculation of gas screening values, including data collected prior to the installation of the biofiltration trench.

Environmental Management Plan

32. Section 1.1 Background. The fourth paragraph refers to proposed industrial development to the north of the landfill and focuses on the Stage 1 area. Revise to include the proposed development to the south and east of the landfill (Stage 2).
33. Section 1.2 EMP Objectives. Review the opening sentence to provide greater assurance and certainty. It would be beneficial to refer to the EMP as a document that *will be enforced*, as opposed to a plan “*that can be enforced*”.
34. Section 2.2.1 Landfill Closure Plan. Provide a reference for the RAP.
35. Section 2.2.3 Remedial History. Clarify opening sentence. Does the consultant mean to say the landfill has undergone years of assessment since its closure or implementation of the LCP?
36. Section 2.3.4 Landfill Gas. The Stage 2 Landfill Gas Risk Assessment is not mentioned.
37. Section 3.1 Introduction. Amend typographical errors in first and second sentences. Typographical errors are also noted in second paragraph.
38. Section 3.2 Regulatory Requirements. It would be beneficial to expand this section to provide an appraisal of which guidelines are to be applied in the evaluation of landfill gas monitoring data collected as part of this EMP. It is reported that the subject site of the EMP, the former Camide landfill, will be assessed through the application of NSW EPA (2016) and its associated threshold values. When evaluating potential risk presented to off-site properties, provide some clarity on what guidelines will be adopted. As access to the surrounding off-site properties will not be available for the collection of data, the consultant should clearly set out how it is proposed that the guideline documents (NSW EPA 2016 and NSW 2012) will be applied in order to determine potential risk to off-site receptors.
39. Section 3.4.4 Landfill gas analyser.
    a. The consultant should include comment to ensure the monitoring instruments have the required sensitivity for comparison against threshold criteria.
    b. A summary table of threshold values for the assessment of monitoring data is presented in Table 7. The consultant should provide a dedicated subsection discussing the proposed threshold values to be adopted and applied to each type of monitoring data proposed for collection. Provide justification in support of adopted thresholds and include how they can be applied to support the EMP objectives in relation to measuring and monitoring the potential risk to adjoining properties. Provide full source references for each of the adopted threshold values.
    c. Table 7 – clarification required on the proposed threshold for carbon dioxide. Why has a threshold of 1.5 % v/v above the background levels detailed in Appendix B been proposed? Provide justification in support of this approach for the evaluation of risk to off-site properties.
    d. Provide details on how water levels within monitoring wells are to be assessed/interpreted to evaluate the effectiveness of the biofiltration trench.
40. Section 3.4.6 Corrective / Contingency Actions.
    a. Corrective actions are only noted as required when methane concentrations exceed the reported threshold. Will a threshold value also be included for carbon dioxide?
    b. Will notification of any parties (e.g. property owner or others listed in Table 17 of the EMP) occur if a greater frequency of monitoring is required? It is noted that the EMP

recommends annual reporting of monitoring data. How and what information associated with corrective action(s) will be communicated outside of this annual reporting schedule?

c. The consultant should define what timeframe these observations (i.e. persistent exceedances, increasing trends) must be recorded over prior to triggering further assessment in accordance with NSW EPA (2012).

d. Clarify how the "*potential risk to off-site land uses*" will be identified.

e. Clarification is required regarding what mitigation measures may be put in place. Reference is made to the landfill gas risk assessment. Provide a reference to the relevant landfill gas risk assessment document for the site. As no access is available to off-site properties, all proposed mitigation must take place within the former Camide landfill property boundary.

41. <u>Section 3.5.3 Performance Indicators</u>. It is noted that the biofilter media is to be in good condition, at correct moisture levels and not subsided. Further discussion on inspection of the media or how it is determined that moisture levels are correct is not set out in the EMP. Clarification required.

42. <u>Section 3.5.4 Monitoring requirements</u>. The EMP refers to NSW EPA (2016) and the EPL 123 for monitoring requirements for surface monitoring. It would be beneficial if the consultant could include a monitoring protocol within the EMP for clarity. Also provide details of the proposed monitoring quality assurance measures to be adopted. This will ensure consistency in data collection across the proposed program of monitoring. This information can be attached to the EMP as an appendix or incorporated within the main text.

43. <u>Section 3.5.9 Corrective Actions</u>. The 500 ppm threshold for implementation of corrective actions should be defined in a separate subsections. Refer to Comment #39b.

44. <u>Section 3.6.1 Requirements</u>. The consultant reports that the build up of gas in subsurface structures may have the potential to be explosive or present risk of asphyxiation. Methane has been listed as a performance indicator. Are any other landfill gases considered relevant for assessment with respect to risk of asphyxiation?

45. <u>Section 3.6.3 Performance Indicators.</u> The performance indicators or threshold criteria utilised within the EMP should be defined in an appropriate section of the EMP. Refer to Comment #39b.

46. <u>Section 3.6.4 Monitoring Requirements.</u>

a. Is reference to NSW EPA 2016 appropriate for monitoring of enclosed spaces that are not on or within the actual landfill footprint? Consider this comment when completing a review of guidelines (refer to Comment #38).

b. The EMP currently refers to subsurface structures present within Stage 1. Are structures present within Stage 2 (current or proposed) that also require consideration?

c. Are any services proposed to cross from the former landfill site into the adjacent development areas? Provide details.

47. <u>Section 3.6.5 Landfill gas analyser</u>. Clarification is required as to why only methane is to be compared against a threshold value and other gases are to be recorded for information purposes only. Would it be beneficial to provide all appropriate thresholds for potential

landfill gases to allow evaluation of potential landfill gas migration and accumulation within sub-surface structures which have the potential to create a pathway off-site?

48. Section 3.6.7 Corrective Actions.

    a. Refer to Comment #40 as it is also applicable to Section 3.6.7.

    b. The consultant should provide corrective actions/contingency plan in the event that potentially explosive conditions are identified in sub-surface structures/pits.

49. Section 5.1 General. It is recommended that the annual reporting include an assessment made of the risks present at the site boundary as per assessment procedures set out in NSW EPA (2012). Ongoing assessment of the Gas Characterisation Score as measured at the boundary would be a useful indicator and assessment of risk.

50. General Comment. Is it anticipated that any ground disturbance activities will occur within the former landfill area and/or biofiltration trench? Does allowance within the EMP need to be made to set out management and/or monitoring requirements associated with ground disturbance activities including hazardous gases, confined space, reinstatement requirements for cap and or biofiltration trench? Will this be captured elsewhere in other reporting? Clarification required.

51. General Comment. Previous reporting for the site by Biogas Systems Australia noted the importance of groundwater levels and potential pathways for gas migration with changing groundwater levels. Provide details of how this will be monitored and what actions will be undertaken in the event of a change in depth to groundwater.

52. General Comment. It would be beneficial to clarify whether the controls and monitoring requirements presented in the EMP are contingent on the site layout and general landuse of the former landfill remaining relatively unchanged. If this is the case, provide an overview of procedures to be implemented in the event of changes in landuse or ground disturbance activities.

I look forward to seeing these points addressed. If you require additional information or clarification, please do not hesitate to contact me. Thank you for your time regarding this matter.

Yours sincerely

James Davis
NSW EPA Contaminated Land Site Auditor
Enviroview Pty Ltd

Ref: 0301-1807-IA 05

30th November 2020

Wayne Pasalich
CSR Building Products Ltd
C/- Claire Kollaras
Calibre Consulting
PO Box 8300
BAULKHAM HILLS BC
NSW, 2153

Via email: Claire.Kollaras@calibreconsulting.co

Dear Wayne

RE: Interim Site Audit Advice 04 – Review of Updated Landfill Gas Risk Assessment and Environmental Management Plan, Stage 2, 327-335 Burley Road, Horsley Park, NSW 2175.

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor, to conduct a Site Audit in relation to the site identified as 327 – 335 Burley Road, Horsley Park NSW 2175 (the 'Site'), in accordance with the *Contaminated Land Management Act 1997* and relevant guidelines made or approved under s105 of that Act.

The objective of the Site Audit is to provide a Site Audit Report and Site Audit Statement to certify, in the Auditor's opinion, in relation to contaminated land, that the site is suitable for ongoing commercial/industrial land use, in relation to the guidelines made or approved by the NSW EPA.

A Site Audit Interim Advice is provided at a particular stage of the Audit to assist in the management of contamination issues with regard to the requirements of the Site Audit. An Interim Advice does not constitute a Site Audit Statement or a Site Audit Report and should not be considered pre-emptive of the final audit conclusions. A Site Audit Report and Site Audit Statement will be prepared at the conclusion of the Site Audit following the remediation of the Site.

The purpose of this Interim Advice is to provide feedback on the revisions made in the following reports:

> DBD Environmental. *Landfill Gas Risk Assessment Stage 2, Horsley Park*. Report No. 0093_DBD_RPT0002A, dated 11 November 2020.
>
> Biogas Systems Australia. *LFG Management Plan, Environmental Management Plan for Landfill Gas, Horsley Park Landfill.* Report No. 0103_RPT0076.C, dated 13 November 2020.
>
> DBD Environmental. *Response Letter – Auditor Comments of Landfill Gas Risk Assessment and Environmental Management Plan, Stage 2, 327-335 Burley Road, Horsley Park, NSW 2175.* Letter Ref. 0093_CSR_Auditor_Response_Letter, dated13 November 2020.

The revised *LFG Environmental Management Plan* (Biogas Systems, 2020) has been reviewed and the Auditors comments have been satisfactorily addressed.

Whilst most comments have been addressed by the revised *Landfill Gas Risk Assessment* (DBD Environmental, 2020), a couple of issues remain outstanding which require attention to finalise the document and enable close-out of the Site Audit.

Comments Provided in Interim Advice 04

1. Comment #13 Section 6 Perimeter Well Installation and LFG Monitoring. The justification regarding the limited analytical suite has not been added in this section as stated in the *Response Letter*, nor any discussion regarding the presence and potential migration of leachate.
2. Comment #16 General Comment – Assessment Criteria. The consultant has provided a new sub-section discussing the assessment criteria, however clarification is required regarding the criteria adopted for the purpose of the risk assessment. The following comments are made regarding Section 7.4 of the revised report.
    a. The opening sentence refers to the document as an EMP, please amend.
    b. The consultant states that criteria provided by the *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases* (NSW EPA 2012) is considered the most applicable. The consultant should consider the more recent NSW EPA (2020) *Assessment and management of hazardous ground gases*.
    c. Table 7.2 utilises NEPM criteria which is not discussed in this section.
    d. It would be beneficial to provide a table summarising the criteria adopted for the purpose of the risk assessment, for all analytes assessed, citing the source references for the adopted values. Appropriate justification for the adopted criteria is required.
    e. Table 7.1 – please provide a footnote to the table referencing the tabulated criteria.
3. Formatting Error – Figures 7.1, 7.2, 7.3, 7.4 and 7.5 (within body of the report) were not included or able to be read in the revised report provided for review by the Auditor.

These issues should be addressed in finalising the document. If you require additional information or clarification, please do not hesitate to contact me. Thank you for your time regarding this matter.

Yours sincerely

James Davis
NSW EPA Contaminated Land Site Auditor
Enviroview Pty Ltd

ENVIROVIEW

Ref: 0301-2010-IA 01

22 July 2021

Wayne Pasalich
CSR Building Products Ltd
C/- Claire Kollaras
Calibre Consulting
PO Box 8300
BAULKHAM HILLS BC
NSW, 2153

Via email only: Claire.Kollaras@calibregroup.com

Dear Wayne,

RE: Interim Site Audit Advice – Review of Landfill Gas Risk Assessment – 327-335 Burley Rd, Horsley Park, NSW 2175.

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor, to conduct a Site Audit in relation to the site identified as 327 – 335 Burley Road, Horsley Park NSW 2175 (the 'Site'), in accordance with the *Contaminated Land Management Act 1997* and relevant guidelines made or approved under s105 of that Act.

The objective of the Site Audit is to provide a Site Audit Report and Site Audit Statement to certify, in the Auditor's opinion, in relation to contaminated land, that the site is suitable for ongoing commercial/industrial land use, in relation to the guidelines made or approved by the NSW EPA.

A Site Audit Interim Advice is provided at a particular stage of the Audit to assist in the management of contamination issues with regard to the requirements of the Site Audit. An Interim Advice does not constitute a Site Audit Statement or a Site Audit Report and should not be considered pre-emptive of the final audit conclusions. A Site Audit Report and Site Audit Statement will be prepared at the conclusion of the Site Audit following the remediation of the Site.

The purpose of this Interim Advice is to provide feedback on the revisions made in the following reports:

> ERM. *Landfill Gas Risk Assessment, Horsley Logistic Park, 327-335 Burley Rd, Horsley Park, NSW 2175.* (Report Ref.: S010861_0565895). 14 April 2021.

Auditor Review Comments – ERM (2021) Landfill Gas Risk Assessment

1. Section 4.3, Gas Sampling. In the consultant's perspective would seasonal changes influence the measured soil gas concentrations over the course of a year? How representative was the sampling period in relation to climatic conditions over the course of a typical year? Please discuss.
2. Section 5.3, Discussion. The auditor agrees with the following points that have been sufficiently demonstrated through the landfill gas risk assessment (ERM, 2021):
    a. Methane from the Camide landfill is not (with minor low range and low flow occasional exceptions) migrating onto the site within the subsurface.
    b. Carbon dioxide is present within the site subsurface at unusually high levels however the source is likely a combination of landfill and degradation of organic matter within the

subsurface fill across the site and predominantly within blended fill materials that included organic-rich dam sediments. The consultant's perspective that the latter of these two influences is more significant is accepted.

However, while CO_2 is greatest in the area containing organic-rich fill material in the southeast of the site – it is lowest in central portions of the site (i.e. GM207, GM208, and GM303) – and also elevated in areas adjacent to the landfill (i.e. GM201, GM202, GM203, GM204, GM205). Therefore, it appears that CO_2 is either migrating or forming on the western side of the site in relation to the landfill.

Therefore, in the auditor's perspective – the influences of the CO_2 concentrations on the eastern side of the site (i.e. GM209 and GM210) should be discussed in this section separately or in contrast to the influences on the western side (i.e. GM201, GM202, GM203, GM205) of the site.

3. Section 6.6, Potentially Complete SPR Linkages. Table 6-1 – first row – the auditor disagrees that there is no linkage between the CO_2 from the landfill and the site based on the discussion in the prior comment.
4. Section 7.1 and Appendix A2 – Gas Screening Value (GSV).
   a. While it is noted that the *Hazardous Ground Gas guidelines* (NSW EPA, Dec 2019) state that (in S.4.3.4) the gas screening value is an "overall site value" – they also state that "*a large site may be subdivided where it is appropriate to do so and the rationale underpinning the stratification is explained".*
   b. The issue here (see Appendix A2) is that the maximum flow rate for the site was observed within wells on the eastern side of the site near the landfill (GM204). Whereas the maximum CO_2 concentration was observed within wells on the western side of site where organic-rich blended fills were placed (GM209). When used together – these two maximum values lead to a GSV greater than the guideline value of 0.07 for 'very low risk'. However, if the site were subdivided into areas influenced by the landfill and areas influenced by fill – then neither area would result in a GSV greater than the guideline value.
   c. This distinction should be evaluated as to whether it could simplify the discussion of characteristic situation (CS) in Section 7.2 of the report.
5. Section 8, Conclusion. Please revise discussion in the conclusion consistent with discussion revisions in relation to the above comments.
6. General Comment – Environmental Management Plan (EMP). While the auditor in general agrees with the outcome of the ERM Landfill Gas Risk Assessment for the site – the results, in conjunction with the auditor's review of associated documents for the adjacent landfill site, clearly demonstrate that:
   a. While the site is currently low risk with respect to landfill gas – this is achieved primarily through the management of the adjacent landfill site including the construction of the biofiltration trench and routine maintenance and monitoring of landfill gas (LFG) perimeter wells on the landfill site.
   b. Enforcement of an appropriate EMP for the landfill site should be contractually tied to the condition of sale for the Stage 2 site/development. Please advise whether a revised/updated EMP is planned.
   c. Please provide the auditor a copy of the language/conditions that are proposed for insertion into the contract of sale for the property with regard to contamination, the EMP, and monitoring and/or access issues for the site(s).

d. Upon review of the EMP for the Horsley Park Landfill (Biogas Systems, Sept 2020, Ver_C) – the auditor observes that while "*notification to adjacent property owners where required*" is included in the EMP if corrective actions are required as a result of routine monitoring – there appears to be no requirement in the document for regular provision of monitoring results to either the adjacent property owners or an independent third party. In the auditor's perspective – routine provision of inspection records, monitoring results, and associated reporting should be required to be routinely provided to the adjacent property owners and/or a nominated third party (such as an independent auditor or consultant).

These issues should be addressed in finalising the document. If you require additional information or clarification, please do not hesitate to contact me. Thank you for your time regarding this matter.

Yours sincerely

James Davis
NSW EPA Contaminated Land Site Auditor
Enviroview Pty Ltd

ENVIROVIEW

Ref: 0301-2010-IA 02

10 September 2021

Wayne Pasalich
CSR Building Products Ltd
C/- Claire Kollaras
Calibre Consulting
PO Box 8300
BAULKHAM HILLS BC
NSW, 2153

Via email only: Claire.Kollaras@calibregroup.com

Dear Wayne,

RE: Interim Site Audit Advice 02 – Review of revised Landfill Gas Risk Assessment – 327-335 Burley Rd, Horsley Park, NSW 2175.

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor, to conduct a Site Audit in relation to the site identified as 327 – 335 Burley Road, Horsley Park NSW 2175 (the 'Site'), in accordance with the *Contaminated Land Management Act 1997* and relevant guidelines made or approved under s105 of that Act.

The objective of the Site Audit is to provide a Site Audit Report and Site Audit Statement to certify, in the Auditor's opinion, in relation to contaminated land, that the site is suitable for ongoing commercial/industrial land use, in relation to the guidelines made or approved by the NSW EPA.

A Site Audit Interim Advice is provided at a particular stage of the Audit to assist in the management of contamination issues with regard to the requirements of the Site Audit. An Interim Advice does not constitute a Site Audit Statement or a Site Audit Report and should not be considered pre-emptive of the final audit conclusions. A Site Audit Report and Site Audit Statement will be prepared at the conclusion of the Site Audit following the remediation of the Site.

The purpose of this Interim Advice is to provide feedback on the revised document:

> ERM. *Landfill Gas Risk Assessment, Horsley Logistic Park, 327-335 Burley Rd, Horsley Park, NSW 2175.* (Report Ref.: S010861_0565895_v3). 4 August 2021.

The auditor previously reviewed this document (v2 dated 14 April 2021) as detailed in Interim Advice # 01 (0301-2010_01) dated 22 July 2021.

Together with the revised report (v3) the consultant (ERM) provided a response to the auditor's comments (from IA-01) with the responses letter dated 10 August 2021.

Auditor Review Findings – Acceptance of Revised Landfill Gas Risk Assessment

The auditor has reviewed the consultant's responses to comments document (10 August 2021) and the revised *Landfill Gas Risk Assessment* report (4 August 2021) and considers that the consultant's responses and the revised document are acceptable.

The auditor appreciates the additional discussion or clarification of issues raised and accepts the technical responses and edits to the report that were provided by the consultant.

Discussion of Environmental Management Plan, Enforcement, and Sale Agreement Requirements

The discussion (Comment #6) regarding the Environmental Management Plan (EMP) – the auditor agrees with the consultant's response that the revised EMP (to be/currently being revised) to meet the updated Environmental Protection Licence (or as notice of surrender condition as relevant) is the appropriate document for long-term management of the landfill site and all its remedial components. It is further agreed that a separate EMP for the Stage 2 development site regarding the landfill (site) management is not required.

Regarding the issue of enforcement of the EMP – the auditor accepts that through the provisions of the (amended) EPL (or surrender notice) there should be a requirement for the EMP to be implemented.

However, one of the auditor's points (#6 part (d)) regarding the discussion in Comment #6 (IA-01) was that while notification of "trigger breaches" to the site purchaser may be included in the EMP – the routine monitoring data should also be provided to the site purchaser for independent review/verification. This does not require a separate EMP – it is an issue that can be discussed and incorporated as pertinent into the current/ongoing update to the landfill EMP.

Regarding the last sentences in the consultant's responses document:

> *"It would be possible, if agreeable to CSR and the site purchaser, to include a clause in the sale agreement requiring notification of the site purchaser in the event of a trigger breach, and provision of any action plan resulting. Such a clause would not require a separate EMP."*

The auditor is of the opinion that such a clause should be a requirement within the sale agreement as the owner of the Stage 2 site should be aware of any issues that could potentially affect the subject property. As previously requested – please provide the auditor a copy of the language/conditions that are proposed for insertion into the contract of sale for the property with regard to contamination, the EMP, and monitoring and/or access issues for the site(s).

These issues should be addressed in finalising the document. If you require additional information or clarification, please do not hesitate to contact me. Thank you for your time regarding this matter.

Yours sincerely

James Davis
NSW EPA Contaminated Land Site Auditor
Enviroview Pty Ltd

Ref: 0301-2010_03

17 September 2021

Wayne Pasalich
CSR Building Products Ltd
C/- Claire Kollaras
Calibre Consulting
PO Box 8300
BAULKHAM HILLS BC
NSW, 2153

Via email only: Claire.Kollaras@calibregroup.com

Dear Wayne,

RE: Interim Site Audit Advice – Review of Validation Report – Stage 2B, Horsley Park, NSW 2175.

James Davis of Enviroview Pty Ltd has been engaged to provide the services of a NSW EPA Contaminated Land Accredited Site Auditor, to conduct a Site Audit in relation to the site identified as 327 – 335 Burley Road, Horsley Park NSW 2175 (the 'Site'), in accordance with the *Contaminated Land Management Act 1997* and relevant guidelines made or approved under s105 of that Act.

The objective of the Site Audit is to provide a Site Audit Report and Site Audit Statement to certify, in the Auditor's opinion, in relation to contaminated land, that the site is suitable for ongoing commercial/industrial land use, in relation to the guidelines made or approved by the NSW EPA.

A Site Audit Interim Advice is provided at a particular stage of the Audit to assist in the management of contamination issues with regard to the requirements of the Site Audit. An Interim Advice does not constitute a Site Audit Statement or a Site Audit Report and should not be considered pre-emptive of the final audit conclusions. A Site Audit Report and Site Audit Statement will be prepared at the conclusion of the Site Audit following the remediation of the Site.

The purpose of this Interim Advice is to provide feedback on the revisions made in the following report:

> ERM. *Validation Report, Stage 2B, 12 Johnstone Crescent, Horsley Park NSW 2175.* (Report Ref.: 0449086_S010925). 25 June 2021.

Auditor Review Comments

1. <u>Executive Summary.</u> Fourth paragraph – it should be clarified that both mulch and materials from the wider development area were imported to the Stage 2B area.
2. <u>Section 2.1 Site Identification.</u> Please confirm the site address. Review of the NSW spatial information database indicates the address should be 6 Johnston Crescent, Horsley Park. Please also confirm that this address will be the address referenced on the Site Audit documentation (i.e., the site audit statement).
3. <u>Section 3.7 Stage 2A Validation Report</u>. A summary of the remediation and validation of the unexpected find located within Stage 2B should be included. Review of this report is otherwise not relevant to the Stage 2B site.

4. <u>Section 4 Pre-Earthworks Contamination Status</u>. Please clarify if the asbestos referred to encountered in the *southern most portion* of the eastern bund wall was located within Stage 2A or 2B.

5. <u>Section 5.1 Site Description Prior to Remediation</u>. It is noted that the first sentence suggests the eastern bund wall is located adjacent to the Stage 2B site, rather than transecting it.

6. <u>Section 5.3 Required Remediation</u>. The report should include a summary of the works associated with the unexpected find located within the subject site and reported as part of the Stage 2A works.

7. <u>Section 7.2.1.2 Remedial Works.</u>

    a. Please confirm the volume of the stockpiles to confirm the sampling rate of one sample per stockpile was adequate. Was the sampling density in accordance with the RAP?

    b. Several sections of the report refer to *remediation of the bund* or *remediated material* from the bund wall. It is unclear whether this refers to all material *excavated* from the bund, or whether any remedial works (i.e. emu picking) was conducted on the asbestos impacted stockpiles within the Asbestos Treatment Area? Was the Asbestos Treatment Area used for stockpiling only? Were any asbestos removal works conducted or was all asbestos impacted material moved to the Stage 3 storage area? Please clarify.

8. <u>Section 11 Materials Tracking</u>. Table 9 states that *remediated bund wall material* was placed within Stage 2B. Please clarify if this refers to the land-use compliant material excavated from the bund wall, or whether it refers to impacted material that was subsequently remediated. Please provide details of any remediation if undertaken.

These issues should be addressed in finalising the document. If you require additional information or clarification, please do not hesitate to contact me. Thank you for your time regarding this matter.

Yours sincerely

James Davis
NSW EPA Contaminated Land Site Auditor
Enviroview Pty Ltd

Appendix B: Site Plans

Site location Showing Stage 2B boundary

1

Drawing No: 0449086m_HP2bV_G001_R0.mxd	Horsley Park Stage 2B Validation 6 Johnston Crescent, Horsley Park NSW 2175
Date: 22/02/2021 Drawing Size: A4	
Drawn By: CB Reviewed By: TR	Client: CSR
Coordinate System: GDA 1994 MGA Zone 56 0 50 100 150m N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Notes:

Areas and dimension contained within this plan are for D.A purpose only and may vary subject to final survey.

Source:

Client Provided, Drawing No. X13044 - Sk936, Amendment (0), Dated 23/12/2020

Client provided Survey

2

Drawing No: 0449086m_HP2bV_C001_R0.cdr		**Horsley Park Stage 2B Validation** **6 Johnston Crescent, Horsley Park NSW 2175**
Date: 19/02/2021	Drawing size: A4	
Drawn by: CB	Reviewed by: TR	Client: CSR
0 100 200m	N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Appendix C:
Phase 1 Site Feature Location Plan (DLA, June 2013)

Legend

Site Boundary

DLA environmental

Title: Site Layout	Figure: 2	Project no:: DLH1121
	Date: 14/06/2013	Revision: 1

Appendix D:
Phase 2 Sample Location Plan (DLA, September 2013)

LEGEND

● Sample Location

DLA environmental

Sydney
Unit 2B/30 Leighton Place
Hornsby NSW 2077
Tel: 02-94761765
Fax: 02-94761557

Maitland
42B Church Street
Maitland NSW 2335
Tel: 02-49330001

Title: Water Sample Locations– CSR Horsley Park. Burley Rd, Horsley Park, NSW	
Figure: 3	Project no:: DLH1121
Date: 2.10.2013	Revision: 0

LEGEND

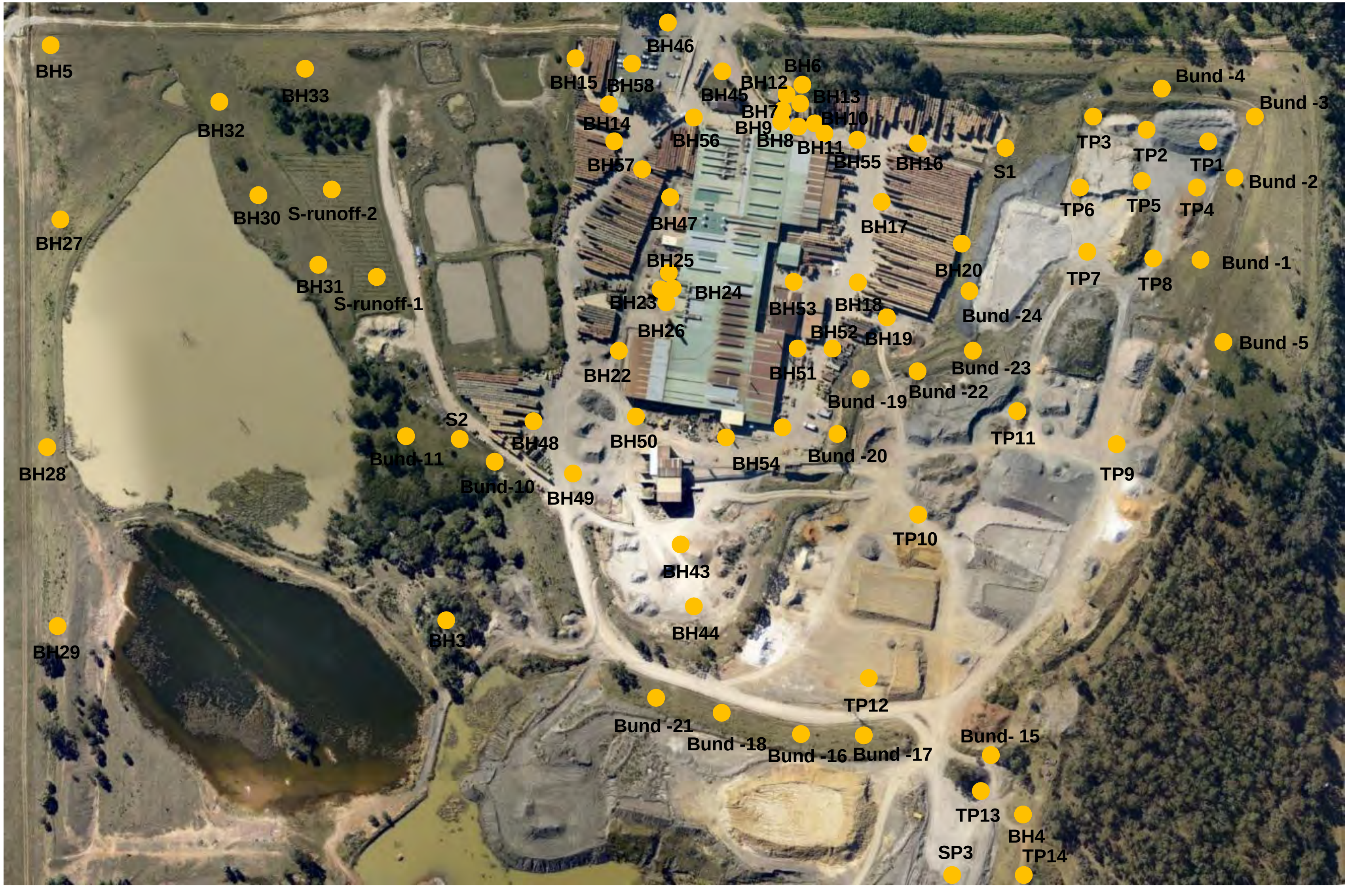
Sample Location

DLA environmental

Sydney
Unit 2B/30 Leighton Place
Hornsby NSW 2077
Tel: 02-94761765
Fax: 02-94761557

Maitland
42B Church Street
Maitland NSW 2335
Tel: 02-49330001

Title: Water Sampling Locations, CSR Horsley Park. Burley Rd, Horsley Park, NSW.	
Figure: 1	Project no:: DLH1121
Date: 2.10.2013	Revision: 0



LEGEND

Sample Location

DLA environmental

Sydney
Unit 2B/30 Leighton Place
Hornsby NSW 2077
Tel: 02-94761765
Fax: 02-94761557

Maitland
42B Church Street
Maitland NSW 2335
Tel: 02-49330001

Title: Sample Location- North- CSR Horsley Park. Burley Road, Horsley Park, NSW	
Figure: 1	Project no:: DLH1121
Date: 23.09.2013	Revision: 0

LEGEND

Sample Location

DLA environmental

Sydney
Unit 2B/30 Leighton Place
Hornsby NSW 2077
Tel: 02-94761765
Fax: 02-94761557

Maitland
42B Church Street
Maitland NSW 2335
Tel: 02-49330001

Title: Sample Locations–South- CSR- Horsley Park. Burley Road, Horsley Park, NSW	
Figure: 1	Project no:: DLH1121
Date: 23.09.2013	Revision: 0

Appendix E:
Phase 2 Summary Analytical Tables (DLA, September 2013)

Table 3a – Soil Assessment Criteria

Analytes	Thresholds (mg/kg dry wt)	Sources
Benzene Toluene Ethylbenzene Xylene (total) TPH: C_6-C_9 TPH: C_{10}-C_{40}	1 130[a] 50[b] 25[b] 65 1000	NSW Service Station Guidelines
Arsenic Cadmium Chromium Copper	3000 900 3600 240,000	NEPM 1999 (as revised 2013), Table 1(A)1, Column D
Lead	1500 300	NEPM 1999 (as revised 2013), Table 1(A)1, Column D NSW Service Station Guidelines 1994
Mercury Nickel Zinc B(a)P (TEQ) Total PAH's PCB	730 6000 400,000 40 4000 50	NEPM 1999 (as revised 2013), Table 5a, Table 1(A)1, Column D
Pesticides: (Aldrin/Dieldrin) Chlordane DDT+DDE+DDD	 45 530 3600	NEPM 1999 (as revised 2013), Table 5a, Table 1(A)1, Column D
Odours	No Odours	NSW OEH

[a] The toluene threshold concentration is the Netherlands Maximum Permissible Concentration (MPC) to protect terrestrial organisms in soil. This value was obtained by applying the US EPA assessment factor to terrestrial chronic No Observed Effect Concentration (NOEC) data. The MPC is an "indicative" value (Van de Plassche et al 1993: Van de Plassche and Bockting 1993).

[b] Human health and ecological based protection level for toluene. The threshold concentration presented here is the Netherlands intervention value for the protection of terrestrial organisms. Other considerations such as odours and the protection of groundwater may require a lower remediation criterion.

Table 4b – Groundwater Investigation Levels

Analytes	Service Station Guidelines	ANZECC Fresh Water (µg/L) 95%	90%	NHMRC Drinking Water Guidelines 2004 (µg/L)
Benzene	300	700	900	1
Toluene	300+			800
Ethylbenzene	80	80	110	300
M+P-Xylene		75		600
Total Xylene	380			
TPH: C6 - C40	600[1]	7		ID
T-1,2 dichloroethene		700	900	
C-1,2 dichloroethene		700	900	
Trichloroethene		330	400	
1,2 dichloroethane		1900	2600	
Chlorobenzene		55	100	
Arsenic (III)		24	94	
Arsenic (V)		13	42	7
Cadmium		0.2	0.4	2
Chromium (III)				
Chromium (VI)		1	6	50
Copper		1.4	1.8	2000
Lead	5	3.4	5.6	10
Mercury (inorganic)		0.6	1.9	1
Nickel		11	13	20
Zinc		8	15	ID
PAH's				
Napthalene		16	37	
Anthracene		0.4*		ID
Phenanthrene		2*		
Fluoranthene		1.4*		
B(a)P		0.2*		0.01
PCB (Total)		1-0.001		0.05
Phenolics		320		ID

[1] The NSW EPA Guidelines for Assessing Service Station sites and the ANZECC water quality Guidelines do not provide any reference for TPH levels in groundwater. In the absence of accepted criteria, the Dutch Intervention guidelines have been referenced as a guide only. The Dutch guidelines do not provide criteria for the C6-C9 hydrocarbon fractions, but provide values for mineral oil hydrocarbons (C10-C36 chain). The Dutch Intervention guideline for mineral oil is 600µg/litre. This guideline is health based rather than ecosystem based.

[2] The ANZECC threshold criteria of 7µg/L is a low reliability trigger level for protection of aquatic ecosystems and is derived from a study on the effects of petroleum hydrocarbons on tropical marine organisms. This level has not been adopted as it is below the most sensitive detection level of the laboratory.

ID=Insufficient Data; *Low reliability trigger values are provided where possible as an indicative guideline only in the absence of a high reliability 95% value.

3.2.3 Limitations of the Assessment Criteria

All criteria have limitations. Not all chemical analytes are covered by each set of guidelines, requiring some criteria to be sourced from elsewhere. This is particularly relevant to the Dutch guidelines, which provide a guideline for assessment for some analytes not covered by the Australian guidelines. Only criteria relevant to Australia have been used in the interpretation of analytical data on the Site.

Monocyclic Aromatic Hydrocarbons (BTEX)

A total of seventy five (75) soil samples were analysed for Monocyclic Aromatic Hydrocarbons (BTEX fractions), associated with petrol contamination, were not detected above the laboratory Limit of Reporting (LOR) in any of the samples collected.

Total Recoverable Hydrocarbons (TRH)

A total of seventy five (75) soil samples were analysed for Total Recoverable Hydrocarbon (TRH) compounds from the sampling locations on the site.

Hydrocarbons in the C_6 – C_{10} Fraction (F1) were detected in six (6) of the samples analysed with concentrations ranging from 70 – 470mg/kg. Hydrocarbons in the C_{10} – C_{16} Fraction (F2) were detected in eleven (11) samples with concentrations ranging from 100 – 1900mg/kg. All concentrations in the F1 and F2 Hydrocarbon category were below the NEPM Table 1A(5) HSL criteria for F1 (2800mg/kg) and F2 (2400mg/kg) fractions at a depth greater than 1m in clay soils.

Hydrocarbons in the C_{16} – C_{34} Fraction were detected in three (3) of the samples analysed with concentrations of 160mg/kg in two (2) samples and 180mg/kg in one sample.

Hydrocarbons in the C_{34} – C_{40} Fraction were detected in nine (9) of the samples analysed with concentrations ranging from 61 – 1100mg/kg. One sample (BH24 – 1.3a) exceeded the NSW Service Station Guidelines value of 1000mg/kg for Total Recoverable Hydrocarbons.

Table 4a – TPH in Soil (mg/kg)

Sample ID	Total Petroleum Hydrocarbons C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Total
BH24-S	70	570	nd	170	810
BH24-SA	nd	220	nd	nd	220
BH24 - 0.6	nd	590	nd	110	700
BH24 - 1.3	240	1100	nd	560	1900
BH24 - 1.3A	470	1900	nd	**1100**	3470
BH24 - 2.0	180	770	nd	400	1350
BH25 - 1.4	nd	100	nd	nd	100
BH25 - 2.7	nd	160	nd	61	221
BH27 - 1.0	160	410	nd	300	870
BH51 - 0.5	160	510	180	340	340
BH51 - 1.4	nd	150	nd	99	99
BH56 - 2.5	nd	nd	160	nd	nd
HIL	**2800**	**2400**	**-**	**-**	**1000**

Pesticides

Six (6) samples including duplicates were submitted for pesticide and herbicide analysis (OP/OCP). No concentrations of OP/OC Pesticides were recorded above LOR and are therefore within the site assessment criteria. No evidence of impaction from pesticides or herbicides was noted.

Polycyclic Aromatic Hydrocarbons (PAH)

A total of two hundred and thirteen (213) samples were analysed for Polycyclic Aromatic Hydrocarbons (PAH). Concentrations of PAH compounds were detected above the LOR in eighty one (81) of the samples collected, with one (1) sample (TP3 - 0.5m) exceeding the NEPM 2013 Table 1(A)1 column D criteria of 40mg/kg for BaP (TEQ) with a concentration of 53mg/kg. All remaining samples concentrations were within the Site Acceptance Criteria.

Polychlorinated Biphenyls (PCBs)

Six (6) samples including duplicates were analysed for Polychlorinated Biphenyls (PCB). There were no concentrations of PCB recorded above the LOR and hence none above the site assessment criteria.

Heavy Metals

A total of two hundred and thirteen (213) soil samples were submitted for analysis of all eight (8) heavy metals as recommended by the NSW EPA. All samples complied with the Site acceptance criteria of NEPM 1999 as revised 2013 Table 1(A)1 Column D – *Commercial/Industrial* and the *NSW Service Station Guidelines 1994*.

Refer to **Table 4b**- Metals in Soil

Table 4b- Metals in Soil

Parameter	Acid Extractable Metals							
	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Average (n=)	7.8	0.56	24.4	30.4	20.6	0.12	21.9	60
Standard Deviation	3.4	0.15	43	12.5	17.7	0.06	32.5	33.1
Min (mg/Kg)	4	0.4	4	3	4	0.1	2	6
Max (mg/Kg)	26	1	260	85	130	0.4	190	310
Number Exceeding	0	0	0	0	0	0	0	0
SAC (NEPM D) Service Station	3000	900	3600	4000	1500	730	6000	400000
Phytotoxicity EIL	**20**	**3**	**400**	**100**	**600**	**1**	**60**	**200**

4.2.2 Water Analysis

Six monitoring wells were established on the site to determine the condition of groundwater within the site. As a minimum each installed well reached at least a moisture layer in the soil profile if not a water bearing layer or a perched water table. At the time of sampling four water samples were collected from the monitoring wells.

The well installation information is located in the following table.

Table 4c – Well depths

Monitoring Well Description	Total Depth of Well *(mbgl)	Water Level *(mbgl) (18/9/2013)
MW#1	7.42	7.35 (dry)
MW#2	5.95	1.54
MW#3	11.79	1.43
MW#4	5.4	dry
MW#5	7.5	1.6
MW#6	8.67	4.81

The monitoring well analytical results are in the following series of tables.

BTEX

The four monitoring wells sampled were analysed for BTEX. There were two detections of C_6 to C_{10} however these detection were below the site acceptance criteria. The two detections were in MW2 and MW3.

Total Recoverable Hydrocarbons and Naphthalene

The four monitoring wells sampled were analysed for Total Recoverable Hydrocarbons. MW3 had a detection of C_{10}-C_{16} and Naphthalene, however was below the site acceptance criteria. MW2 is located adjoining the factory and in the area of former chemical storage, naptha and possible oil storage underground storage tanks. MW2 exceeded the site criteria for Total Recoverable Hydrocarbons and Naphthalene.

Table 4d – Volatile Hydrocarbons

Sample ID	Volatile Hydrocarbons						
	vTRH C_6 - C_{10} (µg/L)	vTRH C_6 - C_{10} less BTEX (F1) (µg/L)	Benzene (µg/L)	Toluene (µg/L)	EthylBenzene (µg/L)	m + p Xylene (µg/L)	o-Xylene(µg/L)
MW2	50	50	nd	nd	nd	nd	nd
MW3	120	92	nd	nd	nd	nd	nd
MW5	nd	nd	nd	nd	nd	nd	nd
MW6	nd	nd	nd	nd	nd	nd	nd
Criteria			**950**	**-**	**-**	**200**	**350**

Table 4e – TRH and Naphthalene

Sample ID	Total Recoverable Hydrocarbons C6-C36 and Naphthalene								
	C6 - C10 (µg/L)	TRH C10 - C14 (µg/L)	TRH C15 - C28 (µg/L)	TRH C29 - C36(µg/L)	TRH >C10-C16 (µg/L)	TRH >C10 - C16 Less Napth (µg/L)	TRH >C16-C34 (µg/L)	Total TRH(µg/L)	Naphthalene (µg/L)
MW2	50	**1200**	**4000**	**990**	**2000**	**2000**	**3900**	**6240**	**38**
MW3	120	72	nd	nd	74	71	nd	194	2
MW5	nd	nd	nd	nd	nd	nd	nd	nd	nd
MW6	nd	nd	nd	nd	nd	nd	nd	Nd	nd
Criteria								**600**	**16**

Metals

In total there were sixteen (16) water samples collected for analysis, twelve (12) surface water samples collected (including one duplicate) from the eleven (11) dams located on the site and four (4) water samples from the monitoring wells. The samples were tested for a variety of analytes and the results are in the tables below. Included in the table below is the analysis of Metals in the Monitoring Wells.

A summary of the exceedance is as follows:

- The concentration of Cadmium in MW6 (0.3ug/L) marginally exceeded the site criteria 0.2ug/L.
- The concentration of Chromium in S-Dam-2 (3ug/L), S-Dam-3 (2ug/L), S-Dam-4(2ug/L), and S-Dam-5 (2ug/L), exceeded the site criteria of 1ug/L.

- The concentration of Copper in S-Dam-1 (3ug/L), S-Dam-2 (26ug/L), S-Dam-3 (22ug/L), S-Dam-4(29ug/L), S-Dam-5 (32ug/L) S-Dam-6 (2ug/L) and S-Dam-8 (2ug/L), exceeded the site criteria of 1.4 ug/L.
- The concentration of Lead in S-Dam-4 and S-Dam-5 exceeded the site criteria of 3.4ug/L.
- The concentration of Mercury in S-Dam-2 exceeds with site criteria of 0.06ug/L.
- The concentration of Nickle in MW2 (14ug/L) exceeded the site criteria of 11ug/L.
- The concentration of Zinc in MW2 (42ug/L), MW3 (39ug/L), MW6 (57ug/L), S-Dam-1 (17ug/L), S-Dam-4 (11ug/L) and S-Dam-5 (9ug/L) exceeded the site criteria of 11ug/L.

Table 4f – Heavy Metals in Water

Sample ID	Metal Analytes							
	As (µg/L)	Cd (µg/L)	Cr (µg/L)	Cu (µg/L)	Pb (µg/L)	Hg (µg/L)	Ni (µg/L)	Zn (µg/L)
MW2	3	<0.1	<1	1	<1	<0.05	**14**	**42**
MW3	<1	<0.1	<1	<1	<1	<0.05	8	**39**
MW5	<1	<0.1	1	1	<1	<0.05	3	6
MW6	4	**0.3**	<1	<1	<1	<0.05	7	**57**
S - Dam - 1	<1	<0.1	1	**3**	<1	<0.05	3	**17**
S - Dam - 2	1	<0.1	**3**	**26**	3	**0.07**	9	8
S - Dam - 3	2	<0.1	**2**	**22**	2	0.06	5	6
S - Dam - 4	2	<0.1	**2**	**29**	**7**	0.05	10	**11**
S - Dam - 5	<1	<0.1	**2**	**32**	**5**	0.06	10	**9**
S - Dam - 6	<1	<0.1	<1	**2**	<1	<0.05	<1	2
S - Dam - 7	<1	<0.1	<1	<1	<1	<0.05	<1	<1
S - Dam - 7a	<1	<0.1	<1	<1	<1	<0.05	<1	<1
S - Dam - 8	<1	<0.1	<1	**2**	<1	<0.05	<1	1
S - Dam - 9	<1	<0.1	<1	<1	<1	<0.05	<1	<1
S - Dam - 10	<1	<0.1	<1	11	<1	<0.05	<1	<1
S – Dam -11	<1	<0.1	<1	11	<1	<0.05	<1	<1
Criteria	**13**	**0.2**	**1**	**1.4**	**3.4**	**0.06**	**11**	**8**

pH and Electrical Conductivity

The electrical conductivity in monitoring wells MW3 and MW6 were high compared to the remainder of the site. There is no site criteria for Electrical Conductivity.

The pH of S-Dam-7 (pH 8.7), S-Dam-8 (pH 8.7) and S-Dam-9 (pH 8.8) are elevated above the site criteria pH range of 6.5 to 8.5 from the Australian Drinking Water Guidelines.

Table 4g – pH and EC

Sample ID	pH	EC
MW2	7.1	2,500
MW3	7.1	20,000
MW5	8	1,500
MW6	7.2	19,000
S - Dam - 1	8.4	1,200
S - Dam - 2	7.8	970
S - Dam - 3	8	1,100
S - Dam - 4	7.6	990
S - Dam - 5	7.7	1,000
S - Dam - 6	8.1	830
S - Dam - 7	**8.7**	1,200
S - Dam - 7a	8.1	1,200
S - Dam - 8	**8.7**	1,200
S - Dam - 9	**8.8**	1,700
S - Dam - 10	8.2	830
S - Dam - 11	7.9	830
Criteria	**6.5-8.5 ADWG**	**N/A**

Polycyclic Aromatic Hydrocarbons (PAHs)

There were only a few detections above the limit of reporting (LOR) of Naphthalene, Acenephthene, Phenanthrene, Anthracene within the water sampling. MW2 had exceedances of Naphthalene, Phenanthrene and Anthracene.

Table 4h – PAH in Water

Sample ID	Polycyclic Aromatic Hydrocarbons							
	Naphthalene	Acenaphthene	Phenanthrene	Anthracene	Fluoranthene	B(a)P	B(a)P TEQ	PAH Total
MW2	**38**	10	**15**	**1**	nd	nd	nd	79
MW3	2	Nd	Nd	Nd	Nd	Nd	Nd	1.6
MW5	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
MW6	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 1	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 2	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 3	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 4	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 5	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 6	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 7	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 7a	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 8	Nd	Nd	Nd	Nd	Nd	Nd	Nd	Nd
S - Dam - 9	nd	nd	nd	nd	nd	nd	nd	nd
S - Dam - 10	Nd	Nd	Nd	Nd	Nd	Nd	nd	Nd
S - Dam - 11	Nd	Nd	Nd	Nd	Nd	Nd	Nd	nd
Criteria	**16**	**-**	**2**	**0.4***	**1.4***	**0.2**	**-**	**-**

4.3 QA/QC Comments

The results of the field and laboratory quality assurance and quality control procedures complied with all stated DQOs. While a degree of homogeneity is expected, the very nature of the material and the contaminant concentrations would create expectancy for some heterogeneity.

A review of the QA/QC controls incorporated into the process and given the generally low concentrations of contaminants present in the soil on site generally, relative to threshold concentrations, the required degree of confidence in the results can be obtained. It is considered that the analytical data generated is of an acceptable degree of accuracy and precision for the purpose of assessing the soil quality on the site.

Appendix F:
Bund Wall Assessment Sample Location Plan
(DLA, June 2018)

DLA Environmental Services
an ERM Group company

Compiled
NN

Legend

- Site Boundary
- Test Pit
- No Asbestos Identified
- AF/FA Detected and > Criteria
- AF/FA Detected but < Criteria
- Bonded ACM Identified

N

Approximate Scale

0m 50m 100m

Figure Title				
Sample Locations				
Project Title			Client	
Horsley Park			CSR	
Project No.	Date	Scale	Figure No.	Revision
0449086	05/03/2018	As Shown	3	Version 1.0

Appendix G:
Bund Wall Assessment Analytical Summary Tables (DLA, June 2018)

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Asbestos w/w%	Asbestos ID	BTEX					TRH				PAH			Pesticides									
						Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene	F1	F2	F3	F4	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total PAH	DDT+DDE+DDD	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	OPP	PCB
SITE ASSESSMENT CRITERIA																											
HIL D Commercial / Industrial (NEPC, 2013)				0.05	.	-	-	-	-	-	-	-	-	-	-	40	4000	600	4	0	000	00	0	80	00	-	7
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	4	NL	NL	NL	NL	310	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	6	NL	NL	NL	NL	480	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	9	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	20	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	800	000	000	0000	-	-	-	-	-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				-	-	-	-	-	-	370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	95	135	185	180	-	215	170	2500	6600	1.4	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	430	99000	27000	81000	11000	26000	20000	27000	38000	-	-	-	-	-	-	-	-	-	-	-	-	-
PRIMARY SAMPLES																											
TP8 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	-	0 .5	NIL (+)VE										
TP8 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	-	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP8 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	-	0 .5	0.7										
TP8 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	-	0.7	5.5	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP8 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	-	0 .5	2.7										
TP8 3 ACM	-	4 Jun-6	AS0	nd	ACM identified in soil sample																						
TP9 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.3	0.6	4.1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP9 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	0 .5	0.3										
TP9 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.5	0.7	4.8	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP9 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.4	0.6	3.1										
TP9 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.2	<0.5	14	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP40 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	6	3.8	31										
TP40 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.6	08	5.3	0.1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	1.0
TP40 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	0 0	100	5.7	8 5	0										
TP40 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	<0.5	08	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP40 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.6	0.9	6										
TP4 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	2.3	3.4	6										
TP4 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.7	1.1	9.4										
TP4 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	460	10	0 6	1.0	0										
TP4 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP4 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	1.5	2.2	25	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP4 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	0 .5	0.5										
TP4 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP4 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	<0.5	1.3	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP4 2	2.0	4 Jun-6	4896 S0	000	-	<0.2	<0.5	<1	<3	<1	<25	<50	<100	<100	0.1	<0.5	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0 .1	0 .1	0 .1	0 .1
TP4 3	3.0	4 Jun-6	4896 S0	000	-	<0.2	<0.5	<1	<3	<1	<25	<50	<100	<100	0.3	<0.5	3.4										
TP4 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.2	<0.5	3.3	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	1.3	1.9	13										
TP44 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP44 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP44 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	<0.5	04	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP44 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	98	15.0	0										
TP44 A	-	4 Jun-6	4896 S0	nd	ACM identified in soil sample	0 .2	0 .5	<1	<3	<1	<25	<50	<100	<100	1.4	20	13	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	<0.1	<0.1	<0.1
TP44 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	00 0	100	2.5	3.6	0										
TP4 1	1.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 2	2.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP4 3	3.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	1.2	18	14	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0.2
TP4 4	4 0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	80 0	100	48	7.1	66										
TP4 5	5.0	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	0 0	100	9	3.1	37	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP46 1	1.0	22-Jun-6	4896 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP46 2	2.0	22-Jun-6	4896 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP46 3	3.0	22-Jun-6	4896 SET51111	nd	ACM identified in soil sample	0 .2	0 .5	<1	<3	<1	<25	<50	<100	<100	0.2	<0.5	2.5	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	<0 1	<0 1	<0 1	<0 1
TP46 4	4 0	22-Jun-6	4896 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	0 .5	1.5										
TP46 5	5.0	22-Jun-6	4896 SET51111	nd	ACM identified in soil sample	0 .2	0 .5	<1	<3	<1	<25	<50	<100	<100	0.2	<0.5	2.2	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	<0 1	<0 1	<0 1	<0 1
TP4 1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.5	0.7	5.0										
TP4 2	2.0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 1	<0 5	1.2	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 3	3.0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 1	<0 5	09										
TP4 4	4 0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 4	0 6	4 4	0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP4 5	5.0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	2.3	3.3	21.0										
TP48 1	1.0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 3	0 5	3.4	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP48 2	2.0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 1	<0 5	06										
TP48 3	3.0	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 2	<0 5	29	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Asbestos w/w%	Asbestos ID	BTEX					TRH				PAH			Pesticides									
						Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene	F1	F2	F3	F4	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total PAH	DDT+DDE+DDD	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	OPP	PCB
SITE ASSESSMENT CRITERIA																											
HIL D Commercial / Industrial (NEPC, 2013)				0 0	-	-	-	-	-	-	-	-	-	-	-	40	4000	600	4	0	000	00	0	80	00	-	7
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	4	NL	NL	NL	NL	310	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	6	NL	NL	NL	NL	480	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	9	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	20	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	800	000	000	0000	-	-	-	-	-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				-	-	-	-	-	-	370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	95	135	185	180	-	215	170	2500	6600	1.4	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	430	99000	27000	81000	11000	26000	20000	27000	38000	-	-	-	-	-	-	-	-	-	-	-	-	-
TP48 4	4 0	4 Jun-6	49980 SET51111	nd	Bonded ACM <7mm and >7mm	0 .2	0 .5	<1	<3	<1	<25	<50	<100	<100	0.1	<0.5	04										
TP48 5	5.0	4 Jun-6	49980 SET51111	nd	Bonded ACM <7mm and >7mm	0 .2	0 .5	<1	<3	<1	<25	<50	<100	<100	0.6	0.9	6.4	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP49 1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	40 0	100	9	12.0	00 0										
TP49 2	2.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.6	0.9	6.8										
TP49 3	3.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	<0.5	1.3	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP49 4	4 0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.8	1.2	9.9										
TP49 4 ACM	-	4 Jun-6	ASET51111	nd	ACM identified in soil sample																						
TP49 5	5.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.8	1.2	10.0	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP0 1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	<0.5	10	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP0 2	2.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.2	0 .5	2.8										
TP0 3	3.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.4	0.7	6.3										
TP0 4	4 0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.5	0.8	6.2	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP0 5	5.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.3	0.5	3.5	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP52-1	1.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.9	1.4	12.0	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP52-2	2.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.5	0.7	4.2										
TP52-3	3.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.4	0.6	3.2	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP52-4	4 0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	40	<00	0 3	<0 5	3.1										
TP52-5	5.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP53-1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP53-2	2.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP53-3	3.0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 .05	0 .5	NIL (+)VE										
TP53-4	4 0	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP53-5	5.0	4 Jun-6	49980		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	<0 0	<0 5	NIL (+)VE										
TP4 1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP4 2	2.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP4 3	3.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP4 4	4 0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP4 5	5.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	0 1										
TP55-1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP55-2	2.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP55-3	3.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP55-4	4 0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP55-5	5.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP6 1	1.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP6 2	2.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP6 3	3.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP6 4	4 0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP6 5	5.0	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	<0.05	<0 5	NIL (+)VE										
TP8 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.9	1.2	9.2										
TP8 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.5	0.7	4.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP8 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	2.6										
TP8 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP8 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP9 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	4.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP9 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	110	<120	8	3.8	25										
TP9 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	110	<120	0.9	1.3	9.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP9 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	9	2.7	22										
TP9 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.3	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP60 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP60 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.6	0.9	7.2	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP60 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.1	<0.3	<0.8										
TP60 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	2.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP60 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	4.4										
TP6 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.7	4.0										
TP6 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	3.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.6										
TP6 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP6 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Asbestos w/w%	Asbestos ID	BTEX					TRH				PAH			Pesticides									
						Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene	F1	F2	F3	F4	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total PAH	DDT+DDE+DDD	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	OPP	PCB
SITE ASSESSMENT CRITERIA																											
HIL D Commercial / Industrial (NEPC, 2013)				0 0	-	-	-	-	-	-	-	-	-	-	-	40	4000	600	4	0	000	00	0	80	00	-	7
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	4	NL	NL	NL	NL	310	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	6	NL	NL	NL	NL	480	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	9	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	20	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	800	000	000	0000	-	-	-	-	-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				-	-	-	-	-	-	370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	95	135	185	180	-	215	170	2500	6600	1.4	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	430	99000	27000	81000	11000	26000	20000	27000	38000	-	-	-	-	-	-	-	-	-	-	-	-	-
TP6 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 3	3.0	23-Sep-6	SE49 S94	0 0	-	<0.1	<0.1	<0.1	<0.3	<0.1	<25	<25	300	<120	0.8	1.1	7.7										
TP6 4	4.0	23-Sep-6	SE49 S94	0 00	-	<0.1	<0.1	<0.1	<0.3	<0.1	<25	<25	110	<120	0.6	0.9	6.3	<0.1	<0.1	<0.1	<0.1	<0.1	0 .1	0 .1	0 .1	0 .1	0 .1
TP6 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	290	<120	1.4	2.0	13										
TP6 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP6 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	4.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.6	0.9	7.8										
TP6 5	5.0	23-Sep-6	SE49 S94	0 06	-	<0.1	<0.1	<0.1	<0.3	<0.1	<25	60	1200	<120	0.9	1.3	8.4	<0.1	<0.1	<0.1	<0.1	<0.1	0 .1	0 .1	0 .1	0 .1	0 .1
TP64 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP64 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP64 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP64 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP64 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.5	0.8	5.7										
TP6 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP6 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	150	<120	9	4 2	0	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP6 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	3.1										
TP6 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.6	1.0	6.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP66 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP66 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP66 3	3.0	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<0	0 9	1.3	11	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP66 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	4.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP66 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP6 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	2.8										
TP6 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP6 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.3										
TP6 4 ACM	-	23-Sep-6	AS94	nd	ACM >7mm identified in soil sample																						
TP6 5	5.0	23-Sep-6	SE49 S94	0 0009	-	<0 1	<0 1	<0 1	<0 3	<0.1	<25	<25	9 0	<120	0.8	1.2	11	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP68 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.7	1.0	6.5										
TP68 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	2.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP68 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.3	1.8										
TP68 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP68 5	5.0	23-Sep-6	SE49 S94	0 00	-	<0.1	<0.1	<0.1	<0.3	<0.1	<25	<25	<90	<120	0.1	<0.3	1.0										
TP69 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	310	<120	2.1	3.1	23	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP69 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.1										
TP69 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.7										
TP69 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	1.2	1.7	13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP69 5	5.0	23-Sep-6	SE49 S94	0 00	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP0 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.6	0.9	5.9										
TP0 2	2.0	23-Sep-6	SE49 S94	0 000	-	<0 1	<0 1	<0 1	<0 3	<0.1	<25	<25	9 0	<120	0 .1	0 .3	0 8	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP0 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.9	1.3	9.2										
TP0 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	130	<120	8	2.6	9	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP0 5	5.0	23-Sep-6	SE49 S94	0 000	-	<0 1	<0 1	<0 1	<0 3	<0.1	<25	<25	110	<120	0.7	1.1	79										
TP71-1	1.0	23-Sep-6	SE49 S94	0 000	-	<0 1	<0 1	<0 1	<0 3	<0.1	<25	<25	<90	<120	06	09	59										
TP71-2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP71-3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP71-4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP71-5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	100	<120	0.6	0.8	5.1										
TP72-1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	3.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP72-2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	100	<120	0.2	0.4	2.3										
TP72-3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	nd	nd	0.4	nd	nd	nd	nd	nd	nd	nd
TP72-4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.2	0.4	2.2										
TP72-5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	110	<120	0.2	0.3	1.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP73-1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	4.0										
TP73-2	2.0	23-Sep-6	SE49 S94	nd	ACM visually identified	0 .1	0 .1	0 .1	0 .3	0 .1	<25	<25	9 0	<120	0.5	0.7	4.7										
TP73-3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	1.0	1.4	11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP73-4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	4.0										

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Asbestos w/w%	Asbestos ID	BTEX				Naphthalene	TRH				PAH			Pesticides									PCB
						Benzene	Toluene	Ethylbenzene	Xylene		F1	F2	F3	F4	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total PAH	DDT+DDE+DDD	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	OPP	
SITE ASSESSMENT CRITERIA																											
HIL D Commercial / Industrial (NEPC, 2013)				0 0	-	-	-	-	-	-	-	-	-	-	-	40	4000	600	4	0	000	00	0	80	00	-	7
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	4	NL	NL	NL	NL	310	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	6	NL	NL	NL	NL	480	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	9	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	20	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	800	000	000	0000	-	-	-	-	-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				-	-	-	-	-	-	370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	95	135	185	180	-	215	170	2500	6600	1.4	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	430	99000	27000	81000	11000	26000	20000	27000	38000	-	-	-	-	-	-	-	-	-	-	-	-	-
TP73-5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP4 1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	2.7										
TP4 2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	130	<120	5.3	7.7	9	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP4 3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.7	3.4										
TP4 4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	100	<120	8	2.6	9	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP4 5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	140	<120	6	3.8	9										
TP75-1	1.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP75-2	2.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP75-3	3.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP75-4	4 0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP75-5	5.0	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

						BTEX					TRH				PAH			Pesticides									
Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Asbestos w/w%	Asbestos ID	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene	F1	F2	F3	F4	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total PAH	DDT+DDE+DDD	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	OPP	PCB
SITE ASSESSMENT CRITERIA																											
HIL D Commercial / Industrial (NEPC, 2013)				0 0	-	-	-	-	-	-	-	-	-	-	-	40	4000	600	4	0	000	00	0	80	00	-	7
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	4	NL	NL	NL	NL	310	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	6	NL	NL	NL	NL	480	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	9	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	20	NL	NL	NL	NL	NL	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	800	000	000	0000	-	-	-	-	-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				-	-	-	-	-	-	370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	95	135	185	180	-	215	170	2500	6600	1.4	-	-	-	-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	430	99000	27000	81000	11000	26000	20000	27000	38000	-	-	-	-	-	-	-	-	-	-	-	-	-
INTRA-LABORATORY DUPLICATES																											
TP40 1-A	-	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	1.4	2.1	15	0 .1	0.1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	1.5
TP4 1-A	-	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	00	<00	8	12.0	00	<0 1	<0 1	0 9	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP4 3-A	-	4 Jun-6	4896 S0	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.1	<0.5	1.2	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP44 4 A	-	4 Jun-6	AS0	nd	-																						
TP46 1-A	-	4 Jun-6	4896 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP48 1-A	-	4 Jun-6	498	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 3	0 6	4 1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP0 2-A	-	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.3	0 .5	2.7										
TP52-3-A	-	4 Jun-6	49980 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<100	0.3	<0.5	2.5	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP4 2-A	-	4 Jun-6	498 SET51111		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 0 5	<0.5	NIL (+)VE	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP55-5-A	-	4 Jun-6	ASET51111	nd	-																						
TP6 4	-	4 Jun-6	498 SET51111	nd	-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<0 0	0.05	<0.5	NIL (+)VE	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP8 1a	-	23-Sep-6	SE49 S94	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	9 0	<120	0.2	0.4	1.8										
TP6 1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.7	1.0	7.3										
TP6 1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP66 1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
TP68 1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	1.1	1.5	11										
TP0 1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.6	0.9	5.1										
TP71-1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.3	0.5	3.0										
TP75-1a	-	23-Sep-6	SE49 S94		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.3	<0.8										
INTER-LABORATORY DUPLICATES																											
TP40 1-B	-	4 Jun-6	4964 E44	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	100	<120	8	4 0	0	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	1.0
TP44 4 B	-	4 Jun-6	4964 E44	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.8	1.1	6.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP46 1-B	-	22-Jun-6	4964 E44	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP48 1-B	-	4 Jun-6	4964 E44	nd	-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<120	0.4	0.6	3.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP0 2-B	-	4 Jun-6	4964	nd	-																						
TP4 2-B	-	4 Jun-6	SE44		-	<0 1	<0 1	<0 1	<0 3	<0 1	<25	<25	<90	<0	<0 1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TP55-5-B	-	4 Jun-6	4964	nd	-																						
TP8 1B	-	23-Sep-6	48		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 6	0 8	7.8	<0.1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1	0 .1
TP6 1B	-	23-Sep-6	48		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP66 1B	-	23-Sep-6	48		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	<0 0	<0 5	NIL (+)VE	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP0 1B	-	23-Sep-6	48		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 1	<0 5	1.7	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1	<0 1
TP75-1B	-	23-Sep-6	48		-	<0 2	<0 5	<1	<3	<1	<25	<0	<00	<00	0 0	<0 5	0 41	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
STATISTICAL ANALYSIS																											
Min						0 0	0 0	0 0	0 0	0 0	0 0	60 0	00 0	0 0	0 1	0 3	1.0	0 3	0 0	0 4	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Max						0 0	0 0	0 0	0 0	0 0	0 0	60 0	00 0	0 0	5.3	7.7	9 0	0 3	0 0	0 4	0 0	0 0	0 0	0 0	00	00	00
Avg						-	-	-	-	-	-	60.0	8 8	-	0 8	1.2	8 4	0 3	-	0 4	-	-	-	-	-	-	-
Stdev						-	-	-	-	-	-	-	272.1	-	0 9	1.3	9 7	-	-	-	-	-	-	-	-	-	-
Procedure B Calculation						-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
9 L						-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

* Depth relates to Depth Below Surface Level

NL = Not Limiting

RED = Exceeds HIL Criteria

nd = Not Detected Above Laboratory LOR

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Heavy Metals: As	Cd	Cr VI	Cu	Pb	Hg	Ni	Zn	Foreign Materials
SITE ASSESSMENT CRITERIA												
HIL D Commercial / Industrial (NEPC, 2013)				000	900	600	40000	00	0	6000	400000	-
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				60	-	322	8	8	-	469	648	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	-	-	-	-	-	-	-
PRIMARY SAMPLES												
TP8 1	1.0	4 Jun-6	4896 S0	8	0.4	18	23	22	<0.1	12	43	
TP8 2	2.0	4 Jun-6	4896 S0	7	<0.4	20	29	31	<0.1	16	92	
TP8 3	3.0	4 Jun-6	4896 S0	8	0.4	18	20	59	<0.1	7	62	
TP8 4	4.0	4 Jun-6	4896 S0	5	<0.4	9	17	61	<0.1	13	93	
TP8 5	5.0	4 Jun-6	4896 S0	6	0.4	18	27	62	<0.1	14	130	
TP8 3 ACM	-	4 Jun-6	AS0									
TP9 1	1.0	4 Jun-6	4896 S0	8	0.6	16	36	37	<0.1	14	65	
TP9 2	2.0	4 Jun-6	4896 S0	9	0.4	21	24	44	0.1	14	69	
TP9 3	3.0	4 Jun-6	4896 S0		0 .7	11	36	58	<0.1	9	69	
TP9 4	4.0	4 Jun-6	4896 S0	5	<0.4	18	18	98	0.2	5	40	
TP9 5	5.0	4 Jun-6	4896 S0	4	0.4	11	19	33	<0.1	8	38	
TP40 1	1.0	4 Jun-6	4896 S0	7	<0.4	23	62	130	<0.1	18	110	
TP40 2	2.0	4 Jun-6	4896 S0	6	0.4	16	28	91	0.1	11	130	
TP40 3	3.0	4 Jun-6	4896 S0	5	<0.4	10	35	110	0.1	9	130	
TP40 4	4.0	4 Jun-6	4896 S0	9	0.6	12	39	290	0.2	19	460	
TP40 5	5.0	4 Jun-6	4896 S0	0	0 4	8	9	00	0 1	13	0	
TP4 1	1.0	4 Jun-6	4896 S0	8	0.4	12	22	90	<0.1	10	100	
TP4 2	2.0	4 Jun-6	4896 S0	8	0.5	18	33	190	<0.1	7	240	
TP4 3	3.0	4 Jun-6	4896 S0	8	0.4	16	15	34	<0.1	5	38	
TP4 4	4.0	4 Jun-6	4896 S0	6	0 9	15	0	0	0 1	8	90	
TP4 5	5.0	4 Jun-6	4896 S0	7	<0.4	18	30	19	<0.1	26	62	
TP4 1	1.0	4 Jun-6	4896 S0	6	0.4	21	16	18	<0.1	11	25	
TP4 2	2.0	4 Jun-6	4896 S0	9	0.4	23	51	120	<0.1	16	220	
TP4 3	3.0	4 Jun-6	4896 S0	8	0.4	16	24	32	<0.1	10	62	
TP4 4	4.0	4 Jun-6	4896 S0	9	0.4	18	19	24	<0.1	7	36	
TP4 5	5.0	4 Jun-6	4896 S0	4	0.4	7	39	67	0.2	6	39	
TP4 1	1.0	4 Jun-6	4896 S0	8	0.4	27	14	24	<0.1	8	20	
TP4 2	2.0	4 Jun-6	4896 S0	7	<0.4	18	30	100	0.1	10	96	
TP4 3	3.0	4 Jun-6	4896 S0	12	<0 4	17	4	73	<0 1	8	40	
TP4 4	4.0	4 Jun-6	4896 S0	11	0 4	9	400	00	0 3	0	0	
TP4 5	5.0	4 Jun-6	4896 S0		0 .5	16	97	170	0.3	24	240	
TP44 1	1.0	4 Jun-6	4896 S0	5	<0.4	16	20	18	<0.1	5	16	
TP44 2	2.0	4 Jun-6	4896 S0	7	<0.4	23	14	22	<0.1	7	18	
TP44 3	3.0	4 Jun-6	4896 S0	8	0.4	18	34	52	<0.1	10	73	
TP44 4	4.0	4 Jun-6	4896 S0	5	<0.4	14	52	120	0.2	15	270	
TP44 A	-	4 Jun-6	4896 S0	0	<0 4	15	8	99	<0 1	13	0	
TP44 5	5.0	4 Jun-6	4896 S0	11	0 4	8	0	0	0 2	11	0	
TP4 1	1.0	4 Jun-6	4896 S0	8	0.4	25	16	24	<0.1	8	23	
TP4 2	2.0	4 Jun-6	4896 S0	0	<0 4	23	6	4	<0 1	9	8	
TP4 3	3.0	4 Jun-6	4896 S0	8	0.4	16	30	75	0.1	12	130	
TP4 4	4.0	4 Jun-6	4896 S0	5	<0.4	9	22	79	0.1	4	510	
TP4 5	5.0	4 Jun-6	4896 S0	6	0.4	14	21	66	<0.1	5	90	
TP46 1	1.0	22-Jun-6	4896 SET51111	6	0.4	21	14	28	<0.1	8	22	
TP46 2	2.0	22-Jun-6	4896 SET51111	5	<0.4	22	16	12	<0.1	5	15	
TP46 3	3.0	22-Jun-6	4896 SET51111	5	<0.4	9	23	120	<0.1	6	00	
TP46 4	4.0	22-Jun-6	4896 SET51111	8	0.4	17	26	48	<0.1	8	96	
TP46 5	5.0	22-Jun-6	4896 SET51111	9	0.4	18	25	84	<0.1	8	60	
TP4 1	1.0	4 Jun-6	498 SET51111	13	0 4	37	6	4	<0 1	15	53	
TP4 2	2.0	4 Jun-6	498	6	0.4	17	36	40	<0.1	19	390	
TP4 3	3.0	4 Jun-6	498		0 .4	14	29	98	<0.1	7	600	
TP4 4	4 0	4 Jun-6	498	0	0 6	8	33	0	<0 1	7	77	
TP4 5	5.0	4 Jun-6	498	8	0.5	18	27	320	<0.1	9	180	
TP48 1	1.0	4 Jun-6	498	4	0 .4	15	12	53	0.1	7	60	
TP48 2	2.0	4 Jun-6	498	8	0.5	19	24	61	<0.1	11	90	
TP48 3	3.0	4 Jun-6	498	6	0.5	16	40	77	0.2	28	150	

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Heavy Metals								Foreign Materials
				As	Cd	Cr VI	Cu	Pb	Hg	Ni	Zn	
SITE ASSESSMENT CRITERIA												
HIL D Commercial / Industrial (NEPC, 2013)				000	900	600	40000	00	0	6000	400000	-
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				60	-	322	8	8	-	469	648	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	-	-	-	-	-	-	-
TP48 4	4 0	4 Jun-6	49980 SET51111	6	0.4	15	30	53	<0.1	15	92	
TP48 5	5.0	4 Jun-6	49980 SET51111	7	<0.4	19	26	82	<0.1	15	130	
TP49 1	1.0	4 Jun-6	498 SET51111	4	0 6	8	8	0	0 2	11	60	
TP49 2	2.0	4 Jun-6	49980 SET51111	5	<0.4	8	31	76	<0.1	5	54	
TP49 3	3.0	4 Jun-6	49980 SET51111	7	<0.4	19	36	75	<0.1	11	150	
TP49 4	4.0	4 Jun-6	49980 SET51111	8	0.4	21	46	77	0.1	15	120	
TP49 4 ACM	-	4 Jun-6	ASET51111									
TP49 5	5.0	4 Jun-6	49980 SET51111	8	0.4	16	50	110	0.1	11	150	
TP0 1	1.0	4 Jun-6	498 SET51111	12	<0 4	4	8	4	<0 1	4	72	
TP0 2	2.0	4 Jun-6	498 SET51111	8	0.4	17	34	50	<0.1	11	86	
TP0 3	3.0	4 Jun-6	49980 SET51111	11	<0 4	4	8	84	<0 1	11	0	
TP0 4	4.0	4 Jun-6	498 SET51111	0	0 6	0	8	89	<0 1	6	0	
TP0 5	5.0	4 Jun-6	49980 SET51111	9	0.4	17	48	110	<0.1	10	360	
TP52-1	1.0	4 Jun-6	49980 SET51111	48	0 5	17	55	90	0 2	15	68	
TP52-2	2.0	4 Jun-6	49980 SET51111	4	0.4	9	21	61	0.1	5	60	
TP52-3	3.0	4 Jun-6	498 SET51111	4	0 .4	11	21	38	0.1	6	41	
TP52-4	4.0	4 Jun-6	49980 SET51111	6	<0 4	4	0	0	0 1	15	0	
TP52-5	5.0	4 Jun-6	498 SET51111	4	0 .4	29	16	21	0 .1	11	26	
TP53-1	1.0	4 Jun-6	498 SET51111	12	0 4	9	21	9	<0 1	11	9	
TP53-2	2.0	4 Jun-6	49980 SET51111	17	<0 4	6	4	8	<0 1	6	0	
TP53-3	3.0	4 Jun-6	49980 SET51111	0	<0 4	6	9	6	<0 1	23	77	
TP53-4	4.0	4 Jun-6	49980 SET51111	4	0 4	8	48	19	<0.1	16	54	
TP53-5	5.0	4 Jun-6	49980	6	0.4	12	40	15	<0.1	18	69	
TP4 1	1.0	4 Jun-6	498 SET51111	11	<0 4	9	8	6	<0 1	9	35	
TP4 2	2.0	4 Jun-6	498 SET51111	8	0.4	17	27	14	<0.1	22	63	
TP4 3	3.0	4 Jun-6	498 SET51111	9	0.4	16	29	14	<0.1	22	62	
TP4 4	4 0	4 Jun-6	498 SET51111	6	0.4	14	47	17	<0.1	19	65	
TP4 5	5.0	4 Jun-6	498 SET51111	6	0.4	14	42	17	<0.1	20	69	
TP55-1	1.0	4 Jun-6	498 SET51111	8	0.5	27	25	19	<0.1	20	48	
TP55-2	2.0	4 Jun-6	498 SET51111	13	0 4	6	9	17	<0 1	6	4	
TP55-3	3.0	4 Jun-6	498 SET51111	0	<0 4	4	9	13	<0 1	0	6	
TP55-4	4 0	4 Jun-6	498 SET51111	5	<0.4	15	38	15	<0.1	23	66	
TP55-5	5.0	4 Jun-6	498 SET51111	8	0.4	19	33	17	<0.1	21	62	
TP6 1	1.0	4 Jun-6	498 SET51111	0	0 4	6	4	23	<0 1	4	6	
TP6 2	2.0	4 Jun-6	498 SET51111	11	0 4	17	8	6	<0 1	23	6	
TP6 3	3.0	4 Jun-6	498 SET51111	12	<0 4	6	8	15	<0 1	23	69	
TP6 4	4 0	4 Jun-6	498 SET51111	9	0.4	14	24	11	<0.1	17	51	
TP6 5	5.0	4 Jun-6	498 SET51111	0	0 4	17	0	4	<0 1	0	6	
TP8 1	1.0	23-Sep-6	SE49 S94	6	0.3	13	23	46	0.11	12	73	
TP8 2	2.0	23-Sep-6	SE49 S94	6	0.3	12	23	79	0.11	8.8	64	<0.07
TP8 3	3.0	23-Sep-6	SE49 S94	6	0.3	14	140	170	0.12	10	77	
TP8 4	4.0	23-Sep-6	SE49 S94		0 .4	11	25	29	0.08	6.5	65	
TP8 5	5.0	23-Sep-6	SE49 S94	7	<0.3	17	15	22	<0.05	6.9	42	<0.07
TP9 1	1.0	23-Sep-6	SE49 S94	6	0.3	15	23	37	0.07	12	68	<0.07
TP9 2	2.0	23-Sep-6	SE49 S94	5	<0.3	19	30	130	0.26	7.5	110	
TP9 3	3.0	23-Sep-6	SE49 S94	8	0.4	13	42	81	0.07	6.9	190	
TP9 4	4.0	23-Sep-6	SE49 S94	6	0.3	17	32	140	0.13	5.8	130	<0.07
TP9 5	5.0	23-Sep-6	SE49 S94	6	0.3	12	21	57	0.06	8.8	64	
TP60 1	1.0	23-Sep-6	SE49 S94	6	0.3	16	21	33	<0.05	9.0	0	
TP60 2	2.0	23-Sep-6	SE49 S94	0	<0 3	13	44	75	0 0	9 2	86	<0 0
TP60 3	3.0	23-Sep-6	SE49 S94	6	0.3	14	13	27	<0.05	2.4	47	<0.07
TP60 4	4.0	23-Sep-6	SE49 S94		0 .9	14	68	110	0.05	10	140	
TP60 5	5.0	23-Sep-6	SE49 S94	5	<0.3	9.4	0	29	0.08	3.8	0	
TP6 1	1.0	23-Sep-6	SE49 S94	7	<0.3	13	18	180	0.06	6.3	57	<0.07
TP6 2	2.0	23-Sep-6	SE49 S94	57	0 5	8	6	8	0 0	5.7	52	
TP6 3	3.0	23-Sep-6	SE49 S94	8	0 3	21	4	57	0 06	6 4	44	<0 0
TP6 4	4.0	23-Sep-6	SE49 S94	6	0.3	9.8	0	26	<0.05	9.	4 8	
TP6 5	5.0	23-Sep-6	SE49 S94	9	0.3	17	21	69	<0.05	7.4	81	
TP6 1	1.0	23-Sep-6	SE49 S94	7	<0.3	23	12	28	<0.05	5.1	21	

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Heavy Metals								Foreign Materials
				As	Cd	Cr VI	Cu	Pb	Hg	Ni	Zn	
SITE ASSESSMENT CRITERIA												
HIL D Commercial / Industrial (NEPC, 2013)				000	900	600	40000	00	0	6000	400000	-
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				60	-	322	8	8	-	469	648	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	-	-	-	-	-	-	-
TP6 2	2.0	23-Sep-6	SE49 S94	7	<0.3	24	13	24	<0.05	5.6	9	
TP6 3	3.0	23-Sep-6	SE49 S94	15	1.3	27	0	0	0 25	31	60	<0 0
TP6 4	4.0	23-Sep-6	SE49 S94	6	0.3	14	90	170	0.31	9.9	180	<0.07
TP6 5	5.0	23-Sep-6	SE49 S94	4	1.0	4	80	0	0 4	21	0	
TP6 1	1.0	23-Sep-6	SE49 S94	5	<0.3	18	15	24	<0.05	6.7	20	<0.07
TP6 2	2.0	23-Sep-6	SE49 S94	7	<0.3	18	14	26	<0.05	6.1	20	
TP6 3	3.0	23-Sep-6	SE49 S94	9	0 4	8	52	68	0 09	5.9	98	
TP6 4	4.0	23-Sep-6	SE49 S94	9	0 5	17	6	9	<0 0	6 4	0	
TP6 5	5.0	23-Sep-6	SE49 S94	13	1.1	8	40	00	0 17	23	0	<0 0
TP64 1	1.0	23-Sep-6	SE49 S94	8	0.3	23	16	27	<0.05	7.2	23	
TP64 2	2.0	23-Sep-6	SE49 S94	7	<0.3	22	15	25	<0.05	5.9	9	<0.07
TP64 3	3.0	23-Sep-6	SE49 S94	8	0.4	18	22	62	0.10	7.3	95	
TP64 4	4.0	23-Sep-6	SE49 S94		0 .3	21	30	41	<0.05	12	45	<0.07
TP64 5	5.0	23-Sep-6	SE49 S94	7	<0.3	12	32	97	0.17	7.5	74	
TP6 1	1.0	23-Sep-6	SE49 S94	0	0 4	23	15	25	<0 0	5.7	23	
TP6 2	2.0	23-Sep-6	SE49 S94	7	<0.3	20	14	25	<0.05	6.3	22	
TP6 3	3.0	23-Sep-6	SE49 S94	15	0 5	11	33	0	0 0	8 7	0	<0 0
TP6 4	4.0	23-Sep-6	SE49 S94						0 11			<0 0
TP6 5	5.0	23-Sep-6	SE49 S94						0 4			
TP66 1	1.0	23-Sep-6	SE49 S94						0 0 5			
TP66 2	2.0	23-Sep-6	SE49 S94						0 0 5			
TP66 3	3.0	23-Sep-6	SE49 S94						0 0			<0 0
TP66 4	4.0	23-Sep-6	SE49 S94						0 .05			0 .07
TP66 5	5.0	23-Sep-6	SE49 S94						0 08			
TP6 1	1.0	23-Sep-6	SE49 S94						0 0 5			
TP6 2	2.0	23-Sep-6	SE49 S94						0 0			
TP6 3	3.0	23-Sep-6	SE49 S94						0 6			
TP6 4	4.0	23-Sep-6	SE49 S94						0 .05			0 .07
TP6 4 ACM	-	23-Sep-6	AS94									
TP6 5	5.0	23-Sep-6	SE49 S94						0 08			<0 0
TP68 1	1.0	23-Sep-6	SE49 S94						0 09			
TP68 2	2.0	23-Sep-6	SE49 S94						0 11			
TP68 3	3.0	23-Sep-6	SE49 S94						0 0			<0 0
TP68 4	4.0	23-Sep-6	SE49 S94						0 0 5			
TP68 5	5.0	23-Sep-6	SE49 S94						0 4			<0 0
TP69 1	1.0	23-Sep-6	SE49 S94						0 4			
TP69 2	2.0	23-Sep-6	SE49 S94						0 08			<0 0
TP69 3	3.0	23-Sep-6	SE49 S94						0 8			<0 0
TP69 4	4.0	23-Sep-6	SE49 S94						0 0			
TP69 5	5.0	23-Sep-6	SE49 S94						0 06			
TP0 1	1.0	23-Sep-6	SE49 S94						0 6			0 09
TP0 2	2.0	23-Sep-6	SE49 S94						0 06			<0 0
TP0 3	3.0	23-Sep-6	SE49 S94						0 6			
TP0 4	4.0	23-Sep-6	SE49 S94						0 22			
TP0 5	5.0	23-Sep-6	SE49 S94						0 11			
TP71-1	1.0	23-Sep-6	SE49 S94						0 6			
TP71-2	2.0	23-Sep-6	SE49 S94						0 12			
TP71-3	3.0	23-Sep-6	SE49 S94						0 .05			0 .07
TP71-4	4.0	23-Sep-6	SE49 S94						0 0 5			
TP71-5	5.0	23-Sep-6	SE49 S94						0 4			<0 0
TP72-1	1.0	23-Sep-6	SE49 S94						0 94			
TP72-2	2.0	23-Sep-6	SE49 S94						0 06			<0 0
TP72-3	3.0	23-Sep-6	SE49 S94						0 08			<0 0
TP72-4	4.0	23-Sep-6	SE49 S94						0 0 5			
TP72-5	5.0	23-Sep-6	SE49 S94						0 06			
TP73-1	1.0	23-Sep-6	SE49 S94						0 12			
TP73-2	2.0	23-Sep-6	SE49 S94						0 09			<0 0
TP73-3	3.0	23-Sep-6	SE49 S94						0 15			
TP73-4	4.0	23-Sep-6	SE49 S94						0 0			<0 0

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Heavy Metals								Foreign Materials
				As	Cd	Cr VI	Cu	Pb	Hg	Ni	Zn	
SITE ASSESSMENT CRITERIA												
HIL D Commercial / Industrial (NEPC, 2013)				000	900	600	40000	00	0	6000	400000	-
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				60	-	322	8	8	-	469	648	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	-	-	-	-	-	-	-
TP73-5	5.0	23-Sep-6	SE49 S94						0 0			
TP4 1	1.0	23-Sep-6	SE49 S94						0 0			
TP4 2	2.0	23-Sep-6	SE49 S94						0 09			
TP4 3	3.0	23-Sep-6	SE49 S94						0 09			<0 0
TP4 4	4.0	23-Sep-6	SE49 S94						0 9			
TP4 5	5.0	23-Sep-6	SE49 S94						0 9			<0 0
TP75-1	1.0	23-Sep-6	SE49 S94						0 0 5			
TP75-2	2.0	23-Sep-6	SE49 S94						0 .05			0 .07
TP75-3	3.0	23-Sep-6	SE49 S94						0 0 5			
TP75-4	4.0	23-Sep-6	SE49 S94						0 .05			0 .07
TP75-5	5.0	23-Sep-6	SE49 S94						0 0 5			

Table 1 - Analytical Results Summary
Southern Bund Wall Assessment

Sample ID	Depth (m bgl)	Sample Date	Laboratory Report	Heavy Metals								Foreign Materials
				As	Cd	Cr VI	Cu	Pb	Hg	Ni	Zn	
SITE ASSESSMENT CRITERIA												
HIL D Commercial / Industrial (NEPC, 2013)				000	900	600	40000	00	0	6000	400000	-
HSL D Commercial / Industrial0 -<1m, clay(NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 1-<2m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial 2-<4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
HSL D Commercial / Industrial +4m, clay (NEPM, 2013)				-	-	-	-	-	-	-	-	-
Management Limits Commercial / Industrial, fine (NEPM, 2013)				-	-	-	-	-	-	-	-	-
EIL D Commercial / Industrial (NEPC, 0				60	-	322	8	8	-	469	648	-
ESL D Commercial / Industrial, clay(NEPM, 0				-	-	-	-	-	-	-	-	-
HSL D Direct Contact (Friebel, et al0				-	-	-	-	-	-	-	-	-
INTRA-LABORATORY DUPLICATES												
TP40 1-A	-	4 Jun-6	4896 S0	8	0.4	18	28	91	0.1	15	92	
TP4 1-A	-	4 Jun-6	4896 S0	5	<0.4	11	17	150	0.1	10	150	
TP4 3-A	-	4 Jun-6	4896 S0	7	<0.4	16	33	52	<0.1	21	260	
TP44 4 A	-	4 Jun-6	AS0									
TP46 1-A	-	4 Jun-6	4896 SET51111	7	<0.4	25	14	24	<0.1	8	23	
TP48 1-A	-	4 Jun-6	498	8	0.4	17	12	52	0.1	6	51	
TP0 2-A	-	4 Jun-6	49980 SET51111	6	0.4	19	23	48	<0.1	15	67	
TP52-3-A	-	4 Jun-6	49980 SET51111	5	<0.4	16	34	68	0.2	14	78	
TP4 2-A	-	4 Jun-6	498 SET51111	8	0.4	16	26	14	<0.1	21	61	
TP55-5-A	-	4 Jun-6	ASET51111									
TP6 4	-	4 Jun-6	498 SET51111	0	<0 4	15	25	11	<0 1	8	57	
TP8 1a	-	23-Sep-6	SE49 S94	6	0.3	14	26	47	0.09	8.	6 6	
TP6 1a	-	23-Sep-6	SE49 S94	7	<0.3	14	19	82	0.07	4.8	8	
TP6 1a	-	23-Sep-6	SE49 S94	8	0.3	18	13	26	<0.05	5.4	8	
TP66 1a	-	23-Sep-6	SE49 S94						0 0 5			
TP68 1a	-	23-Sep-6	SE49 S94						0 12			
TP0 1a	-	23-Sep-6	SE49 S94						0 53			
TP71-1a	-	23-Sep-6	SE49 S94						1.1			
TP75-1a	-	23-Sep-6	SE49 S94						0 0 5			
INTER-LABORATORY DUPLICATES												
TP40 1-B	-	4 Jun-6	4964 E44	6	0.9	17	27	110	0.07	12	110	
TP44 4 B	-	4 Jun-6	4964 E44	0	0 6	8	72	84	0 11	9 2	40	
TP46 1-B	-	22-Jun-6	4964 E44	9	0.5	29	14	28	<0.05	6.8	24	
TP48 1-B	-	4 Jun-6	4964 E44	4	0.3	12	13	57	0.13	4.2	76	
TP0 2-B	-	4 Jun-6	4964									
TP4 2-B	-	4 Jun-6	SE44	0	0 5	8	32	6	<0 0	4	8	
TP55-5-B	-	4 Jun-6	4964									
TP8 1B	-	23-Sep-6	48	7	<0.4	15	22	50	0.1	10	61	
TP6 1B	-	23-Sep-6	48	7	<0.4	22	15	30	<0.1	7	23	
TP66 1B	-	23-Sep-6	48	8	0.4	26	15	21	<0.1	7	19	
TP0 1B	-	23-Sep-6	48	4	<0 4	23	6	6	0 9	22	60	
TP75-1B	-	23-Sep-6	48	0	<0 4	27	17	22	<0 1	0	9	
STATISTICAL ANALYSIS												
Min				5.0	0 3	9 4	12.0	22.0	0 1	2.4	9 0	-
Max				57.0	1.3	8 0	40 0	00 0	0 9	31.0	60 0	-
Avg				0 4	0 6	17.1	4 4	121.9	0 2	8 8	111.8	-
Stdev				9 8	0 3	4 8	8 8	0 0	0 2	5.4	4 7	-
Procedure B Calculation				-	-	-	-	-	-	-	-	-
9 L				-	-	-	-	-	-	-	-	-

* Depth relates to Depth Below Surface Level

NL = Not Limiting

RED = Exceeds HIL Criteria

nd = Not Detected Above Laboratory LOR

Appendix H:
Areas of Environmental Concern (ERM, December 2019)

ERM The business of sustainability

Compiled
TR

Legend

- Site Boundary
- Stage Boundaries
- Outside development area (E2 Conservation)
- Area applicable to revised RAP
- Camide Landfill subject to EMP
- Southern and Eastern Bund walls
- Data Gap areas
- Area covered by 2014 RAP

N

Approximate Scale

0m 60m 120m

Figure Title				
Updated RAP AECs				
Project Title: Horsley Park Remediation Action Plan			Client: CSR	
Project No.: 0449086	Date: 12/12/2019	Scale: As Shown	Figure No.: 3	Revision: Version 2

ERM

Compiled
NN

Legend

- Site Boundary
- Exclusion Zone
- ATA
- Critical Habitat

N

Approximate Scale

0m 150m 300m

Figure Title Site Layout				
Project Title 327-335 Burley Road, Horsley Park		Client CSR		
Project No. 0449086	Date 04/06/2018	Scale As Shown	Figure No. 1	Revision Version 1.0

Appendix I:
Validation Sample Location Plans
(ERM, September 2021)

Notes:

Areas and dimension contained within this plan are for D.A purpose only and may vary subject to final survey.

Source:

Client Provided, Drawing No. X13044 - Sk936, Amendment (0), Dated 23/12/2020

Client provided Survey

2

Drawing No: 0449086m_HP2bV_C001_R0.cdr		**Horsley Park Stage 2B Validation** **6 Johnston Crescent, Horsley Park NSW 2175**
Date: 19/02/2021	Drawing size: A4	
Drawn by: CB	Reviewed by: TR	Client: CSR

0 100 200m

N

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

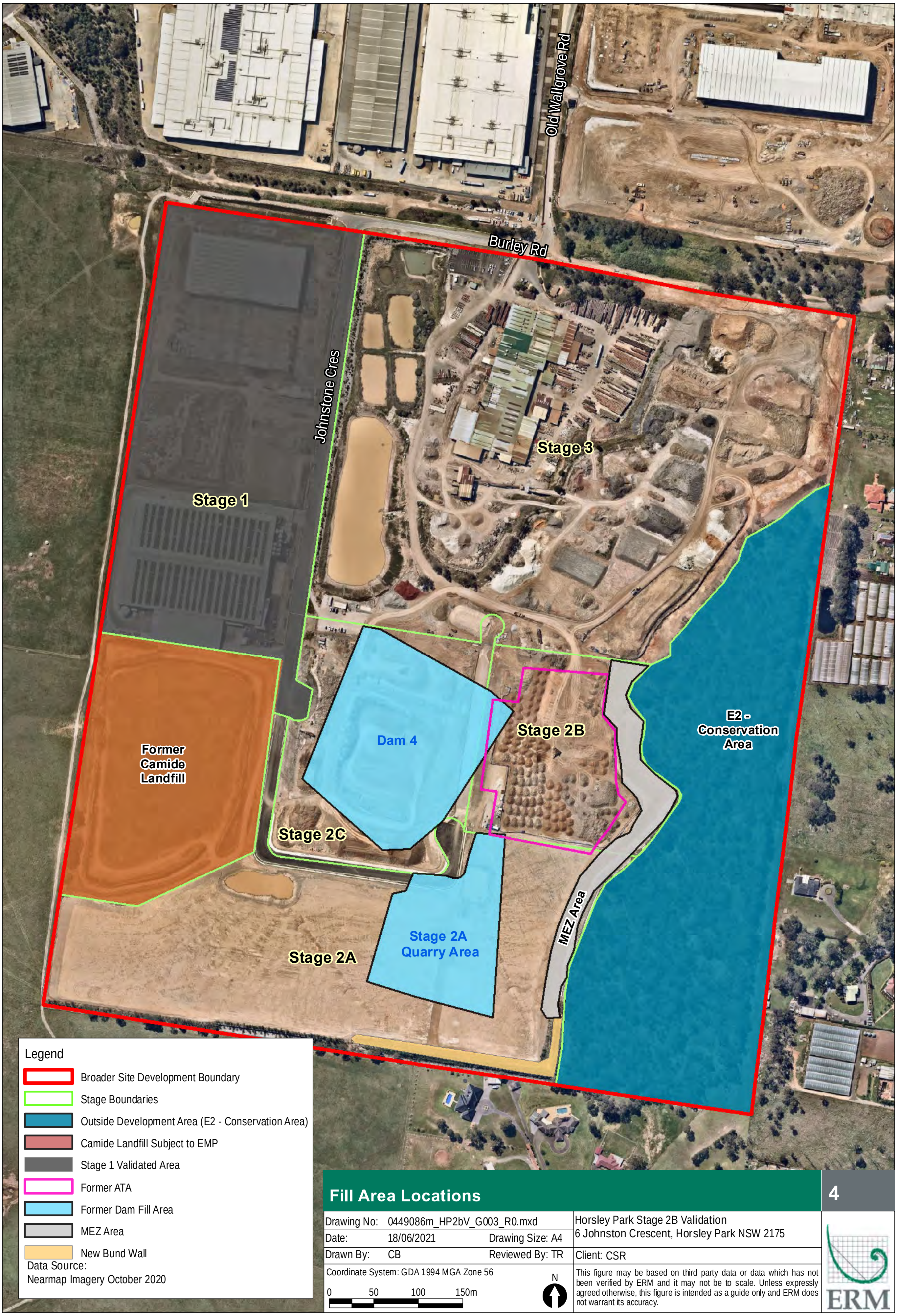
ERM

Remediation Areas

3

Drawing No: 0449086m_HP2bV_G002_R0.mxd		Horsley Park Stage 2B Validation 6 Johnston Crescent, Horsley Park NSW 2175
Date: 22/02/2021	Drawing Size: A4	
Drawn By: CB	Reviewed By: TR	Client: CSR
Coordinate System: GDA 1994 MGA Zone 56 0 50 100 150m	N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

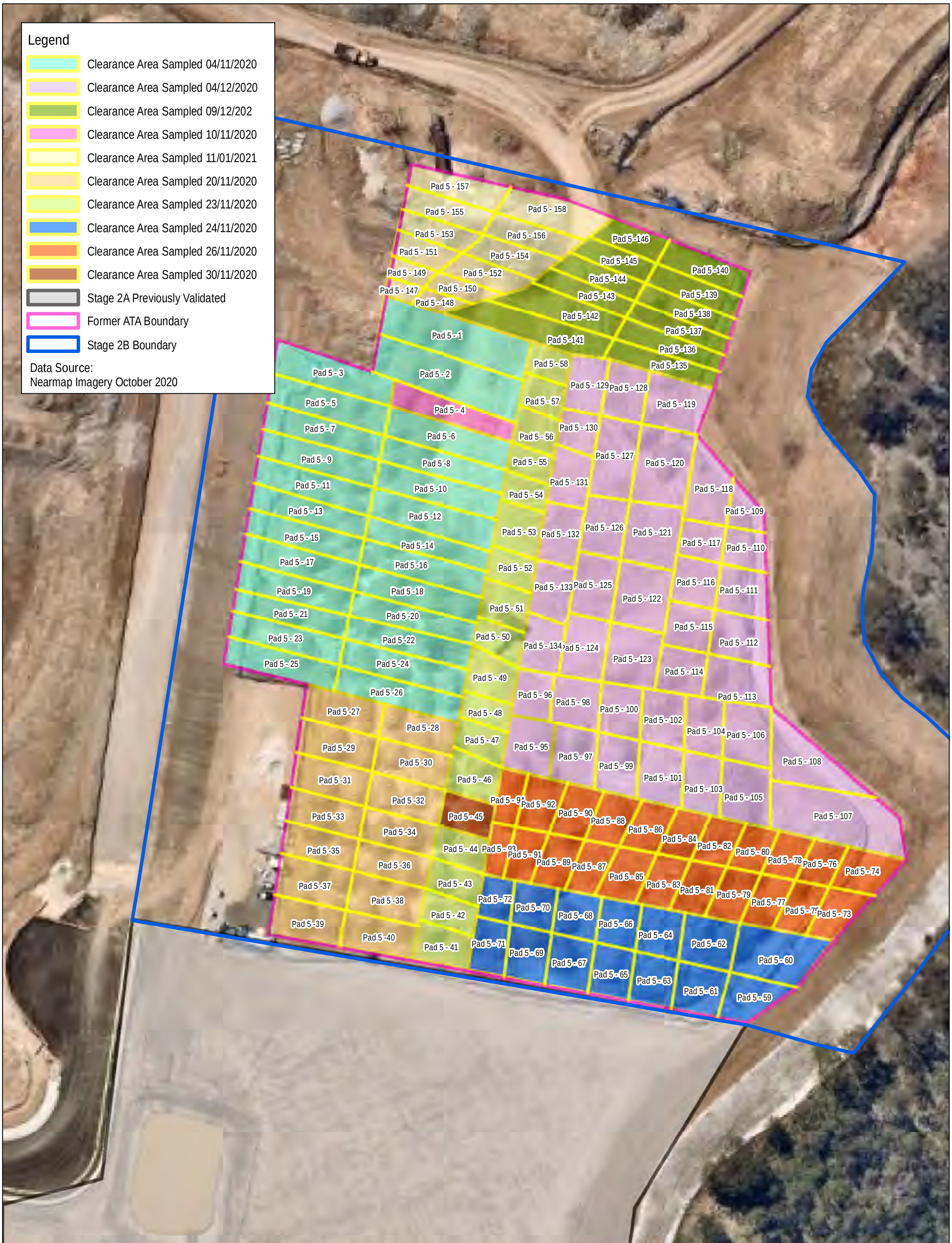


Fill Area Locations

4

Drawing No:	0449086m_HP2bV_G003_R0.mxd		Horsley Park Stage 2B Validation 6 Johnston Crescent, Horsley Park NSW 2175
Date:	18/06/2021	Drawing Size: A4	
Drawn By:	CB	Reviewed By: TR	Client: CSR
Coordinate System: GDA 1994 MGA Zone 56			This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM



Validation Sample Locations Pad 5

5

Drawing No: 0449086m_HP2bV_G004_R0.mxd		Horsley Park Stage 2B Validation 6 Johnston Crescent, Horsley Park NSW 2175
Date: 22/02/2021	Drawing Size: A4	
Drawn By: CB	Reviewed By: TR	Client: CSR
Coordinate System: GDA 1994 MGA Zone 56 0 10 20 30m	N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Appendix J: Validation Analytical Summary Tables (ERM, September 2021)

Health Screening Levels Comm Ind (w/w %)				0.001%	0.05%
Sample ID	Date	Lab Report	Comment	Asbestos in soil AF/FA	Asbestos in soil Bonded
Bund Footprint Samples					
Pad 5-1	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-2	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-3	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-4	4/11/2020	ASET89392	Footprint failed due to ACM. Requires re sample	nd	**0.041**
Pad 5-4-V	10/11/2020	ASET89519	Cleared Footprint Area	nd	nd
Pad 5-5	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-6	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-7	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-8	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-9	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-10	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-11	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-12	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-13	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-14	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-15	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-16	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-17	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-18	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-19	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-20	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-21	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-22	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-23	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-24	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-25	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-26	4/11/2020	ASET89392	Cleared Footprint Area	nd	nd
Pad 5-27	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-28	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-29	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-30	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-31	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-32	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-33	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-34	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-35	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-36	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-37	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-38	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-39	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-40	20/11/2020	ASET89804	Cleared Footprint Area	nd	nd
Pad 5-41	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-42	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-43	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-44	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-45	23/11/2020	ASET89824	Footprint failed due to AF/FA. Requires re sample	**0.00005**	nd
Pad 5-45-V	30/11/2020	ASET89995	Cleared Footprint Area	nd	nd
Pad 5-46	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-47	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-48	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-49	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-50	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd

Health Screening Levels Comm Ind (w/w %)				0.001%	0.05%
Sample ID	Date	Lab Report	Comment	Asbestos in soil	
				AF/FA	Bonded
Bund Footprint Samples					
Pad 5-51	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-52	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-53	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-54	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-55	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-56	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-57	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-58	23/11/2020	ASET89824	Cleared Footprint Area	nd	nd
Pad 5-59	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-60	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-61	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-62	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-63	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-64	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-65	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-66	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-67	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-68	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-69	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-70	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-71	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-72	24/11/2020	ASET89862	Cleared Footprint Area	nd	nd
Pad 5-73	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-74	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-75	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-76	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-77	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-78	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-79	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-80	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-81	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-82	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-83	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-84	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-85	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-86	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-87	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-88	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-89	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-90	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-91	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-92	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-93	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-94	26/11/2020	ASET89931	Cleared Footprint Area	nd	nd
Pad 5-95	30/11/2020	ASET89994	Footprint failed due to AF/FA. Requires re sample	**0.0004**	nd
Pad 5-95-V	4/12/2020	ASET90102	Cleared Footprint Area	nd	nd
Pad 5-96	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-97	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-98	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-99	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-100	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-101	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-102	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd

Health Screening Levels Comm Ind (w/w %)				0.001%	0.05%
Sample ID	Date	Lab Report	Comment	Asbestos in soil	
				AF/FA	Bonded
Bund Footprint Samples					
Pad 5-103	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-104	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-105	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-106	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-107	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-108	30/11/2020	ASET89994	Cleared Footprint Area	nd	nd
Pad 5-109	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-110	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-111	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-112	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-113	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-114	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-115	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-116	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-117	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-118	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-119	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-120	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-121	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-122	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-123	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-124	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-125	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-126	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-127	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-128	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-129	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-130	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-131	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-132	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-133	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-134	4/12/2020	ASET90101	Cleared Footprint Area	nd	nd
Pad 5-135	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-136	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-137	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-138	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-139	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-140	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-141	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-142	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-143	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-144	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-145	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-146	9/12/2020	ASET90169	Cleared Footprint Area	nd	nd
Pad 5-147	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-148	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-149	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-150	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-151	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-152	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-153	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-154	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-155	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd

Health Screening Levels Comm Ind (w/w %)				0.001%	0.05%
Sample ID	Date	Lab Report	Comment	Asbestos in soil	
				AF/FA	Bonded
Bund Footprint Samples					
Pad 5-156	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-157	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd
Pad 5-158	11/01/2021	ASET90583	Cleared Footprint Area	nd	nd

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	**Date**	**Lab Report**	**Asbestos in soil**	
			AF/FA (%)	**Bonded**
Site Sourced Fill				
GASP-1	17/06/2019	ASET74251	No	No
GASP-1A	17/06/2019	ASET74251	No	No
GASP-2	17/06/2019	ASET74251	No	No
GASP-3	17/06/2019	ASET74251	No	No
GASP-4	17/06/2019	ASET74251	No	No
GASP-5	17/06/2019	ASET74251	No	No
GASP-6	17/06/2019	ASET74251	No	No
GASP-7	17/06/2019	ASET74251	No	No
GASP-8	17/06/2019	ASET74251	No	No
GASP-9	17/06/2019	ASET74251	No	No
GASP-10	17/06/2019	ASET74251	No	No
O9SP-1	29/11/2019	ASET78132	No	No
O9SP-2	29/11/2019	ASET78132	No	No
O9SP-3	29/11/2019	ASET78132	No	No
O9SP-4	29/11/2019	ASET78132	No	No
O9SP-5	29/11/2019	ASET78132	No	No
O9SP-6	29/11/2019	ASET78132	No	No
O9SP-6A	29/11/2019	ASET78132	No	No
O9SP-7	29/11/2019	ASET78132	No	No
O9SP-8	29/11/2019	ASET78132	No	No
O9SP-9	29/11/2019	ASET78132	No	No
O9SP-10	29/11/2019	ASET78132	No	No
O9SP-11	14/01/2020	ASET78917	No	No
O9SP-11-A	14/01/2020	ASET78917	No	No
O9SP-12	14/01/2020	ASET78917	No	No
O9SP-13	14/01/2020	ASET78917	No	No
O9SP-14	14/01/2020	ASET78917	No	No
O9SP-15	14/01/2020	ASET78917	No	No
TP-P11-1.O	22/10/2019	ASET77207	No	No
TP-P11-2.O	22/10/2019	ASET77207	No	No
TP-P11-3.O	22/10/2019	ASET77207	No	No
TP-P11-4.O	22/10/2019	ASET77207	No	No
TP-P11-5.O	22/10/2019	ASET77207	No	No
UFEBP10_Surface 1	16/10/2019	ASET77033	No	No
UFEBP10_Surface 2	16/10/2019	ASET77033	No	No
UFEBP10_Surface 3	16/10/2019	ASET77033	No	No
UFEBP10_Surface 4	16/10/2019	ASET77033	No	No
UFEBP10_B1	18/10/2019	ASET77125	No	No
UFEBP10_B1-A	18/10/2019	ASET77125	No	No

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	Date	Lab Report	Asbestos in soil	
			AF/FA (%)	Bonded
Site Sourced Fill				
UFEBP10_B2	18/10/2019	ASET77125	No	No
UFEBP10_B3	18/10/2019	ASET77125	No	No
UFEBP10_B4	18/10/2019	ASET77125	No	No
UFEBP10_B5	18/10/2019	ASET77125	No	No
UFEBP10_B6	18/10/2019	ASET77125	No	No

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	Date	Lab Report	Asbestos in soil	
			AF/FA (%)	Bonded
Site Sourced Fill				
UFEBP10_B7	18/10/2019	ASET77125	No	No
UFEBP10_B8	18/10/2019	ASET77125	No	No
UFEBP10_B9	18/10/2019	ASET77125	No	No
UFEBP10_B10	18/10/2019	ASET77125	No	No
UFEBP10_B10-A	18/10/2019	ASET77125	No	No
UFEBP10_B11	18/10/2019	ASET77125	No	No
UFEBP10_B12	18/10/2019	ASET77125	No	No
UFEBP10_B13	18/10/2019	ASET77125	No	No
UFEBP10_B14	18/10/2019	ASET77125	No	No
UFEBP10_B15	18/10/2019	ASET77125	No	No
UFEBP10_B16	18/10/2019	ASET77125	No	No
UFEBP10-N1-1.0	18/10/2019	ASET77125	No	No
UFEBP10-N2-1.0	18/10/2019	ASET77125	No	No
UFEBP10-N2-2.0	18/10/2019	ASET77125	No	No
UFEBP10-N2-3.0	18/10/2019	ASET77125	No	No
UFEBP10-N3-1.0	18/10/2019	ASET77125	No	No
UFEBP10-N3-2.0	18/10/2019	ASET77125	No	No
UFEBP10-N3-3.0	18/10/2019	ASET77125	No	No
UFEBP10-N4-1.0	18/10/2019	ASET77125	No	No
UFEBP10-N4-1.0-A	18/10/2019	ASET77125	No	No
UFEBP10-S1-1.0	18/10/2019	ASET77125	No	No
UFEBP10-S2-1.0	18/10/2019	ASET77125	No	No
UFEBP10-S2-2.0	18/10/2019	ASET77125	No	No
UFEBP10-S3-1.0	18/10/2019	ASET77125	No	No
UFEBP10-S3-2.0	18/10/2019	ASET77125	No	No
UFEBP10-S4-1.0	18/10/2019	ASET77125	No	No
UFEBP10-S4-2.0	18/10/2019	ASET77125	No	No
UFEBP10-S4-2.0-A	18/10/2019	ASET77125	No	No
TS-1	13/11/2019	ASET77665	No	No
TS-1-A	13/11/2019	ASET77665	No	No
TS-2	13/11/2019	ASET77665	No	No
TS-3	13/11/2019	ASET77665	No	No
TS-4	13/11/2019	ASET77665	No	No
TS-5	13/11/2019	ASET77665	No	No
TS-6	13/11/2019	ASET77665	No	No
TS-7	13/11/2019	ASET77665	No	No
TS-8	13/11/2019	ASET77665	No	No
TS-9	13/11/2019	ASET77665	No	No
TS-10	13/11/2019	ASET77665	No	No

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	Date	Lab Report	Asbestos in soil	
			AF/FA (%)	Bonded
Site Sourced Fill				
TS-11	13/11/2019	ASET77665	No	No
TS-12	13/11/2019	ASET77665	No	No
TS-13	13/11/2019	ASET77665	No	No
TS-14	13/11/2019	ASET77665	No	No
TS-15	13/11/2019	ASET77665	0.00001	No

Sample ID	Date	Lab Report	Asbestos in soil AF/FA (%)	Asbestos in soil Bonded
Health Screening Levels Comm Ind (w/w %)			0.001%	0.05%
Site Sourced Fill				
TS-16	13/11/2019	ASET77665	No	No
TS-17	13/11/2019	ASET77665	No	No
TS-18	13/11/2019	ASET77665	No	No
TS-19	13/11/2019	ASET77665	No	No
TS-20	13/11/2019	ASET77665	No	No
TS-20-A	13/11/2019	ASET77665	No	No
N10SP-1	19/12/2019	ASET78592	No	No
N10SP-1-A	19/12/2019	ASET78592	No	No
N10SP-2	19/12/2019	ASET78592	No	No
N10SP-3	19/12/2019	ASET78592	No	No
N10SP-4	19/12/2019	ASET78592	No	No
N10SP-5	19/12/2019	ASET78592	No	No
N10SP-6	19/12/2019	ASET78592	No	No
N10SP-7	19/12/2019	ASET78592	No	No
N10SP-8	19/12/2019	ASET78592	No	No
N10SP-9	19/12/2019	ASET78592	No	No
N10SP-10	19/12/2019	ASET78592	0.00003	No
N10SP-11	19/12/2019	ASET78592	No	No
N10SP-12	19/12/2019	ASET78592	0.00003	No
N10SP-13	19/12/2019	ASET78592	No	No
N10SP-14	19/12/2019	ASET78592	No	No
N10SP-15	19/12/2019	ASET78592	No	No
N10SP-16	19/12/2019	ASET78592	No	No
N10SP-17	19/12/2019	ASET78592	No	No
N10SP-18	19/12/2019	ASET78592	No	No
N10SP-19	19/12/2019	ASET78592	No	No
N10SP-20	19/12/2019	ASET78592	No	No
N10SP-20-A	19/12/2019	ASET78592	No	No
LC-1-Londonderry Clays	17/08/2020	ASET87222	No	No
LC-2-Londonderry Clays	17/08/2020	ASET87222	No	No
LC-3-Londonderry Clays	17/08/2020	ASET87222	No	No
LC-4-Londonderry Clays	17/08/2020	ASET87222	No	No
KG-1-KG Pink	17/08/2020	ASET87222	No	No
KG-2-KG Pink	17/08/2020	ASET87222	No	No
KG-3-KG Pink	17/08/2020	ASET87222	No	No
KG-4-KG Pink	17/08/2020	ASET87222	No	No
KG-5-KG Pink	17/08/2020	ASET87222	No	No
KG-6-KG Pink	17/08/2020	ASET87222	No	No
KG-7-KG Pink	17/08/2020	ASET87222	No	No

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	**Date**	**Lab Report**	**Asbestos in soil**	
			AF/FA (%)	**Bonded**
Site Sourced Fill				
KG-8-KG Pink	17/08/2020	ASET87222	No	No
KG-9-KG Pink	17/08/2020	ASET87222	No	No
KG-10-KG Pink	17/08/2020	ASET87222	No	No
KG-11-KG Pink	17/08/2020	ASET87222	No	No

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	Date	Lab Report	Asbestos in soil	
			AF/FA (%)	Bonded
Site Sourced Fill				
CAS-1-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-2-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-3-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-4-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-5-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-5A-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-6-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-7-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-8-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-9-Chatswood Apricot Shales	17/08/2020	ASET87222	No	No
CAS-10	18/08/2020	ASET87266	No	No
CAS-11	18/08/2020	ASET87266	No	No
CAS-12	18/08/2020	ASET87266	No	No
CAS-13	18/08/2020	ASET87266	No	No
CAS-14	18/08/2020	ASET87266	No	No
CAS-15	18/08/2020	ASET87266	No	No
CAS-16	18/08/2020	ASET87266	No	No
CAS-17	18/08/2020	ASET87266	No	No
CAS-18	18/08/2020	ASET87266	No	No
CAS-19	18/08/2020	ASET87266	No	No
CAS-20	18/08/2020	ASET87266	No	No
CAS-21	18/08/2020	ASET87266	No	No
CAS-22	18/08/2020	ASET87266	No	No
CAS-23	18/08/2020	ASET87266	No	No
CAS-24	18/08/2020	ASET87266	No	No
CAS-25	18/08/2020	ASET87266	No	No
CAS-26	18/08/2020	ASET87266	No	No
CAS-27	18/08/2020	ASET87266	No	No
CAS-28	18/08/2020	ASET87266	No	No
CAS-29	18/08/2020	ASET87266	No	No
CAS-30	18/08/2020	ASET87266	No	No
CAS-31	18/08/2020	ASET87266	No	No
CAS-32	18/08/2020	ASET87266	No	No
CAS-33	18/08/2020	ASET87266	No	No
L5-5	3/09/2020	ASET87759	No	No
CAS-34	3/09/2020	ASET87759	No	No
CAS-35	3/09/2020	ASET87759	No	No
CAS-36	3/09/2020	ASET87759	No	No
KG12	3/09/2020	ASET87760	No	No

		Health Screening Levels Comm Ind (w/w %)	0.001%	0.05%
Sample ID	Date	Lab Report	Asbestos in soil	
			AF/FA (%)	Bonded
Site Sourced Fill				
KG13	3/09/2020	ASET87760	No	No
KG14	3/09/2020	ASET87760	No	No
KG15	3/09/2020	ASET87760	nd	No

									Moisture Content	NA					Naphthalene	OCP		OCs	OPs				PAH/Phenols (SIM)														
			Omethoate	Pirimiphos-methyl	Pyrazophos	Sum of PAHs	Terbufos	Tetrachlorvinphos	Moisture Content	Toluene	Benzene	Benzo(a)pyrene	Ethylbenzene	Sum of Xylenes	Naphthalene	Vic EPA IWRG 621 OCP (Total)*	Vic EPA IWRG 621 Other OCP (Total)*	Toxaphene	Mevinphos (Phosdrin)	Naled (Dibrom)	Tokuthion	Trichloronate	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Benz(a)anthracene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ (zero)	Benzo(b+j)fluoranthene	Benzo(g.h.i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a.h)anthracene	Indeno(1.2.3.cd)pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.2	0.2	0.5	0.2	0.2	1	0.1	0.1	0.5	0.1	0.3	0.5	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care (2011) Direct Contact HSL D - Comm/Ind										99000	430		27000	81000	11000																						
NEPM (1999) EIL - Commercial/Industrial															370																						
NEPM (1999) ESL - Commercial/Industrial (fine)										135	95	1.4	185	95																							
NEPM (1999) HIL D - Commercial/Industrial						4000												160											40								
NEPM (1999) HSL D Comm/Indust - Vl Clay 0 to <1 m										NL	4		NL	NL	NL																						
NEPM (1999) HSL D Comm/Indust - Vl Clay 1 to <2 m										NL	6		NL	NL	NL																						
NEPM (1999) HSL D Comm/Indust - Vl Clay 2 to <4 m										NL	9		NL	NL	NL																						
NEPM (1999) HSL D Comm/Indust - Vl Clay 4 m+										NL	NL		NL	NL	NL																						
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																					
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																			
S3 BUND - 36	4/02/2021	771989	<2	<0.2	<0.2	<0.5	<0.2	<0.2	-	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 BUND - 37	4/02/2021	771989	<2	<0.2	<0.2	<0.5	<0.2	<0.2	-	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 BUND - 38	4/02/2021	771989	<2	<0.2	<0.2	<0.5	<0.2	<0.2	-	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 BUND - 39	4/02/2021	771989	<2	<0.2	<0.2	<0.5	<0.2	<0.2	-	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 BUND - 40	4/02/2021	771989	<2	<0.2	<0.2	<0.5	<0.2	<0.2	-	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 BUND - 41	4/02/2021	771989	<2	<0.2	<0.2	<0.5	<0.2	<0.2	-	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -1	13/10/2020	ES2035977	-	-	-	-	-	-	9.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -10	13/10/2020	ES2035977	-	-	-	-	-	-	12.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -11	13/10/2020	ES2035977	-	-	-	-	-	-	13.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -12	13/10/2020	ES2035977	-	-	-	-	-	-	12.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -13	13/10/2020	ES2035977	-	-	-	-	-	-	11.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -14	13/10/2020	ES2035977	-	-	-	-	-	-	9.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -15	13/10/2020	ES2035977	-	-	-	-	-	-	18.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -16	13/10/2020	ES2035977	-	-	-	-	-	-	9.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -17	13/10/2020	ES2035977	-	-	-	-	-	-	11.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -18	13/10/2020	ES2035977	-	-	-	-	-	-	10.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -19	13/10/2020	ES2035977	-	-	-	-	-	-	11.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -2	13/10/2020	ES2035977	-	-	-	-	-	-	7.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -20	13/10/2020	ES2035977	-	-	-	-	-	-	11.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -21	13/10/2020	ES2035977	-	-	-	-	-	-	11.3	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -22	13/10/2020	ES2035977	-	-	-	-	-	-	10.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -23	13/10/2020	ES2035977	-	-	-	-	-	-	11.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -24	13/10/2020	ES2035977	-	-	-	-	-	-	13.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -25	13/10/2020	ES2035977	-	-	-	-	-	-	13.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -26	13/10/2020	ES2035977	-	-	-	-	-	-	12.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -27	13/10/2020	ES2035977	-	-	-	-	-	-	10.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -28	13/10/2020	ES2035977	-	-	-	-	-	-	7.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -29	13/10/2020	ES2035977	-	-	-	-	-	-	8.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -3	13/10/2020	ES2035977	-	-	-	-	-	-	10.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -30	13/10/2020	ES2035977	-	-	-	-	-	-	12.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -31	13/10/2020	ES2035977	-	-	-	-	-	-	11.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -32	13/10/2020	ES2035977	-	-	-	-	-	-	8.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -33	13/10/2020	ES2035977	-	-	-	-	-	-	7.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -34	13/10/2020	ES2035977	-	-	-	-	-	-	9.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -35	13/10/2020	ES2035977	-	-	-	-	-	-	8.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -4	13/10/2020	ES2035977	-	-	-	-	-	-	8.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -5	13/10/2020	ES2035977	-	-	-	-	-	-	8.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -6	13/10/2020	ES2035977	-	-	-	-	-	-	9.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -7	13/10/2020	ES2035977	-	-	-	-	-	-	10.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -8	13/10/2020	ES2035977	-	-	-	-	-	-	10.3	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
S3 Bund -9	13/10/2020	ES2035977	-	-	-	-	-	-	13.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP116_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	12.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP116_1.0	3/07/2019	ES1921141	-	-	-	-	-	-	19.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP116_1.5	3/07/2019	ES1921141	-	-	-	-	-	-	17.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP116_3.0	3/07/2019	ES1921141	-	-	-	-	-	-	16.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP116_4.0	3/07/2019	ES1921141	-	-	-	-	-	-	13.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP117_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	15.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP117_1.0	3/07/2019	ES1921141	-	-	-	-	-	-	20.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP117_2.0	3/07/2019	ES1921141	-	-	-	-	-	-	12.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP117_5.0	3/07/2019	ES1921141	-	-	-	-	-	-	16	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP120_0.1	2/07/2019	ES1921013	-	-	-	-	-	-	6.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP120_1	2/07/2019	ES1921013	-	-	-	-	-	-	6.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP120_2	2/07/2019	ES1921013	-	-	-	-	-	-	8.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

ERM

									Moisture Content	NA					Naphthalene	OCP		OCs	OPs				PAH/Phenols (SIM)														
			Omethoate	Pirimiphos-methyl	Pyrazophos	Sum of PAHs	Terbufos	Tetrachlorvinphos	Moisture Content	Toluene	Benzene	Benzo(a)pyrene	Ethylbenzene	Sum of Xylenes	Naphthalene	Vic EPA IWRG 621 OCP (Total)*	Vic EPA IWRG 621 Other OCP (Total)*	Toxaphene	Mevinphos (Phosdrin)	Naled (Dibrom)	Tokuthion	Trichloronate	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Benz(a)anthracene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ (zero)	Benzo(b+j)fluoranthene	Benzo(g.h.i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a.h)anthracene	Indeno(1.2.3.cd)pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.2	0.2	0.5	0.2	0.2	1	0.1	0.1	0.5	0.1	0.3	0.5	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC Care (2011) Direct Contact HSL D - Comm/Ind										99000	430		27000	81000	11000																						
NEPM (1999) EIL - Commercial/Industrial															370																						
NEPM (1999) ESL - Commercial/Industrial (fine)										135	95	1.4	185	95																							
NEPM (1999) HIL D - Commercial/Industrial						4000												160											40								
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m										NL	4		NL	NL	NL																						
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m										NL	6		NL	NL	NL																						
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m										NL	9		NL	NL	NL																						
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+										NL	NL		NL	NL	NL																						
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																					
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																			
TP120_3	2/07/2019	ES1921013	-	-	-	-	-	-	8.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP120_4	2/07/2019	ES1921013	-	-	-	-	-	-	10.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP120_5	2/07/2019	ES1921013	-	-	-	-	-	-	7.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP124_0.1	2/07/2019	ES1921013	-	-	-	-	-	-	7.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP124_1	2/07/2019	ES1921013	-	-	-	-	-	-	8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP124_2	2/07/2019	ES1921013	-	-	-	-	-	-	6.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP124_3	2/07/2019	ES1921013	-	-	-	-	-	-	8.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP33_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	16.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP33_1.0	3/07/2019	ES1921141	-	-	-	-	-	-	12.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP33_2.0	3/07/2019	ES1921141	-	-	-	-	-	-	12.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP33_3.0	3/07/2019	ES1921141	-	-	-	-	-	-	15	<0.5	<0.2	0.6	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	1	<0.5	0.6	1	1.3	0.7	0.7	<0.5	<0.5	0.6	<0.5	<0.5
TP33_4.0	3/07/2019	ES1921141	-	-	-	-	-	-	12.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP64_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	15.3	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP66_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	13.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP67_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	9.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP67_1.0	3/07/2019	ES1921141	-	-	-	-	-	-	11	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP67_2.0	3/07/2019	ES1921141	-	-	-	-	-	-	12.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP8_0.1	2/07/2019	ES1921013	-	-	-	-	-	-	8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP8_1	2/07/2019	ES1921013	-	-	-	-	-	-	7.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP8_2	2/07/2019	ES1921013	-	-	-	-	-	-	8.3	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP8_3	2/07/2019	ES1921013	-	-	-	-	-	-	8.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP8_4	2/07/2019	ES1921013	-	-	-	-	-	-	8.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP8_5.5	2/07/2019	ES1921013	-	-	-	-	-	-	9.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP9_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	9.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP9_1.0	3/07/2019	ES1921141	-	-	-	-	-	-	8.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP9_2.0	3/07/2019	ES1921141	-	-	-	-	-	-	10	<0.5	<0.2	0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	1.2	<0.5	0.6	0.9	1.2	0.6	0.5	<0.5	<0.5	0.5	<0.5	<0.5
TP9_3.0	3/07/2019	ES1921141	-	-	-	-	-	-	12.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP9_4.0	3/07/2019	ES1921141	-	-	-	-	-	-	16.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP95_0.1	3/07/2019	ES1921141	-	-	-	-	-	-	19.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP95_1.0	3/07/2019	ES1921141	-	-	-	-	-	-	13.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP95_2.0	3/07/2019	ES1921141	-	-	-	-	-	-	16.3	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TP95_3.0	3/07/2019	ES1921141	-	-	-	-	-	-	11.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Statistical Summary																																					
Number of Results			6	6	6	6	6	6	79	85	85	85	85	85	85	6	6	6	6	6	6	6	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Number of Detects			0	0	0	0	0	0	79	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	85	85	2	2	0	0	2	0	0
Minimum Concentration			<2	<0.2	<0.2	<0.5	<0.2	<0.2	6.5	<0.1	<0.1	<0.5	<0.1	<0.3	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Minimum Detect			ND	ND	ND	ND	ND	ND	6.5	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	0.6	0.6	1.2	0.6	0.5	ND	ND	0.5	ND	ND
Maximum Concentration			<2	<0.2	<0.2	<0.5	<0.2	<0.2	20.8	<0.5	<0.2	0.6	<0.5	<0.5	<0.5	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	1.2	<0.5	0.6	1	1.3	0.7	0.7	<0.5	<0.5	0.6	<0.5	<0.5
Maximum Detect			ND	ND	ND	ND	ND	ND	20.8	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	0.6	1	1.3	0.7	0.7	ND	ND	0.6	ND	ND
Average Concentration			1	0.1	0.1	0.25	0.1	0.1	11	0.24	0.096	0.26	0.24	0.24	0.25	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.25	0.25	0.25	0.27	0.25	0.26	0.61	1.2	0.26	0.26	0.25	0.25	0.26	0.25	0.25
Median Concentration			1	0.1	0.1	0.25	0.1	0.1	11	0.25	0.1	0.25	0.25	0.25	0.25	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation			0	0	0	0	0	0	3.2	0.052	0.013	0.046	0.052	0.026	0	0	0	0	0	0	0	0	0	0	0	0.13	0	0.053	0.054	0.011	0.061	0.056	0	0	0.046	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

						SVOC				TRH - Semivolatile Fraction									TRH Volatiles/BTEX						Inorganics	Metals								PCBs					
			Phenanthrene	Pyrene	Sum of polycyclic aromatic hydrocarbons	Demeton-O	Demeton-S	EPN	Fensulfothion	>C10 - C16 Fraction	>C10 - C16 Fraction minus Naphthalene (F2)	>C10 - C40 Fraction (sum)	>C16 - C34 Fraction	>C34 - C40 Fraction	C10 - C14 Fraction	C10 - C36 Fraction (sum)	C15 - C28 Fraction	C29 - C36 Fraction	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	C6 - C9 Fraction	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Moisture Content (dried @ 103°C)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.2	0.2	0.2	0.2	50	50	50	100	100	20	50	50	50	10	10	10	0.2	0.1	0.2	1	2	0.4	2	5	5	0.1	2	5	0.5	0.1	0.5	0.5	0.5	0.5
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																							
NEPM (1999) EIL - Commercial/Industrial																										160		680	290	1800		300	690						
NEPM (1999) ESL - Commercial/Industrial (fine)																																							
NEPM (1999) HIL D - Commercial/Industrial																										3000	900	3600	240000	1500	730	6000	400000						
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m											NL									310																			
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m											NL									480																			
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m											NL									NL																			
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+											NL									NL																			
NEPM (1999) Management Limits - Commercial/Industrial (fine)										1000			5000	10000					800																				
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																					
S3 BUND - 36	4/02/2021	771989	<0.5	<0.5	-	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<20	<50	<50	<50	<20	<20	<20	<0.2	<0.1	-	13	17	<0.4	44	36	52	<0.1	23	110	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
S3 BUND - 37	4/02/2021	771989	<0.5	<0.5	-	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<20	<50	<50	<50	<20	<20	<20	<0.2	<0.1	-	17	16	<0.4	36	48	43	<0.1	30	110	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
S3 BUND - 38	4/02/2021	771989	<0.5	<0.5	-	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<20	<50	<50	<50	<20	<20	<20	<0.2	<0.1	-	16	12	<0.4	35	39	34	<0.1	26	90	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
S3 BUND - 39	4/02/2021	771989	<0.5	<0.5	-	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<20	<50	<50	<50	<20	<20	<20	<0.2	<0.1	-	17	20	<0.4	39	52	45	<0.1	31	120	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
S3 BUND - 40	4/02/2021	771989	<0.5	<0.5	-	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<20	<50	<50	<50	<20	<20	<20	<0.2	<0.1	-	16	16	<0.4	29	48	38	<0.1	26	99	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
S3 BUND - 41	4/02/2021	771989	<0.5	<0.5	-	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<20	<50	<50	<50	<20	<20	<20	<0.2	<0.1	-	17	15	<0.4	31	42	34	<0.1	24	93	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
S3 Bund -1	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	12	20	16	<0.1	10	37	-	-	-	-	-	-
S3 Bund -10	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	13	20	16	<0.1	10	39	-	-	-	-	-	-
S3 Bund -11	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	14	21	17	<0.1	10	39	-	-	-	-	-	-
S3 Bund -12	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	12	22	16	<0.1	10	40	-	-	-	-	-	-
S3 Bund -13	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	13	23	21	<0.1	11	82	-	-	-	-	-	-
S3 Bund -14	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	11	19	15	<0.1	10	39	-	-	-	-	-	-
S3 Bund -15	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	13	22	16	<0.1	11	41	-	-	-	-	-	-
S3 Bund -16	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	13	19	16	<0.1	10	40	-	-	-	-	-	-
S3 Bund -17	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	13	22	16	<0.1	12	55	-	-	-	-	-	-
S3 Bund -18	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	13	21	14	<0.1	12	43	-	-	-	-	-	-
S3 Bund -19	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	16	25	16	<0.1	12	50	-	-	-	-	-	-
S3 Bund -2	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	10	13	11	<0.1	4	17	-	-	-	-	-	-
S3 Bund -20	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	15	22	17	<0.1	12	45	-	-	-	-	-	-
S3 Bund -21	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	14	23	19	<0.1	10	40	-	-	-	-	-	-
S3 Bund -22	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	14	19	16	<0.1	12	45	-	-	-	-	-	-
S3 Bund -23	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	14	22	23	<0.1	12	43	-	-	-	-	-	-
S3 Bund -24	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	14	22	18	<0.1	11	45	-	-	-	-	-	-
S3 Bund -25	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	13	19	15	<0.1	10	36	-	-	-	-	-	-
S3 Bund -26	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	14	20	17	<0.1	10	40	-	-	-	-	-	-
S3 Bund -27	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	14	21	17	<0.1	12	40	-	-	-	-	-	-
S3 Bund -28	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	11	20	14	<0.1	9	34	-	-	-	-	-	-
S3 Bund -29	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	9	16	11	<0.1	6	26	-	-	-	-	-	-
S3 Bund -3	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	11	14	14	<0.1	4	18	-	-	-	-	-	-
S3 Bund -30	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	12	21	23	<0.1	11	47	-	-	-	-	-	-
S3 Bund -31	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	13	24	25	<0.1	10	46	-	-	-	-	-	-
S3 Bund -32	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	18	14	11	<0.1	5	21	-	-	-	-	-	-
S3 Bund -33	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	11	15	11	<0.1	4	20	-	-	-	-	-	-
S3 Bund -34	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	12	15	10	<0.1	5	20	-	-	-	-	-	-
S3 Bund -35	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	12	14	16	<0.1	5	24	-	-	-	-	-	-
S3 Bund -4	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	10	18	30	<0.1	6	40	-	-	-	-	-	-
S3 Bund -5	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	11	15	12	<0.1	5	22	-	-	-	-	-	-
S3 Bund -6	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	11	18	14	<0.1	8	33	-	-	-	-	-	-
S3 Bund -7	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	14	21	17	<0.1	10	39	-	-	-	-	-	-
S3 Bund -8	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	12	19	14	<0.1	10	35	-	-	-	-	-	-
S3 Bund -9	13/10/2020	ES2035977	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	12	20	13	<0.1	9	38	-	-	-	-	-	-
TP116_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	8	31	12	<0.1	12	95	-	-	-	-	-	-
TP116_1.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	8	32	13	<0.1	11	48	-	-	-	-	-	-
TP116_1.5	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	6	12	17	<0.1	<2	14	-	-	-	-	-	-
TP116_3.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	11	<1	22	25	19	<0.1	13	46	-	-	-	-	-	-
TP116_4.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	14	<1	9	17	6	<0.1	4	34	-	-	-	-	-	-
TP117_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	10	<1	11	32	15	<0.1	15	78	-	-	-	-	-	-
TP117_1.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	17	<1	19	38	21	<0.1	16	73	-	-	-	-	-	-
TP117_2.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	11	<1	10	47	20	<0.1	32	128	-	-	-	-	-	-
TP117_5.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	7	20	18	<0.1	4	16	-	-	-	-	-	-
TP120_0.1	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	14	33	52	0.1	15	129	-	-	-	-	-	-
TP120_1	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	21	33	39	<0.1	20	130	-	-	-	-	-	-
TP120_2	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	13	39	26	<0.1	19	98	-	-	-	-	-	-

						SVOC				TRH - Semivolatile Fraction									TRH Volatiles/BTEX						Inorganics	Metals								PCBs					
			Phenanthrene	Pyrene	Sum of polycyclic aromatic hydrocarbons	Demeton-O	Demeton-S	EPN	Fensulfothion	>C10 - C16 Fraction	>C10 - C16 Fraction minus Naphthalene (F2)	>C10 - C40 Fraction (sum)	>C16 - C34 Fraction	>C34 - C40 Fraction	C10 - C14 Fraction	C10 - C36 Fraction (sum)	C15 - C28 Fraction	C29 - C36 Fraction	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	C6 - C9 Fraction	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Moisture Content (dried @ 103°C)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.2	0.2	0.2	0.2	50	50	50	100	100	20	50	50	50	10	10	10	0.2	0.1	0.2	1	2	0.4	2	5	5	0.1	2	5	0.5	0.1	0.5	0.5	0.5	0.5
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																							
NEPM (1999) EIL - Commercial/Industrial																										160		680	290	1800		300	690						
NEPM (1999) ESL - Commercial/Industrial (fine)																																							
NEPM (1999) HIL D - Commercial/Industrial																										3000	900	3600	240000	1500	730	6000	400000						
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m											NL									310																			
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m											NL									480																			
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m											NL									NL																			
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+											NL									NL																			
NEPM (1999) Management Limits - Commercial/Industrial (fine)									1000			5000	10000					800																					
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																					
TP120_3	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	15	38	85	<0.1	17	103	-	-	-	-	-	-
TP120_4	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	9	<1	17	33	21	<0.1	19	94	-	-	-	-	-	-
TP120_5	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	9	<1	19	42	32	<0.1	22	117	-	-	-	-	-	-
TP124_0.1	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	11	<1	17	33	19	<0.1	18	74	-	-	-	-	-	-
TP124_1	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	15	26	44	<0.1	15	81	-	-	-	-	-	-
TP124_2	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	46	27	47	<0.1	30	76	-	-	-	-	-	-
TP124_3	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	9	<1	16	34	61	<0.1	27	94	-	-	-	-	-	-
TP33_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	16	<1	11	30	21	<0.1	12	75	-	-	-	-	-	-
TP33_1.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	17	25	27	<0.1	19	70	-	-	-	-	-	-
TP33_2.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	14	<1	16	22	78	<0.1	16	86	-	-	-	-	-	-
TP33_3.0	3/07/2019	ES1921141	<0.5	1.1	4.6	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	18	134	71	<0.1	13	83	-	-	-	-	-	-
TP33_4.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	15	152	75	<0.1	22	145	-	-	-	-	-	-
TP64_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	9	<1	19	34	18	<0.1	13	55	-	-	-	-	-	-
TP66_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	17	24	18	<0.1	13	45	-	-	-	-	-	-
TP67_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	8	30	14	<0.1	13	62	-	-	-	-	-	-
TP67_1.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	10	<1	18	27	29	<0.1	14	54	-	-	-	-	-	-
TP67_2.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	13	<1	20	25	24	<0.1	15	50	-	-	-	-	-	-
TP8_0.1	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	19	26	31	<0.1	15	75	-	-	-	-	-	-
TP8_1	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	18	25	37	<0.1	14	62	-	-	-	-	-	-
TP8_2	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	15	26	49	<0.1	11	149	-	-	-	-	-	-
TP8_3	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	22	29	44	<0.1	18	81	-	-	-	-	-	-
TP8_4	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	5	<1	14	36	80	<0.1	13	141	-	-	-	-	-	-
TP8_5.5	2/07/2019	ES1921013	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	8	<1	18	27	50	<0.1	17	98	-	-	-	-	-	-
TP9_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	16	26	76	0.1	14	81	-	-	-	-	-	-
TP9_1.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	12	33	65	<0.1	14	156	-	-	-	-	-	-
TP9_2.0	3/07/2019	ES1921141	1	1.3	5.6	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	13	28	76	<0.1	14	116	-	-	-	-	-	-
TP9_3.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	7	<1	13	31	51	<0.1	19	116	-	-	-	-	-	-
TP9_4.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	14	15	20	<0.1	7	33	-	-	-	-	-	-
TP95_0.1	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	6	<1	9	28	13	<0.1	12	61	-	-	-	-	-	-
TP95_1.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	10	12	16	<0.1	7	24	-	-	-	-	-	-
TP95_2.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	12	<1	22	27	14	<0.1	12	47	-	-	-	-	-	-
TP95_3.0	3/07/2019	ES1921141	<0.5	<0.5	<0.5	-	-	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	-	<5	<1	6	19	7	<0.1	5	26	-	-	-	-	-	-
Statistical Summary																																							
Number of Results			85	85	79	6	6	6	6	85	85	85	85	85	85	85	85	85	85	85	85	85	85	79	6	85	85	85	85	85	85	85	85	6	6	6	6	6	6
Number of Detects			1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	66	0	85	85	85	2	84	85	0	0	0	0	0	0
Minimum Concentration			<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<50	<50	<50	<100	<100	<20	<50	<50	<50	<10	<10	<10	<0.2	<0.1	<0.2	13	<5	<0.4	6	12	6	<0.1	<2	14	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Minimum Detect			1	1.1	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	13	5	ND	6	12	6	0.1	4	14	ND	ND	ND	ND	ND	ND
Maximum Concentration			1	1.3	5.6	<0.2	<0.2	<0.2	<0.2	<50	<50	<100	<100	<100	<50	<50	<100	<100	<20	<20	<20	<0.5	<0.5	<0.2	17	20	<1	46	152	85	0.1	32	156	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
Maximum Detect			1	1.3	5.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	20	ND	46	152	85	0.1	32	156	ND	ND	ND	ND	ND	ND
Average Concentration			0.26	0.27	0.37	0.1	0.1	0.1	0.1	25	25	27	50	50	24	25	48	48	5.4	5.4	5.4	0.24	0.24	0.1	16	7.1	0.48	16	29	28	0.051	13	64	0.25	0.05	0.25	0.25	0.25	0.25
Median Concentration			0.25	0.25	0.25	0.1	0.1	0.1	0.1	25	25	25	50	50	25	25	50	50	5	5	5	0.25	0.25	0.1	16.5	7	0.5	14	25	19	0.05	12	50	0.25	0.05	0.25	0.25	0.25	0.25
Standard Deviation			0.081	0.15	0.77	0	0	0	0	0	0	6.4	0	0	3.9	0	6.4	6.4	1.3	1.3	1.3	0.039	0.052	0	1.5	4.1	0.077	7.6	20	20	0.0076	6.7	36	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

					Pesticides																																	
			Arochlor 1260	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Disulfoton	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Ethoprop
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																						
NEPM (1999) EIL - Commercial/Industrial																						640																
NEPM (1999) ESL - Commercial/Industrial (fine)																																						
NEPM (1999) HIL D - Commercial/Industrial				7				45					530				2000						3600							2000				100				
NEPM (1999) HSL D Comm/Indust - Vl Clay 0 to <1 m																																						
NEPM (1999) HSL D Comm/Indust - Vl Clay 1 to <2 m																																						
NEPM (1999) HSL D Comm/Indust - Vl Clay 2 to <4 m																																						
NEPM (1999) HSL D Comm/Indust - Vl Clay 4 m+																																						
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																						
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																				
S3 BUND - 36	4/02/2021	771989	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	<0.1	-	-	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.05	<0.05	-	<0.2	<0.2	<0.05	<0.2	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
S3 BUND - 37	4/02/2021	771989	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	<0.1	-	-	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.05	<0.05	-	<0.2	<0.2	<0.05	<0.2	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
S3 BUND - 38	4/02/2021	771989	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	<0.1	-	-	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.05	<0.05	-	<0.2	<0.2	<0.05	<0.2	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
S3 BUND - 39	4/02/2021	771989	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	<0.1	-	-	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.05	<0.05	-	<0.2	<0.2	<0.05	<0.2	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
S3 BUND - 40	4/02/2021	771989	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	<0.1	-	-	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.05	<0.05	-	<0.2	<0.2	<0.05	<0.2	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
S3 BUND - 41	4/02/2021	771989	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	<0.1	-	-	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.05	<0.05	-	<0.2	<0.2	<0.05	<0.2	<0.2	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
S3 Bund -1	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -10	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -11	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -12	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -13	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -14	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -15	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -16	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -17	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -18	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -19	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -2	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -20	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -21	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -22	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -23	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -24	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -25	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -26	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -27	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -28	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -29	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -3	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -30	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -31	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -32	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -33	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -34	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -35	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -4	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -5	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -6	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -7	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -8	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
S3 Bund -9	13/10/2020	ES2035977	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP116_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP116_1.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP116_1.5	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP116_3.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP116_4.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP117_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP117_1.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP117_2.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP117_5.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP120_0.1	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP120_1	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP120_2	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-

					Pesticides																																	
			Arochlor 1260	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Disulfoton	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Ethoprop
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																						
NEPM (1999) EIL - Commercial/Industrial																						640																
NEPM (1999) ESL - Commercial/Industrial (fine)																																						
NEPM (1999) HIL D - Commercial/Industrial				7				45					530				2000						3600							2000				100				
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m																																						
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m																																						
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m																																						
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+																																						
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																						
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																				
TP120_3	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP120_4	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP120_5	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP124_0.1	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP124_1	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP124_2	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP124_3	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP33_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP33_1.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP33_2.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP33_3.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP33_4.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP64_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP66_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP67_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP67_1.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP67_2.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP8_0.1	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP8_1	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP8_2	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP8_3	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP8_4	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP8_5.5	2/07/2019	ES1921013	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP9_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP9_1.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP9_2.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP9_3.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP9_4.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP95_0.1	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP95_1.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP95_2.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
TP95_3.0	3/07/2019	ES1921141	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Statistical Summary																																						
Number of Results			6	85	85	85	85	85	85	85	79	79	85	79	79	85	85	85	6	85	85	85	85	79	85	85	85	85	6	79	85	85	85	85	85	85	85	6
Number of Detects			0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.5	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
Minimum Detect			ND	ND	ND	ND	ND	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.05	<0.05	<0.05	0.08	<0.2	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.05	<0.05	<0.2	<0.05	<0.05	<0.2	<0.2	0.08	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
Maximum Detect			ND	ND	ND	ND	ND	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.25	0.064	0.025	0.025	0.025	0.027	0.03	0.025	0.025	0.025	0.027	0.025	0.025	0.03	0.03	0.03	1	0.025	0.025	0.095	0.025	0.025	0.03	0.03	0.027	0.03	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.03	0.1
Median Concentration			0.25	0.05	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	1	0.025	0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1
Standard Deviation			0	0.052	0	0	0	0.0083	0.019	0	0	0	0.0064	0	0	0.019	0.019	0.019	0	0	0	0.019	0	0	0.019	0.019	0.0083	0.019	0	0	0	0	0	0	0	0	0.019	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Field_ID	Sampled_Date-Time	Lab_Report_Number	Fenamiphos	Fenitrothion	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Phorate	Pirimphos-ethyl	Prothiofos	Ronnel	Bolstar (Sulprofos)	Merphos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.2	0.05	0.05	0.2	0.2	0.2
CRC Care (2011) Direct Contact HSL D - Comm/Ind																				
NEPM (1999) EIL - Commercial/Industrial																				
NEPM (1999) ESL - Commercial/Industrial (fine)																				
NEPM (1999) HIL D - Commercial/Industrial							50		80		2500									
NEPM (1999) HSL D Comm/Indust - Vl Clay 0 to <1 m																				
NEPM (1999) HSL D Comm/Indust - Vl Clay 1 to <2 m																				
NEPM (1999) HSL D Comm/Indust - Vl Clay 2 to <4 m																				
NEPM (1999) HSL D Comm/Indust - Vl Clay 4 m+																				
NEPM (1999) Management Limits - Commercial/Industrial (fine)																				
S3 BUND - 36	4/02/2021	771989	-	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
S3 BUND - 37	4/02/2021	771989	-	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
S3 BUND - 38	4/02/2021	771989	-	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
S3 BUND - 39	4/02/2021	771989	-	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
S3 BUND - 40	4/02/2021	771989	-	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
S3 BUND - 41	4/02/2021	771989	-	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
S3 Bund -1	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -10	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -11	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -12	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -13	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -14	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -15	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -16	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -17	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -18	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -19	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -2	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -20	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -21	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -22	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -23	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -24	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -25	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -26	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -27	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -28	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -29	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -3	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -30	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -31	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -32	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -33	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -34	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -35	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -4	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -5	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -6	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -7	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -8	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
S3 Bund -9	13/10/2020	ES2035977	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP116_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP116_1.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP116_1.5	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP116_3.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP116_4.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP117_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP117_1.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP117_2.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP117_5.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP120_0.1	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP120_1	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP120_2	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-

			Fenamiphos	Fenitrothion	Fenthion	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Phorate	Pirimphos-ethyl	Prothiofos	Ronnel	Bolstar (Sulprofos)	Merphos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.2	0.2	0.2	0.05	0.05	0.2	0.2	0.2
CRC Care (2011) Direct Contact HSL D - Comm/Ind																				
NEPM (1999) EIL - Commercial/Industrial																				
NEPM (1999) ESL - Commercial/Industrial (fine)																				
NEPM (1999) HIL D - Commercial/Industrial							50		80		2500									
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m																				
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m																				
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m																				
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+																				
NEPM (1999) Management Limits - Commercial/Industrial (fine)																				
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																		
TP120_3	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP120_4	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP120_5	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP124_0.1	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP124_1	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP124_2	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP124_3	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP33_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP33_1.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP33_2.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP33_3.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP33_4.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP64_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP66_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP67_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP67_1.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP67_2.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP8_0.1	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP8_1	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP8_2	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP8_3	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP8_4	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP8_5.5	2/07/2019	ES1921013	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP9_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP9_1.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP9_2.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP9_3.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP9_4.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP95_0.1	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP95_1.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP95_2.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
TP95_3.0	3/07/2019	ES1921141	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	-	<0.05	<0.05	-	-	-
Statistical Summary																				
Number of Results			79	6	85	85	85	85	85	85	85	85	85	85	6	79	79	6	6	6
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.05	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.025	0.1	0.03	0.025	0.025	0.025	0.025	0.03	0.1	0.1	0.16	0.1	0.1	0.025	0.025	0.1	0.1	0.1
Median Concentration			0.025	0.1	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.1	0.1	0.1	0.1	0.025	0.025	0.1	0.1	0.1
Standard Deviation			0	0	0.019	0	0	0	0	0.019	0	0	0.23	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6213	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6214	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6215	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6216	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6217	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6218	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6219	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6220	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6221	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6222	ASET85452	2/07/2020	Compliant Stockpile	--	nd
SP6222-A	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6223	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6224	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6225	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6226	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6227	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6228	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6229	ASET85452	2/07/2020	Compliant Stockpile	--	nd
S3_SP6230	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6231	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6232	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6233	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6234	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6235	ASET85551	3/07/2020	Compliant Stockpile	--	0.00050
S3_SP6236	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6237	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6238	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6239	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6240	ASET85551	3/07/2020	Compliant Stockpile	--	0.00002
S3_SP6240-A	ASET85551	3/07/2020	Compliant Stockpile	--	0.00075
S3_SP6241	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6242	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6243	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6244	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6245	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6246	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6246-A	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6247	ASET85551	3/07/2020	Compliant Stockpile	--	0.00051
S3_SP6248	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6249	ASET85551	3/07/2020	Compliant Stockpile	--	nd
S3_SP6250	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6250-A	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6250-B	SE208377	6/07/2020	Compliant Stockpile	--	nd
S3_SP6251	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6252	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6253	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6254	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6254-A	ASET85703	6/07/2020	Compliant Stockpile	--	0.00005
S3_SP6254-B	SE208377	6/07/2020	Compliant Stockpile	--	0.00005
S3_SP6255	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6256	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6257	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6258	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6259	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6260	ASET85703	6/07/2020	Compliant Stockpile	--	0.00003
S3_SP6261	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6262	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6262-A	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6262-B	SE208377	6/07/2020	Compliant Stockpile	--	nd
S3_SP6263	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6264	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6265	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6266	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6266-A	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6266-B	SE208377	6/07/2020	Compliant Stockpile	--	nd
S3_SP6267	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6268	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6269	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6270	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6271	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6272	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6273	ASET85703	6/07/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP6274	ASET85703	6/07/2020	Compliant Stockpile	--	nd
S3_SP6275	ASET85763	7/07/2020	Compliant Stockpile	--	0.00002
S3_SP6276	ASET85763	7/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00446
SP6276-FP	ASET86377	23/07/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6277	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6278	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6279	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6280	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6281	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6282	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6283	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6284	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6285	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6286	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6287	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6287-A	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6288	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6289	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6290	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6291	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6292	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6293	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6294	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6295	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6296	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6297	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6298	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6299	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6300	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6300-A	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6301	ASET85763	7/07/2020	Compliant Stockpile	--	0.00025
S3_SP6302	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6303	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6304	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6305	ASET85763	7/07/2020	Compliant Stockpile	--	nd
S3_SP6306	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6307	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6308	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6309	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6310	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6310A	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6311	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6312	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6313	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6314	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6315	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6316	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6317	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6318	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6319	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6320	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6321	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6322	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6323	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6324	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6325	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6326	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6327	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6328	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6329	ASET85795	8/07/2020	Compliant Stockpile	--	nd
S3_SP6330	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6331	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6332	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6333	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6334	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6335	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6336	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6337	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6338	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6339	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6340	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6340-A	ASET85870	9/07/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP6341	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6342	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6343	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6344	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6345	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6346	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6347	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6348	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6349	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6350	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6351	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6352	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6352-A	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6353	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6354	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6355	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6356	ASET85870	9/07/2020	Compliant Stockpile	--	nd
S3_SP6357	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6358	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6359	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6360	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6361	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6362	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6363	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6364	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6365	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6366	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6367	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6368	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6369	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6370	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6371	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6372	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6373	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6374	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6374-A	ASET85960	10/07/2020	Compliant Stockpile	--	nd
S3_SP6375	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6376	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6377	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6378	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6378-A	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6379	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6380	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6380-A	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6381	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6382	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6383	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6384	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6385	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6386	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6387	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6388	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6389	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6390	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6391	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6392	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6393	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6394	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6395	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6396	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6397	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6398	ASET85968	13/07/2020	Compliant Stockpile	--	nd
S3_SP6399	ASET86016	13/07/2020	Compliant Stockpile	--	0.00044
S3_SP6400	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6401	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6402	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6403	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6404	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6405	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6406	ASET86016	13/07/2020	Compliant Stockpile	--	nd
S3_SP6407	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6408	ASET86077	15/07/2020	Compliant Stockpile	--	0.00004

ERM		ATA Stockpile Register		0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6409	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6410	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6410-A	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6411	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6412	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6413	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6414	ASET86077	15/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00213
SP6414-FP	ASET86377	23/07/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6415	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6416	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6417	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6418	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6419	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6420	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6421	ASET86077	15/07/2020	Compliant Stockpile	--	nd
S3_SP6422	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6423	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6424	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6425	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6426	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6427	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6427-A	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6428	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6429	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6430	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6431	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6432	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6433	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6434	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6435	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6436	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6437	ASET86150	16/07/2020	Compliant Stockpile	--	0.00003
S3_SP6438	ASET86150	16/07/2020	Compliant Stockpile	--	0.00013
S3_SP6439	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6440	ASET86150	16/07/2020	Compliant Stockpile	--	0.00017
S3_SP6440-A	ASET86150	16/07/2020	Compliant Stockpile	--	0.00005
S3_SP6441	ASET86150	16/07/2020	Compliant Stockpile	--	0.00027
S3_SP6442	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6443	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6444	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6445	ASET86150	16/07/2020	Compliant Stockpile	--	nd
S3_SP6446	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6447	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6448	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6449	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6450	ASET86175	17/07/2020	Compliant Stockpile	--	0.00063
S3_SP6451	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6452	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6453	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6454	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6455	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6456	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6457	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6458	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6459	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6459-A	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6460	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6461	ASET86175	17/07/2020	Compliant Stockpile	--	0.00008
S3_SP6462	ASET86175	17/07/2020	Compliant Stockpile	--	0.00001
S3_SP6463	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6464	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6465	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6466	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6467	ASET86175	17/07/2020	Compliant Stockpile	--	0.00023
S3_SP6468	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6469	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6470	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6470-A	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6471	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6472	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6473	ASET86175	17/07/2020	Compliant Stockpile	--	nd
S3_SP6474	ASET86175	17/07/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6475	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6476	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6477	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6478	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6479	ASET86224	20/07/2020	Compliant Stockpile	--	0.00036
S3_SP6480	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6481	ASET86224	20/07/2020	Compliant Stockpile	--	0.00004
S3_SP6482	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6483	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6484	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6485	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6485-A	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6486	ASET86224	20/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00200
SP6486-FP	ASET86773	3/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6487	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6488	ASET86224	20/07/2020	Compliant Stockpile	--	0.00020
S3_SP6489	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6490	ASET86224	20/07/2020	Compliant Stockpile	--	0.00037
S3_SP6491	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6492	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6493	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6494	ASET86224	20/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00200
SP6494-FP	ASET86773	3/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6495	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6496	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6497	ASET86224	20/07/2020	Compliant Stockpile	--	0.00040
S3_SP6498	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6499	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6500	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6500-A	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6501	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6502	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6503	ASET86224	20/07/2020	Compliant Stockpile	--	nd
S3_SP6504	ASET86308	21/07/2020	Compliant Stockpile	--	0.00014
S3_SP6505	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6506	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6507	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6508	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6509	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6510	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6511	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6512	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6513	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6513-A	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6514	ASET86308	21/07/2020	Compliant Stockpile	--	0.00004
S3_SP6515	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6516	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6517	ASET86308	21/07/2020	Compliant Stockpile	--	0.00030
S3_SP6518	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6519	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6520	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6521	ASET86308	21/07/2020	Compliant Stockpile	--	0.00069
S3_SP6522	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6523	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6524	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6524-A	ASET86308	21/07/2020	Compliant Stockpile	--	nd
S3_SP6525	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6526	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6527	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6528	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6529	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6530	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6530-A	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6530-B	SE209152	23/07/2020	Compliant Stockpile	--	nd
S3_SP6531	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6532	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6533	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6534	ASET86378	23/07/2020	Compliant Stockpile	--	0.00018
S3_SP6535	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6536	ASET86378	23/07/2020	Compliant Stockpile	--	0.00005
S3_SP6537	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6538	ASET86378	23/07/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6539	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6540	ASET86378	23/07/2020	Compliant Stockpile	--	0.00004
S3_SP6540-A	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6540-B	SE209152	23/07/2020	Compliant Stockpile	--	nd
S3_SP6541	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6542	ASET86378	23/07/2020	Compliant Stockpile	--	0.00028
S3_SP6543	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6544	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6545	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6546	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6547	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6548	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6549	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6550	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6550-A	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6550-B	SE209152	23/07/2020	Compliant Stockpile	--	nd
S3_SP6551	ASET86378	23/07/2020	Compliant Stockpile	--	0.00006
S3_SP6552	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6553	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6554	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6555	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6556	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6557	ASET86378	23/07/2020	Compliant Stockpile	--	0.00005
S3_SP6558	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6559	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6560	ASET86378	23/07/2020	Compliant Stockpile	--	0.00056
S3_SP6560-A	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6560-B	SE209152	23/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00104
SP6560-FP	ASET86773	3/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6561	ASET86378	23/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00108
SP6561-FP	ASET86773	3/08/2020	AF/FA detected in footprint sample	--	0.00005
SP6561-FP	ASET86923	6/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6562	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6563	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6564	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6565	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6566	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6567	ASET86378	23/07/2020	Compliant Stockpile	--	nd
S3_SP6568	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6569	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6570	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6571	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6572	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6573	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6574	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6575	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6576	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6577	ASET86462	24/07/2020	Compliant Stockpile	--	nd
S3_SP6578	ASET86665	30/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6578-RP	--	6/08/2020	Sampling post additional remediation	--	--
S3_SP6579	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6580	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6581	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6582	ASET86665	30/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6582-RP	--	6/08/2020	Sampling post additional remediation	--	--
S3_SP6583	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6584	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6585	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6586	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6587	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6587-A	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6588	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6589	ASET86665	30/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6589-RP	--	6/08/2020	Sampling post additional remediation	--	--
S3_SP6590	ASET86665	30/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00202
SP6590-FP	ASET87145	13/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6591	ASET86665	30/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6591-RP	--	6/08/2020	Sampling post additional remediation	--	--
S3_SP6592	ASET86665	30/07/2020	Compliant Stockpile	--	0.00014
S3_SP6593	ASET86665	30/07/2020	Compliant Stockpile	--	0.00017
S3_SP6594	ASET86665	30/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6594-RP	--	6/08/2020	Sampling post additional remediation	--	--

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP6595	ASET86665	30/07/2020	Compliant Stockpile	--	0.00002
S3_SP6596	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6597	ASET86665	30/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6597-RP	--	6/08/2020	Sampling post additional remediation	--	--
S3_SP6598	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6599	ASET86665	30/07/2020	Compliant Stockpile	--	nd
S3_SP6600	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6601	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6602	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6603	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6604	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6605	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6606	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6607	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6608	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6609	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6609-A	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6610	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6611	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6612	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6613	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6614	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6615	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6616	ASET86725	31/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6616-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6617	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6618	ASET86725	31/07/2020	SP fail due to AF/FA. To be removed for storage	--	0.00202
SP6618-FP	ASET87145	13/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6619	ASET86725	31/07/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6619-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6620	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6621	ASET86725	31/07/2020	Compliant Stockpile	--	nd
S3_SP6622	ASET86774	3/08/2020	SP fail due to AF/FA. To be removed for storage	--	0.00615
SP6622-FP	ASET87145	13/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6623	ASET86774	3/08/2020	Compliant Stockpile	--	0.00014
S3_SP6624	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6625	ASET86774	3/08/2020	SP fail due to AF/FA. To be removed for storage	--	0.00161
SP6625-FP	ASET87145	13/08/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6626	ASET86774	3/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6626-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6627	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6628	ASET86774	3/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6628-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6629	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6630	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6631	ASET86774	3/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6631-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6632	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6633	ASET86774	3/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6633-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6634	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6635	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6635-A	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6636	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6637	ASET86774	3/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP6637-RP	--	13/08/2020	Sampling post additional remediation	--	--
S3_SP6638	ASET86774	3/08/2020	Compliant Stockpile	--	0.00002
S3_SP6639	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6640	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6641	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6642	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6643	ASET86774	3/08/2020	Compliant Stockpile	--	nd
S3_SP6644	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6645	ASET86867	4/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP6646	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6647	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6648	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6648-A	ASET86867	4/08/2020	Compliant Stockpile	--	0.00006
S3_SP6649	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6650	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6651	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6652	ASET86867	4/08/2020	Compliant Stockpile	--	nd

ERM		ATA Stockpile Register		0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6653	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6654	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6655	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6656	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6657	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6658	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6659	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6660	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6661	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6662	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6663	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6664	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6665	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6666	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6666-A	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6667	ASET86867	4/08/2020	Compliant Stockpile	--	nd
S3_SP6668	ASET86868	5/08/2020	Compliant Stockpile	--	nd
S3_SP6669	ASET86868	5/08/2020	Compliant Stockpile	--	nd
S3_SP6670	ASET86868	5/08/2020	Compliant Stockpile	--	nd
S3_SP6671	ASET86868	5/08/2020	Compliant Stockpile	--	nd
S3_SP6672	ASET86868	5/08/2020	Compliant Stockpile	--	nd
S3_SP6673	ASET86868	5/08/2020	Compliant Stockpile	--	nd
S3_SP6674	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6675	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6676	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6677	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6678	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6679	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6679-A	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6680	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6681	ASET86922	6/08/2020	Compliant Stockpile	--	0.00001
S3_SP6682	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6683	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6684	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6685	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6686	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6687	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6688	ASET86922	6/08/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP6689	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6690	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6691	ASET86922	6/08/2020	Compliant Stockpile	--	nd
S3_SP6692	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6693	ASET86975	7/08/2020	Compliant Stockpile	--	0.00011
S3_SP6694	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6695	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6696	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6697	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6698	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6699	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6700	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6701	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6702	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6703	ASET86975	7/08/2020	Compliant Stockpile	--	nd
S3_SP6704	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6705	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6706	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6707	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6708	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6709	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6710	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6710-A	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6711	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6712	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6713	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6714	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6715	ASET87096	12/08/2020	Compliant Stockpile	--	nd
S3_SP6716	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6717	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6718	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6719	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6720	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6721	ASET87148	13/08/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6722	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6723	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6724	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6725	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6726	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6727	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6728	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6729	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6730	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6731	ASET87148	13/08/2020	Compliant Stockpile	--	nd
S3_SP6731-A	ASET87148	13/08/2020	Compliant Stockpile	--	0.00077
S3_SP6732	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6733	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6734	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6735	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6736	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6737	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6738	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6739	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6740	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6741	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6742	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6743	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6743-A	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6744	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6745	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6746	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6747	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6748	ASET87179	14/08/2020	Compliant Stockpile	--	nd
S3_SP6749	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6750	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6751	ASET87221	17/08/2020	Compliant Stockpile	--	0.00001
S3_SP6752	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6753	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6754	ASET87221	17/08/2020	Compliant Stockpile	--	0.00004
S3_SP6755	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6756	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6757	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6758	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6759	ASET87221	17/08/2020	Compliant Stockpile	--	nd
S3_SP6760	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6760-A	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6761	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6762	ASET87325	19/08/2020	SP fail due to AF/FA. To be removed for storage	--	0.00382
S3_SP6762-FP	ASET87799	4/09/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6763	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6764	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6765	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6766	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6767	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6768	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6769	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6770	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6771	ASET87325	19/08/2020	Compliant Stockpile	--	0.00006
S3_SP6772	ASET87325	19/08/2020	Compliant Stockpile	--	0.00010
S3_SP6773	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6774	ASET87325	19/08/2020	Compliant Stockpile	--	nd
S3_SP6775	ASET87324	20/08/2020	Compliant Stockpile	--	0.00014
S3_SP6776	ASET87324	20/08/2020	Compliant Stockpile	--	0.00059
S3_SP6777	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6778	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6779	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6780	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6780-A	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6781	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6782	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6783	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6784	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6785	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6786	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6787	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6788	ASET87324	20/08/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6789	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6790	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6791	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6792	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6793	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6794	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6795	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6796	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6796-A	ASET87324	20/08/2020	Compliant Stockpile	--	nd
S3_SP6797	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6798	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6799	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6800	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6801	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6802	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6803	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6804	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6805	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6806	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6807	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6808	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6809	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6810	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6811	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6811-A	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6812	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6813	ASET87405	21/08/2020	Compliant Stockpile	--	nd
S3_SP6814	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6815	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6816	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6817	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6818	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6819	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6820	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6820-A	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6821	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6822	ASET87536	27/08/2020	Compliant Stockpile	--	0.00008
S3_SP6823	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6824	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6825	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6826	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6827	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6828	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6829	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6830	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6830-A	ASET87536	27/08/2020	Compliant Stockpile	--	0.00011
S3_SP6831	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6832	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6833	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6834	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6835	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6836	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6837	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6838	ASET87536	27/08/2020	Compliant Stockpile	--	0.00061
S3_SP6839	ASET87536	27/08/2020	Compliant Stockpile	--	0.00008
S3_SP6840	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6840-A	ASET87536	27/08/2020	Compliant Stockpile	--	0.00015
S3_SP6841	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6842	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6843	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6844	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6845	ASET87536	27/08/2020	SP fail due to AF/FA. To be removed for storage	--	0.00109
S3_SP6845-FP	ASET87799	4/09/2020	Footprint clearance/ validation post fail	--	nd
S3_SP6846	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6846-A	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6846-B	SE210513	27/08/2020	Compliant Stockpile	--	nd
S3_SP6847	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6848	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6849	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6850	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6851	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6852	ASET87536	27/08/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6853	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6854	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6854-A	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6854-B	SE210513	27/08/2020	Compliant Stockpile	--	nd
S3_SP6855	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6856	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6857	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6858	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6859	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6860	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6860-A	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6860-B	SE210513	27/08/2020	Compliant Stockpile	--	nd
S3_SP6861	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6862	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6863	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6864	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6865	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6866	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6867	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6868	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6869	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6869-A	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6869-B	SE210513	27/08/2020	Compliant Stockpile	--	nd
S3_SP6870	ASET87536	27/08/2020	Compliant Stockpile	--	0.00002
S3_SP6871	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6872	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6873	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6874	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6875	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6876	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6877	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6878	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6879	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6880	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6881	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6882	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6883	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6884	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6885	ASET87536	27/08/2020	Compliant Stockpile	--	nd
S3_SP6886	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6887	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6888	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6889	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6890	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6890-A	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6891	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6892	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6893	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6894	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6895	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6896	ASET87669	1/09/2020	Compliant Stockpile	--	nd
S3_SP6897	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6898	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6899	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6900	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6900-A	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6901	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6902	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6903	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6904	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6905	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6906	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6907	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6908	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6909	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6910	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6910-A	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6911	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6912	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6913	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6914	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6915	ASET87715	2/09/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP6916	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6917	ASET87715	2/09/2020	Compliant Stockpile	--	nd
S3_SP6918	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6919	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6920	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6920-A	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6921	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6922	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6923	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6924	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6925	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6926	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6927	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6928	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6929	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6930	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6930-A	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6931	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6932	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6933	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6934	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6935	ASET87757	3/09/2020	Compliant Stockpile	--	nd
S3_SP6936	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6937	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6938	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6939	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6940	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6941	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6942	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6943	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6944	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6945	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6946	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6947	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6948	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6949	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6950	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6951	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6952	ASET87576	28/08/2020	Compliant Stockpile	--	nd
S3_SP6953	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6953-A	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6953-B	SE210845	4/09/2020	Compliant Stockpile	--	nd
S3_SP6954	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6955	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6956	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6957	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6958	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6959	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6960	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6961	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6962	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6963	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6963-A	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6963-B	SE210845	4/09/2020	Compliant Stockpile	--	nd
S3_SP6964	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6965	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6966	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6966-A	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6966-B	SE210845	4/09/2020	Compliant Stockpile	--	nd
S3_SP6967	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6968	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6969	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6970	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6971	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6972	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6973	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6974	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6975	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6976	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6977	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6978	ASET87800	4/09/2020	Compliant Stockpile	--	nd
S3_SP6978-A	ASET87800	4/09/2020	Compliant Stockpile	--	nd

	ATA Stockpile Register			0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP6978-B	SE210845	4/09/2020	Compliant Stockpile	--	nd
S3_SP6979	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6980	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6981	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6982	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6983	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6984	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6985	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6986	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6987	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6988	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6989	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6990	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6991	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6992	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6993	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6994	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6995	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6996	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6997	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6998	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP6999	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7000	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7001	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7002	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7003	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7003-A	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7004	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7005	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7006	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7007	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7008	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7009	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7010	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7011	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7012	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7013	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7014	ASET87842	7/09/2020	Compliant Stockpile	--	nd
S3_SP7015	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7016	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7017	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7018	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7019	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7020	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7021	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7022	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7023	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7024	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7025	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7026	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7027	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7028	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7028-A	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7029	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7030	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7031	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7032	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7033	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7034	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7035	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7036	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7037	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7038	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7039	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7040	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7041	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7042	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7043	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7044	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7045	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7045-A	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7046	ASET87870	8/09/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP7047	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7048	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7049	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7050	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7051	ASET87870	8/09/2020	Compliant Stockpile	--	nd
S3_SP7052	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7053	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7054	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7055	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7056	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7057	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7058	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7059	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7060	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7061	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7062	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7063	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7064	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7065	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7066	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7067	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7068	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7069	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7069-A	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7070	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7071	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7072	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7073	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7074	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7075	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7076	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7077	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7078	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7079	ASET87958	10/09/2020	Compliant Stockpile	--	nd
S3_SP7080	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7081	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7082	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7083	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7084	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7085	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7086	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7087	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7088	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7089	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7090	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7090-A	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7091	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7092	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7093	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7094	ASET88002	11/09/2020	Compliant Stockpile	--	nd
S3_SP7095	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7096	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7097	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7098	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7099	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7100	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7101	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7102	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7103	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7104	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7105	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7106	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7107	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7108	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7109	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7109-A	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7110	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7111	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7112	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7113	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7114	ASET88043	14/09/2020	Compliant Stockpile	--	nd
S3_SP7115	ASET88043	14/09/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	Lab Report	Sample Date	Comments	%w/w Asb (ACM) in Soil	%w/w Asb (AF/FA) in Soil
S3_SP7116	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7117	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7118	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7119	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7120	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7121	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7122	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7123	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7124	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7125	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7126	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7127	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7127-A	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7128	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7129	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7130	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7131	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7132	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7133	ASET88067	15/09/2020	Compliant Stockpile	--	nd
S3_SP7134	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7135	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7136	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7137	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7138	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7139	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7140	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7141	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7142	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7143	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7144	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7145	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7146	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7147	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7148	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7149	ASET88151	17/09/2020	Compliant Stockpile	--	nd
S3_SP7150	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7150-A	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7151	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7152	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7153	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7154	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7155	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7156	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7157	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7158	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7159	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7160	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7160-A	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7161	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7162	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7163	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7164	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7165	ASET88150	18/09/2020	Compliant Stockpile	--	nd
S3_SP7166	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7167	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7168	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7169	ASET88274	21/09/2020	Compliant Stockpile	--	0.00005
S3_SP7170	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7170-A	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7171	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7172	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7173	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7174	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7175	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7176	ASET88274	21/09/2020	Compliant Stockpile	--	nd
S3_SP7177	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7178	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7179	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7180	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7180-A	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7181	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7182	ASET88275	22/09/2020	Compliant Stockpile	--	nd

ERM			ATA Stockpile Register	0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP7183	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7184	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7185	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7186	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7187	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7188	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7189	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7190	ASET88275	22/09/2020	Compliant Stockpile	--	0.00050
S3_SP7190-A	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7191	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7192	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7193	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7194	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7196	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7197	ASET88275	22/09/2020	Compliant Stockpile	--	0.00010
S3_SP7198	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7199	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7200	ASET88275	22/09/2020	Compliant Stockpile	--	nd
S3_SP7201	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7202	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7203	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7204	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7204-A	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7205	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7206	ASET88366	23/09/2020	Compliant Stockpile	--	nd
S3_SP7207	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7208	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7209	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7210	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7210-A	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7211	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7212	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7213	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7214	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7215	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7216	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7217	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7218	ASET88367	24/09/2020	Compliant Stockpile	--	0.00015
S3_SP7219	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7220	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7220-A	ASET88367	24/09/2020		--	nd
S3_SP7221	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7222	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7223	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7224	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7225	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7226	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7227	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7228	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7229	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7230	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7230-A	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7231	ASET88367	24/09/2020	Compliant Stockpile	--	0.00047
S3_SP7232	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7233	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7234	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7235	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7236	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7237	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7238	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7239	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7240	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7240-A	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7241	ASET88367	24/09/2020	Compliant Stockpile	--	nd
S3_SP7242	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7243	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7244	ASET88368	25/09/2020	Compliant Stockpile	--	0.00011
S3_SP7245	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7246	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7247	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7248	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7249	ASET88368	25/09/2020	Compliant Stockpile	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP7250	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7250-A	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7251	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7252	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7253	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7254	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7255	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7256	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7257	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7258	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7259	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7260	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7260-A	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7261	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7262	ASET88368	25/09/2020	Compliant Stockpile	--	nd
S3_SP7263	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7264	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7265	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7266	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7267	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7268	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7269	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7270	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7271	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7272	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7273	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7274	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7275	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7276	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7277	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7278	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7279	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7280	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7280-A	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7281	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7282	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7283	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7284	ASET88468	28/09/2020	Compliant Stockpile	--	nd
S3_SP7285	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7286	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7287	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7288	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7289	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7290	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7291	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7292	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7293	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7294	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7295	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7296	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7297	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7298	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7299	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7300	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7300-A	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7301	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7302	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7303	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7304	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7305	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7306	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7307	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7308	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7309	ASET88506	29/09/2020	Compliant Stockpile	--	nd
S3_SP7310	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7311	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7312	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7313	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7314	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7315	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7316	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7317	ASET88536	30/09/2020	Compliant Stockpile	--	nd

ERM			ATA Stockpile Register	0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP7318	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7319	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7320	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7321	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7322	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7322-A	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7323	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7324	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7325	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7326	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7327	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7328	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7329	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7330	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7331	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7332	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7333	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7334	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7335	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7336	ASET88536	30/09/2020	Compliant Stockpile	--	nd
S3_SP7337	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7338	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7339	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7340	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7341	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7342	ASET88609	1/10/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
SP7342-RP	--	4/11/2020	Sampling post additional remediation	--	--
S3_SP7343	ASET88609	1/10/2020	SP fail due to AF/FA. To be removed for storage	--	0.00100
S3_SP7343-FP	ASET89393	4/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7344	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7345	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7346	ASET88609	1/10/2020	Compliant Stockpile	--	nd
S3_SP7347	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7347-A	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7347-B	SE212070	7/10/2020	Compliant Stockpile	--	nd
S3_SP7348	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7349	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7350	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7351	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7352	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7352-A	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7352-B	SE212070	7/10/2020	Compliant Stockpile	--	nd
S3_SP7353	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7354	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7355	ASET88693	7/10/2020	Compliant Stockpile	--	0.00004
S3_SP7356	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7356-A	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7356-B	SE212070	7/10/2020	Compliant Stockpile	--	nd
S3_SP7357	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7358	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7359	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7359-A	ASET88693	7/10/2020	Compliant Stockpile	--	nd
S3_SP7359-B	SE212070	7/10/2020	Compliant Stockpile	--	nd
S3_SP7360	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7361	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7362	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7363	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7364	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7365	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7366	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7367	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7368	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7369	ASET88776	9/10/2020	Compliant Stockpile	--	nd
S3_SP7370	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00000
S3_SP7371	ASET89330	2/11/2020	Compliant Stockpile	--	nd
S3_SP7372	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7373	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7374	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00017
S3_SP7375	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00039
S3_SP7376	ASET89330	2/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00405
S3_SP7376-FP	ASET89764	19/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00241
S3_SP7376-FP	ASET89863	24/11/2020	Footprint clearance/ validation post fail	--	nd

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP7377	ASET89330	2/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00501
S3_SP7377-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7378	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00010
S3_SP7379	ASET89330	2/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00216
S3_SP7379-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7380	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7381	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7382	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7383	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7384	ASET89330	2/11/2020	Compliant Stockpile	--	nd
S3_SP7385	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7386	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00015
S3_SP7387	ASET89330	2/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00042
S3_SP7388	ASET89330	2/11/2020	Compliant Stockpile	--	nd
S3_SP7389	ASET89330	2/11/2020	Compliant Stockpile	--	nd
S3_SP7390	ASET89330	2/11/2020	Compliant Stockpile	--	nd
S3_SP7391	ASET89330	2/11/2020	Compliant Stockpile	--	0.00020
S3_SP7392	ASET89359	3/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00003
S3_SP7393	ASET89359	3/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00124
S3_SP7393-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7394	ASET89359	3/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	nd
S3_SP7395	ASET89359	3/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00078
S3_SP7396	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7397	ASET89359	3/11/2020	Compliant Stockpile	--	0.00009
S3_SP7397-A	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7397-B	SE213159	3/11/2020	Compliant Stockpile	--	nd
S3_SP7398	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7399	ASET89359	3/11/2020	Compliant Stockpile	--	0.00014
S3_SP7400	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7401	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7402	ASET89359	3/11/2020	Compliant Stockpile	--	0.00014
S3_SP7403	ASET89359	3/11/2020	Compliant Stockpile	--	0.00072
S3_SP7404	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7405	ASET89359	3/11/2020	Compliant Stockpile	--	0.00015
S3_SP7406	ASET89359	3/11/2020	SP fail due to AF/FA. To be removed for storage	--	0.00185
S3_SP7406-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7407	ASET89359	3/11/2020	SP fail due to AF/FA. To be removed for storage	--	0.00871
S3_SP7407-A	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7407-B	SE213159	3/11/2020	Compliant Stockpile	--	nd
S3_SP7407-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7408	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7409	ASET89359	3/11/2020	Compliant Stockpile	--	0.00007
S3_SP7409-A	ASET89359	3/11/2020	Compliant Stockpile	--	0.00013
S3_SP7409-B	SE213159	3/11/2020	Compliant Stockpile	--	nd
S3_SP7410	ASET89359	3/11/2020	Compliant Stockpile	--	0.00008
S3_SP7411	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7412	ASET89359	3/11/2020	Compliant Stockpile	--	0.00006
S3_SP7413	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7413-A	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7413-B	SE213159	3/11/2020	Compliant Stockpile	--	nd
S3_SP7414	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7415	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7416	ASET89359	3/11/2020	Compliant Stockpile	--	nd
S3_SP7417	ASET89391	4/11/2020	Compliant Stockpile	--	nd
S3_SP7418	ASET89391	4/11/2020	Compliant Stockpile	--	0.00014
S3_SP7419	ASET89391	4/11/2020	Compliant Stockpile	--	nd
S3_SP7420	ASET89391	4/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00036
S3_SP7421	ASET89391	4/11/2020	Compliant Stockpile	--	nd
S3_SP7422	ASET89391	4/11/2020	Compliant Stockpile	--	nd
S3_SP7423	ASET89391	4/11/2020	Compliant Stockpile	--	nd
S3_SP7424	ASET89391	4/11/2020	Compliant Stockpile	--	nd
S3_SP7425	ASET89521	10/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00026
S3_SP7426	ASET89521	10/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00267
S3_SP7426-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7427	ASET89521	10/11/2020	Compliant Stockpile	--	0.00006
S3_SP7428	ASET89521	10/11/2020	Compliant Stockpile	--	0.00032
S3_SP7429	ASET89521	10/11/2020	Compliant Stockpile	--	nd
S3_SP7430	ASET89521	10/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00031
S3_SP7431	ASET89521	10/11/2020	Compliant Stockpile	--	0.00009
S3_SP7432	ASET89521	10/11/2020	SP fail due to AF/FA. To be removed for storage	VF	0.00409
S3_SP7432-FP	ASET89764	19/11/2020	Footprint clearance/ validation post fail	--	nd
S3_SP7433	ASET89521	10/11/2020	Compliant Stockpile	--	0.00013

ATA Stockpile Register				0.001%	0.05%
Sample ID	**Lab Report**	**Sample Date**	**Comments**	**%w/w Asb (ACM) in Soil**	**%w/w Asb (AF/FA) in Soil**
S3_SP7434	ASET89521	10/11/2020	Compliant Stockpile	--	nd
S3_SP7435	ASET89521	10/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00089
S3_SP7436	ASET89521	10/11/2020	Compliant Stockpile	--	nd
S3_SP7437	ASET89521	10/11/2020	Stockpile failed due to ACM, needs to be repicked	VF	0.00013
S3_SP7438	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7439	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7440	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7441	ASET89805	20/11/2020	Compliant Stockpile	--	0.00001
S3_SP7442	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7443	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7444	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7445	ASET89805	20/11/2020	Compliant Stockpile	--	nd
S3_SP7446	ASET89825	23/11/2020	Compliant Stockpile	--	nd
S3_SP7447	ASET89825	23/11/2020	Compliant Stockpile	--	nd
S3_SP7448	ASET89825	23/11/2020	Compliant Stockpile	--	nd
S3_SP7449	ASET89825	23/11/2020	Compliant Stockpile	--	nd
S3_SP7450	ASET89825	23/11/2020	Compliant Stockpile	--	nd
S3_SP7451	ASET89861	24/11/2020	Compliant Stockpile	--	nd
S3_SP7452	ASET89861	24/11/2020	Compliant Stockpile	--	nd
S3_SP7453	ASET89861	24/11/2020	Compliant Stockpile	--	nd
S3_SP7454	ASET89861	24/11/2020	Compliant Stockpile	--	nd
S3_SP7455	ASET89861	24/11/2020	Compliant Stockpile	--	nd
S3_SP7456	ASET89861	24/11/2020	Compliant Stockpile	--	nd
S3_SP7457	ASET89932	25/11/2020	Compliant Stockpile	--	nd
S3_SP7458	ASET89932	25/11/2020	Compliant Stockpile	--	0.00005
S3_SP7459	ASET89932	25/11/2020	Compliant Stockpile	--	nd
S3_SP7460	ASET89932	25/11/2020	Compliant Stockpile	--	<0.00001
S3_SP7461	ASET89932	25/11/2020	Compliant Stockpile	--	<0.00001
S3_SP7462	ASET89933	26/11/2020	Compliant Stockpile	--	nd
S3_SP7463	ASET89933	26/11/2020	Compliant Stockpile	--	nd
S3_SP7464	ASET89933	26/11/2020	Compliant Stockpile	--	nd
S3_SP7465	ASET89996	30/11/2020	Compliant Stockpile	--	nd
S3_SP7466	ASET89996	30/11/2020	Compliant Stockpile	--	nd
S3_SP7467	ASET89996	30/11/2020	Compliant Stockpile	--	0.00001
S3_SP7468	ASET89996	30/11/2020	Compliant Stockpile	--	nd
S3_SP7469	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7470	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7471	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7472	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7473	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7474	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7475	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7476	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7477	ASET90100	4/12/2020	Compliant Stockpile	--	nd
S3_SP7478	ASET90170	10/12/2020	Compliant Stockpile	--	nd
S3_SP7479	ASET90170	10/12/2020	Compliant Stockpile	--	nd
S3_SP7480	ASET90170	10/12/2020	Compliant Stockpile	--	nd

Legend

Compliant Stockpile	Compliant detection of AF/FA in sample
Compliant Stockpile	No detection of AF/FA in sample

			ES_EPA8100	Moisture Content		NA					Naphthalene	PAH/Phenols (SIM)																	PAHs in Soil		TRH - Semivolatile Fraction									TRH Volatiles/BTEX						Me			
			Total PAH (18)	Moisture	Moisture Content	Toluene	Benzene	Benzo(a)pyrene	Ethylbenzene	Sum of Xylenes	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Benz(a)anthracene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ (zero)	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Benzo(b,j+k)fluoranthene	Total +ve PAHs	>C10 - C16 Fraction	>C10 - C16 Fraction minus Naphthalene (F2)	>C10 - C40 Fraction (sum)	>C16 - C34 Fraction	>C34 - C40 Fraction	C10 - C14 Fraction	C10 - C36 Fraction (sum)	C15 - C28 Fraction	C29 - C36 Fraction	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	C6 - C9 Fraction	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Arsenic	Cadmium	Chromium	Copper
			mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	1	0.5	0.2	0.05	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.2	0.05	50	50	50	100	100	50	50	100	100	10	10	10	0.5	0.5	0.2	4	0.4	1	1
CRC Care (2011) Direct Contact HSL D - Comm/Ind						99000	430		27000	81000	11000																																						
NEPM (1999) EIL - Commercial/Industrial											370																																			160		680	290
NEPM (1999) ESL - Commercial/Industrial (fine)						135	95	1.4	185	95																																							
NEPM (1999) HIL D - Commercial/Industrial																		40												4000																3000	900	3600	240000
NEPM (1999) HSL D Comm/Indust - Vl Clay 0 to <1 m						NL	4		NL	NL	NL																					NL									310								
NEPM (1999) HSL D Comm/Indust - Vl Clay 1 to <2 m						NL	6		NL	NL	NL																					NL									480								
NEPM (1999) HSL D Comm/Indust - Vl Clay 2 to <4 m						NL	9		NL	NL	NL																					NL									NL								
NEPM (1999) HSL D Comm/Indust - Vl Clay 4 m+						NL	NL		NL	NL	NL																					NL									NL								
NEPM (1999) Management Limits - Commercial/Industrial (fine)																															1000			5000	10000					800									
Field_ID	Sampled_Date-Time	Lab_Report_Number																																															
09SP-1	29/11/2019	232014	-	9.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	9	<0.4	16	23
09SP-10	29/11/2019	232014	-	5.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	15	26
09SP-11	14/01/2020	234535	-	8.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	13	27
09SP-12	14/01/2020	234535	-	2.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.2	0.1	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	13	32
09SP-13	14/01/2020	234535	-	8.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.2	<0.5	<0.5	<0.5	-	<0.1	-	0.2	<0.1	<0.1	0.3	0.3	<0.2	1.2	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	13	25
09SP-14	14/01/2020	234535	-	2.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	12	30
09SP-15	14/01/2020	234535	-	4.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.2	0.1	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	13	35
09SP-2	29/11/2019	232014	-	6.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	10	<0.4	17	31
09SP-3	29/11/2019	232014	-	4.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	14	28
09SP-4	29/11/2019	232014	-	3.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	9	<0.4	14	35
09SP-5	29/11/2019	232014	-	6.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	9	<0.4	16	35
09SP-6	29/11/2019	232014	-	7	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	15	25
09SP-7	29/11/2019	232014	-	5.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	16	27
09SP-8	29/11/2019	232014	-	11	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	15	24
09SP-9	29/11/2019	232014	-	11	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	15	26
CAS 34	3/09/2020	ES2031329	<0.5	-	4.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	7	41
CAS 35	3/09/2020	ES2031329	<0.5	-	4.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	8	<1	6	49
CAS 36	3/09/2020	ES2031329	<0.5	-	5.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	10	51
CAS-1	17/08/2020	ES2028861	<0.5	-	7.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	9	<1	5	41
CAS-10	18/08/2020	ES2029153	<0.5	-	9.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	9	<1	6	43
CAS-11	18/08/2020	ES2029153	<0.5	-	12.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	8	<1	6	51
CAS-12	18/08/2020	ES2029153	<0.5	-	10	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	44
CAS-13	18/08/2020	ES2029153	<0.5	-	13.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	48
CAS-14	18/08/2020	ES2029153	<0.5	-	13.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	5	44
CAS-15	18/08/2020	ES2029153	<0.5	-	13	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	8	<1	8	53
CAS-16	18/08/2020	ES2029153	<0.5	-	12.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	7	46
CAS-17	18/08/2020	ES2029153	<0.5	-	8.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	5	44
CAS-18	18/08/2020	ES2029153	<0.5	-	14.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	5	42
CAS-19	18/08/2020	ES2029153	<0.5	-	13.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	49
CAS-2	17/08/2020	ES2028861	<0.5	-	11.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	5	40
CAS-20	18/08/2020	ES2029153	<0.5	-	12.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	7	49
CAS-21	18/08/2020	ES2029153	<0.5	-	8.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	9	<1	6	47
CAS-22	18/08/2020	ES2029153	<0.5	-	8.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	46
CAS-23	18/08/2020	ES2029153	<0.5	-	11.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	48
CAS-24	18/08/2020	ES2029153	<0.5	-	13.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	10	<1	6	50
CAS-25	18/08/2020	ES2029153	<0.5	-	8.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	9	28
CAS-26	18/08/2020	ES2029153	<0.5	-	12	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	5	<1	6	49
CAS-27	18/08/2020	ES2029153	<0.5	-	13.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	49
CAS-28	18/08/2020	ES2029153	<0.5	-	13.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	6	47
CAS-29	18/08/2020	ES2029153	<0.5	-	12.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	5	43
CAS-3	17/08/2020	ES2028861	<0.5	-	10.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	6	47
CAS-30	18/08/2020	ES2029153	<0.5	-	9.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	6	43
CAS-31	18/08/2020	ES2029153	<0.5	-	9.3	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	6	47
CAS-32	18/08/2020	ES2029153	<0.5	-	12.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	48
CAS-33	18/08/2020	ES2029153	<0.5	-	10.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	43
CAS-4	17/08/2020	ES2028861	<0.5	-	13	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	8	<1	5	46
CAS-5	17/08/2020	ES2028861	<0.5	-	12.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	5	43
CAS-6	17/08/2020	ES2028861	<0.5	-	10	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	5	<1	5	47
CAS-7	17/08/2020	ES2028861	<0.5	-	10.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	5	54
CAS-8	17/08/2020	ES2028861	<0.5	-	12.4	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	6	45
CAS-9	17/08/2020	ES2028861	<0.5	-	10.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	5	<1	6	43
GASP-1	17/06/2019	219831	-	10	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	13	<0.4	19	33
GASP-10	17/06/2019	219831	-	7.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	12	<0.4	15	37
GASP-2	17/06/2019	219831	-	8.5	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	13	<0.4	16	35
GASP-3	17/06/2019	219831	-	10	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	14	<0.4	15	35
GASP-4	17/06/2019	219831	-	11	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	12	<0.4	15	31
GASP-5	17/06/2019	219831	-	12	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	12	<0.4	12	28
GASP-6	17/06/2019	219831	-	12	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	14	<0.4	16	32
GASP-7	17/06/2019	219831	-	7.7	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	12	<0.4	14	30
GASP-8	17/06/2019	219831	-	7.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	13	<0.4	15	34
GASP-9	17/06/2019	219831	-	10	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	13	<0.4	17	33
KG 12	3/09/2020	ES2031329	<0.5	-	11.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	7	<1	11	26
KG 13	3/09/2020	ES2031329	<0.5	-	17	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	7	19
KG 14	3/09/2020	ES2031329	<0.5	-	15.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	15	17
KG 15	3/09/2020	ES2031329	<0.5	-	22	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	9	<1	16	21

			ES_EPA8100	oisture Conte		NA					Naphthalene	PAH/Phenols (SIM)																	PAHs in Soil		TRH - Semivolatile Fraction									TRH Volatiles/BTEX						Me			
			Total PAH (18)	Moisture	Moisture Content	Toluene	Benzene	Benzo(a)pyrene	Ethylbenzene	Sum of Xylenes	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Benz(a)anthracene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ (zero)	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Benzo(b,j+k)fluoranthene	Total +ve PAHs	>C10 - C16 Fraction	>C10 - C16 Fraction minus Naphthalene (F2)	>C10 - C40 Fraction (sum)	>C16 - C34 Fraction	>C34 - C40 Fraction	C10 - C14 Fraction	C10 - C36 Fraction (sum)	C15 - C28 Fraction	C29 - C36 Fraction	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	C6 - C9 Fraction	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Arsenic	Cadmium	Chromium	Copper
			mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	1	0.5	0.2	0.05	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.2	0.05	50	50	50	100	100	50	50	100	100	10	10	10	0.5	0.5	0.2	4	0.4	1	1
CRC Care (2011) Direct Contact HSL D - Comm/Ind						99000	430		27000	81000	11000																																						
NEPM (1999) EIL - Commercial/Industrial											370																																			160		680	290
NEPM (1999) ESL - Commercial/Industrial (fine)						135	95	1.4	185	95																																							
NEPM (1999) HIL D - Commercial/Industrial																		40												4000																3000	900	3600	240000
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m						NL	4		NL	NL	NL																					NL									310								
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m						NL	6		NL	NL	NL																					NL									480								
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m						NL	9		NL	NL	NL																					NL									NL								
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+						NL	NL		NL	NL	NL																					NL									NL								
NEPM (1999) Management Limits - Commercial/Industrial (fine)																															1000			5000	10000					800									
Field_ID	Sampled_Date-Time	Lab_Report_Number																																															
KG-1	17/08/2020	ES2028861	<0.5	-	14	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	5	16
KG-10	17/08/2020	ES2028861	<0.5	-	19.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	5	15
KG-11	17/08/2020	ES2028861	<0.5	-	17.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	6	16
KG-2	17/08/2020	ES2028861	<0.5	-	15.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	5	<1	6	22
KG-3	17/08/2020	ES2028861	<0.5	-	20.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	5	<1	5	19
KG-4	17/08/2020	ES2028861	<0.5	-	20.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	5	17
KG-5	17/08/2020	ES2028861	<0.5	-	19.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	5	16
KG-6	17/08/2020	ES2028861	<0.5	-	19.6	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	6	17
KG-7	17/08/2020	ES2028861	<0.5	-	18.7	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	5	<1	6	20
KG-8	17/08/2020	ES2028861	<0.5	-	19.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<5	<1	6	17
KG-9	17/08/2020	ES2028861	<0.5	-	18	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	8	18
LC - 5	3/09/2020	ES2031329	<0.5	-	4.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	32	<5
LC-1	17/08/2020	ES2028861	<0.5	-	19	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	13	10
LC-2	17/08/2020	ES2028861	<0.5	-	20.9	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	9	25
LC-3	17/08/2020	ES2028861	<0.5	-	21.8	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	22	11
LC-4	17/08/2020	ES2028861	<0.5	-	18.1	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	6	<1	12	8
NIOSP-1	19/12/2019	233583	-	3.3	-	<0.5	<0.2	0.09	<1	<3	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	0.2	0.3	0.73	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	22	23
NIOSP-10	19/12/2019	233583	-	2.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	21	22
NIOSP-11	19/12/2019	233583	-	2.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	21	18
NIOSP-12	19/12/2019	233583	-	2.7	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	21	20
NIOSP-13	19/12/2019	233583	-	3.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	21	22
NIOSP-14	19/12/2019	233583	-	3.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	25	21
NIOSP-15	19/12/2019	233583	-	3	-	<0.5	<0.2	0.07	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	0.07	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	21	22
NIOSP-16	19/12/2019	233583	-	4.1	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	20	20
NIOSP-17	19/12/2019	233583	-	1.1	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	20	18
NIOSP-18	19/12/2019	233583	-	3.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	21	18
NIOSP-19	19/12/2019	233583	-	3.1	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	22	20
NIOSP-2	19/12/2019	233583	-	2.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	24	24
NIOSP-20	19/12/2019	233583	-	3	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	23	21
NIOSP-3	19/12/2019	233583	-	2.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	24	23
NIOSP-4	19/12/2019	233583	-	3.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	9	<0.4	21	23
NIOSP-5	19/12/2019	233583	-	4.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	23	22
NIOSP-6	19/12/2019	233583	-	1.5	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	24	22
NIOSP-7	19/12/2019	233583	-	2.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	23	22
NIOSP-8	19/12/2019	233583	-	2.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	21	20
NIOSP-9	19/12/2019	233583	-	3.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	22	22
TP_P11_1.0	22/10/2019	229077	-	12	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	21	15
TP_P11_2.0	22/10/2019	229077	-	7.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	12	29
TP_P11_3.0	22/10/2019	229077	-	8.1	-	<0.5	<0.2	0.4	<1	<3	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.3	0.5	0.6	<0.5	-	0.2	-	0.3	<0.1	0.2	0.1	0.3	0.6	2.5	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	5	<0.4	11	30
TP_P11_4.0	22/10/2019	229077	-	7.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	13	26
TP_P11_5.0	22/10/2019	229077	-	11	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	9	<0.4	13	25
TS-1	13/11/2019	230803	-	6.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	29	28
TS-10	13/11/2019	230803	-	8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	31	29
TS-11	13/11/2019	230803	-	6.7	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	27	28
TS-12	13/11/2019	230803	-	8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	27	30
TS-13	13/11/2019	230803	-	5.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	26	28
TS-14	13/11/2019	230803	-	6.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	31	28
TS-15	13/11/2019	230803	-	9.5	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	28	31
TS-16	13/11/2019	230803	-	8.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	29	29
TS-17	13/11/2019	230803	-	8.1	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	23	32
TS-18	13/11/2019	230803	-	7.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	30	30
TS-19	13/11/2019	230803	-	2.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	31	25
TS-2	13/11/2019	230803	-	8.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	26	29
TS-20	13/11/2019	230803	-	9.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	24	30
TS-3	13/11/2019	230803	-	8.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	28	29
TS-4	13/11/2019	230803	-	7.2	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	25	32
TS-5	13/11/2019	230803	-	8.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	27	30
TS-6	13/11/2019	230803	-	9.6	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	26	27
TS-7	13/11/2019	230803	-	9.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	26	33
TS-8	13/11/2019	230803	-	8.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	28	26
TS-9	13/11/2019	230803	-	8.9	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	24	30
UFEBP10_B1	18/10/2019	228806	-	6.5	-	<0.5	<0.2	0.2	<1	<3	<0.1	<0.1	<0.1	0.1	0.1	<0.1	0.1	<0.5	<0.5	<0.5	-	0.2	-	0.1	<0.1	0.1	0.1	0.2	<0.2	1.3	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	5	<0.4	18	32
UFEBP10_B10	18/10/2019	228806	-	7.5	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	15	18
UFEBP10_B11	18/10/2019	228806	-	7.5	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	<4	<0.4	8	15
UFEBP10_B12	18/10/2019	228806	-	25	-	<0.5	<0.2	<0.05	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	13	16

			ES_EPA8100	Moisture Content		NA					Naphthalene
			Total PAH (18)	Moisture	Moisture Content	Toluene	Benzene	Benzo(a)pyrene	Ethylbenzene	Sum of Xylenes	Naphthalene
			mg/kg	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	1	0.5	0.2	0.05	0.5	0.5	0.1
CRC Care (2011) Direct Contact HSL D - Comm/Ind						99000	430		27000	81000	11000
NEPM (1999) EIL - Commercial/Industrial											370
NEPM (1999) ESL - Commercial/Industrial (fine)						135	95	1.4	185	95	
NEPM (1999) HIL D - Commercial/Industrial											
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m						NL	4		NL	NL	NL
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m						NL	6		NL	NL	NL
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m						NL	9		NL	NL	NL
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+						NL	NL		NL	NL	NL
NEPM (1999) Management Limits - Commercial/Industrial (fine)											
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**									
UFEBP10_B13	18/10/2019	228806	-	8	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B14	18/10/2019	228806	-	9.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B15	18/10/2019	228806	-	7.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B16	18/10/2019	228806	-	5.1	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B2	18/10/2019	228806	-	4.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B3	18/10/2019	228806	-	9.7	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B4	18/10/2019	228806	-	11	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B5	18/10/2019	228806	-	8.1	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B6	18/10/2019	228806	-	16	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B7	18/10/2019	228806	-	6.8	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B8	18/10/2019	228806	-	10	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_B9	18/10/2019	228806	-	13	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N1_1.0	18/10/2019	228806	-	16	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N2_1.0	18/10/2019	228806	-	8.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N2_2.0	18/10/2019	228806	-	21	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N2_3.0	18/10/2019	228806	-	19	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N3_1.0	18/10/2019	228806	-	30	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N3_2.0	18/10/2019	228806	-	17	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N3_3.0	18/10/2019	228806	-	2.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_N4_1.0	18/10/2019	228806	-	13	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_S1_1.0	18/10/2019	228806	-	14	-	<0.5	<0.2	2.7	<1	<3	<0.1
UFEBP10_S2_1.0	18/10/2019	228806	-	21	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_S2_2.0	18/10/2019	228806	-	12	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_S3_1.0	18/10/2019	228806	-	8.4	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_S3_2.0	18/10/2019	228806	-	21	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_S4_1.0	18/10/2019	228806	-	7.3	-	<0.5	<0.2	<0.05	<1	<3	<0.1
UFEBP10_S4_2.0	18/10/2019	228806	-	8.7	-	<0.5	<0.2	<0.05	<1	<3	<0.1
Statistical Summary											
Number of Results			56	101	56	157	157	157	157	157	157
Number of Detects			0	101	56	0	0	5	0	0	0
Minimum Concentration			<0.5	1.1	4.2	<0.5	<0.2	<0.05	<0.5	<0.5	<0.1
Minimum Detect			ND	1.1	4.2	ND	ND	0.07	ND	ND	ND
Maximum Concentration			<0.5	30	22	<0.5	<0.2	2.7	<1	<3	<0.5
Maximum Detect			ND	30	22	ND	ND	2.7	ND	ND	ND
Average Concentration			0.25	8.2	13	0.25	0.1	0.13	0.41	1.1	0.12
Median Concentration			0.25	7.9	12.8	0.25	0.1	0.025	0.5	1.5	0.05
Standard Deviation			0	5.1	4.6	0	0	0.23	0.12	0.6	0.096
Number of Guideline Exceedances			0	0	0	0	0	1	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	1	0	0	0

	PAH/Phenols (SIM)																	PAHs in Soil	
	Acenaphthene	Acenaphthylene	Anthracene	Fluoranthene	Fluorene	Benz(a)anthracene	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ (zero)	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene	Benzo(b,j+k)fluoranthene	Total +ve PAHs
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.2	0.05
CRC Care (2011) Direct Contact HSL D - Comm/Ind																			
NEPM (1999) EIL - Commercial/Industrial																			
NEPM (1999) ESL - Commercial/Industrial (fine)																			
NEPM (1999) HIL D - Commercial/Industrial							40												4000
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m																			
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m																			
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m																			
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+																			
NEPM (1999) Management Limits - Commercial/Industrial (fine)																			
Field_ID																			
UFEBP10_B13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_B9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_N1_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.2	0.1
UFEBP10_N2_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.2	0.1
UFEBP10_N2_2.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_N2_3.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_N3_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_N3_2.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_N3_3.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_N4_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_S1_1.0	<0.1	0.2	0.3	2.9	<0.1	2.6	3.5	3.5	3.5	-	1.5	-	2.3	0.3	1.1	0.7	3.4	2	20
UFEBP10_S2_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.2	0.2
UFEBP10_S2_2.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_S3_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_S3_2.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	0.1	<0.1	<0.2	0.1
UFEBP10_S4_1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
UFEBP10_S4_2.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
Statistical Summary																			
Number of Results	157	157	157	157	157	157	157	157	157	56	157	56	157	157	157	157	157	101	101
Number of Detects	0	1	2	5	0	5	58	58	1	0	3	0	4	1	3	10	5	3	12
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05
Minimum Detect	ND	0.2	0.1	0.1	ND	0.1	0.5	0.6	3.5	ND	0.2	ND	0.1	0.3	0.1	0.1	0.2	0.3	0.07
Maximum Concentration	<0.5	<0.5	<0.5	2.9	<0.5	2.6	3.5	3.5	3.5	<0.5	1.5	<0.5	2.3	<0.5	1.1	0.7	3.4	2	20
Maximum Detect	ND	0.2	0.3	2.9	ND	2.6	3.5	3.5	3.5	ND	1.5	ND	2.3	0.3	1.1	0.7	3.4	2	20
Average Concentration	0.12	0.12	0.12	0.14	0.12	0.14	0.4	0.61	0.27	0.25	0.13	0.25	0.14	0.12	0.13	0.13	0.15	0.13	0.28
Median Concentration	0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.25	0.25	0.25	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.1	0.025
Standard Deviation	0.096	0.096	0.097	0.24	0.096	0.22	0.3	0.51	0.26	0	0.15	0	0.2	0.097	0.12	0.11	0.28	0.2	2
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	TRH - Semivolatile Fraction									TRH Volatiles/BTEX						Me			
	>C10 - C16 Fraction	>C10 - C16 Fraction minus Naphthalene (F2)	>C10 - C40 Fraction (sum)	>C16 - C34 Fraction	>C34 - C40 Fraction	C10 - C14 Fraction	C10 - C36 Fraction (sum)	C15 - C28 Fraction	C29 - C36 Fraction	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	C6 - C9 Fraction	meta- & para-Xylene	ortho-Xylene	Sum of BTEX	Arsenic	Cadmium	Chromium	Copper
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	50	50	50	100	100	50	50	100	100	10	10	10	0.5	0.5	0.2	4	0.4	1	1
CRC Care (2011) Direct Contact HSL D - Comm/Ind																			
NEPM (1999) EIL - Commercial/Industrial																160		680	290
NEPM (1999) ESL - Commercial/Industrial (fine)																			
NEPM (1999) HIL D - Commercial/Industrial																3000	900	3600	240000
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m		NL									310								
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m		NL									480								
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m		NL									NL								
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+		NL									NL								
NEPM (1999) Management Limits - Commercial/Industrial (fine)	1000			5000	10000					800									
Field_ID																			
UFEBP10_B13	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	4	<0.4	11	14
UFEBP10_B14	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	<4	<0.4	8	11
UFEBP10_B15	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	10	19
UFEBP10_B16	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	<4	<0.4	8	21
UFEBP10_B2	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	7	12
UFEBP10_B3	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	11	21
UFEBP10_B4	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	9	20
UFEBP10_B5	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	5	<0.4	9	19
UFEBP10_B6	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	9	<0.4	8	19
UFEBP10_B7	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	10	23
UFEBP10_B8	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	14	20
UFEBP10_B9	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	12	21
UFEBP10_N1_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	10	37
UFEBP10_N2_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	11	37
UFEBP10_N2_2.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	4	<0.4	10	39
UFEBP10_N2_3.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	<4	<0.4	8	10
UFEBP10_N3_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	4	<0.4	11	23
UFEBP10_N3_2.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	<4	<0.4	6	24
UFEBP10_N3_3.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	10	24
UFEBP10_N4_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	10	27
UFEBP10_S1_1.0	<50	<50	120	120	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	6	<0.4	17	32
UFEBP10_S2_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	8	<0.4	13	39
UFEBP10_S2_2.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	4	<0.4	11	20
UFEBP10_S3_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	13	32
UFEBP10_S3_2.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	4	<0.4	11	42
UFEBP10_S4_1.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	7	<0.4	15	24
UFEBP10_S4_2.0	<50	<50	<50	<100	<100	<50	-	<100	<100	<25	<25	<25	<2	<1	-	<4	<0.4	11	35
Statistical Summary																			
Number of Results	157	157	157	157	157	157	56	157	157	157	157	157	157	157	56	157	157	157	157
Number of Detects	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	142	0	157	156
Minimum Concentration	<50	<50	<50	<100	<100	<50	<50	<100	<100	<10	<10	<10	<0.5	<0.5	<0.2	<4	<0.4	5	<5
Minimum Detect	ND	ND	120	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	ND	5	8
Maximum Concentration	<50	<50	120	120	<100	<50	<50	<100	<100	<25	<25	<25	<2	<1	<0.2	14	<1	32	54
Maximum Detect	ND	ND	120	120	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14	ND	32	54
Average Concentration	25	25	26	50	50	25	25	50	50	9.8	9.8	9.8	0.73	0.41	0.1	6.9	0.31	14	29
Median Concentration	25	25	25	50	50	25	25	50	50	12.5	12.5	12.5	1	0.5	0.1	7	0.2	13	28
Standard Deviation	0	0	7.6	5.6	0	0	0	0	0	3.6	3.6	3.6	0.36	0.12	0	2.4	0.14	7.7	11
Number of Guideline Exceedances	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			tals				PCBs								Pesticides																																	
			Lead	Mercury	Nickel	Zinc	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenitrothion	Fenthion
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																																	
NEPM (1999) EIL - Commercial/Industrial			1800		300	690																									640																		
NEPM (1999) ESL - Commercial/Industrial (fine)																																																	
NEPM (1999) HIL D - Commercial/Industrial			1500	730	6000	400000								7				45					530				2000					3600						2000				100							
NEPM (1999) HSL D Comm/Indust - Vl Clay 0 to <1 m																																																	
NEPM (1999) HSL D Comm/Indust - Vl Clay 1 to <2 m																																																	
NEPM (1999) HSL D Comm/Indust - Vl Clay 2 to <4 m																																																	
NEPM (1999) HSL D Comm/Indust - Vl Clay 4 m+																																																	
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																																	
Field_ID	Sampled_Date-Time	Lab_Report_Number																																															
09SP-1	29/11/2019	232014	17	<0.1	13	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-10	29/11/2019	232014	15	<0.1	13	46	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-11	14/01/2020	234535	15	<0.1	15	55	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-12	14/01/2020	234535	14	<0.1	16	57	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-13	14/01/2020	234535	11	<0.1	15	49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-14	14/01/2020	234535	13	<0.1	15	56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-15	14/01/2020	234535	15	<0.1	18	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-2	29/11/2019	232014	15	<0.1	19	59	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-3	29/11/2019	232014	13	<0.1	16	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-4	29/11/2019	232014	13	<0.1	19	56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-5	29/11/2019	232014	16	<0.1	20	63	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-6	29/11/2019	232014	18	<0.1	14	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-7	29/11/2019	232014	15	<0.1	14	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-8	29/11/2019	232014	15	<0.1	12	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
09SP-9	29/11/2019	232014	16	<0.1	13	46	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
CAS 34	3/09/2020	ES2031329	17	<0.1	22	72	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS 35	3/09/2020	ES2031329	18	<0.1	30	96	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS 36	3/09/2020	ES2031329	17	<0.1	38	147	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-1	17/08/2020	ES2028861	15	<0.1	18	68	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-10	18/08/2020	ES2029153	18	<0.1	23	67	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-11	18/08/2020	ES2029153	17	<0.1	25	78	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-12	18/08/2020	ES2029153	16	<0.1	22	65	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-13	18/08/2020	ES2029153	18	<0.1	23	72	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-14	18/08/2020	ES2029153	16	<0.1	22	64	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-15	18/08/2020	ES2029153	18	<0.1	30	98	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-16	18/08/2020	ES2029153	16	<0.1	30	83	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-17	18/08/2020	ES2029153	15	<0.1	21	63	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-18	18/08/2020	ES2029153	16	<0.1	21	62	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-19	18/08/2020	ES2029153	17	<0.1	24	71	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-2	17/08/2020	ES2028861	15	<0.1	15	52	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-20	18/08/2020	ES2029153	17	<0.1	25	67	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-21	18/08/2020	ES2029153	18	<0.1	21	69	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-22	18/08/2020	ES2029153	16	<0.1	23	75	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-23	18/08/2020	ES2029153	17	<0.1	24	73	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-24	18/08/2020	ES2029153	18	<0.1	25	75	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-25	18/08/2020	ES2029153	19	<0.1	16	48	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-26	18/08/2020	ES2029153	14	<0.1	19	58	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-27	18/08/2020	ES2029153	18	<0.1	26	85	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-28	18/08/2020	ES2029153	16	<0.1	23	69	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-29	18/08/2020	ES2029153	15	<0.1	20	61	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-3	17/08/2020	ES2028861	17	<0.1	23	92	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-30	18/08/2020	ES2029153	17	<0.1	22	60	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-31	18/08/2020	ES2029153	21	<0.1	24	69	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-32	18/08/2020	ES2029153	16	<0.1	24	70	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-33	18/08/2020	ES2029153	15	<0.1	24	72	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-4	17/08/2020	ES2028861	18	<0.1	17	64	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-5	17/08/2020	ES2028861	17	<0.1	17	64	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-6	17/08/2020	ES2028861	16	<0.1	23	76	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-7	17/08/2020	ES2028861	15	<0.1	18	60	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-8	17/08/2020	ES2028861	16	<0.1	18	66	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
CAS-9	17/08/2020	ES2028861	15	<0.1	17	65	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
GASP-1	17/06/2019	219831	14	<0.1	22	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-10	17/06/2019	219831	13	0.1	21	66	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-2	17/06/2019	219831	14	<0.1	21	64	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-3	17/06/2019	219831	12	<0.1	20	61	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-4	17/06/2019	219831	15	<0.1	19	64	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-5	17/06/2019	219831	10	<0.1	15	46	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-6	17/06/2019	219831	15	<0.1	21	66	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-7	17/06/2019	219831	12	<0.1	18	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-8	17/06/2019	219831	14	<0.1	20	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
GASP-9	17/06/2019	219831	13	<0.1	21	61	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
KG 12	3/09/2020	ES2031329	16	<0.1	8	35	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG 13	3/09/2020	ES2031329	12	<0.1	5	24	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG 14	3/09/2020	ES2031329	14	<0.1	6	26	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG 15	3/09/2020	ES2031329	18	<0.1	7	37	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05

			tals				PCBs								Pesticides																																	
Field_ID	Sampled_Date-Time	Lab_Report_Number	Lead	Mercury	Nickel	Zinc	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenitrothion	Fenthion
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																																
NEPM (1999) EIL - Commercial/Industrial			1800		300	690																									640																	
NEPM (1999) ESL - Commercial/Industrial (fine)																																																
NEPM (1999) HIL D - Commercial/Industrial			1500	730	6000	400000								7				45					530				2000					3600						2000				100						
NEPM (1999) HSL D Comm/Indust - Vl Clay 0 to <1 m																																																
NEPM (1999) HSL D Comm/Indust - Vl Clay 1 to <2 m																																																
NEPM (1999) HSL D Comm/Indust - Vl Clay 2 to <4 m																																																
NEPM (1999) HSL D Comm/Indust - Vl Clay 4 m+																																																
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																																
KG-1	17/08/2020	ES2028861	13	<0.1	4	17	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-10	17/08/2020	ES2028861	10	<0.1	4	16	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-11	17/08/2020	ES2028861	11	<0.1	5	18	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-2	17/08/2020	ES2028861	12	<0.1	7	26	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-3	17/08/2020	ES2028861	10	<0.1	5	22	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-4	17/08/2020	ES2028861	11	<0.1	5	18	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-5	17/08/2020	ES2028861	11	<0.1	4	16	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-6	17/08/2020	ES2028861	10	<0.1	4	18	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-7	17/08/2020	ES2028861	11	<0.1	6	22	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-8	17/08/2020	ES2028861	11	<0.1	5	20	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
KG-9	17/08/2020	ES2028861	14	<0.1	6	23	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
LC - 5	3/09/2020	ES2031329	17	<0.1	7	<5	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
LC-1	17/08/2020	ES2028861	16	<0.1	4	11	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
LC-2	17/08/2020	ES2028861	19	<0.1	7	33	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
LC-3	17/08/2020	ES2028861	17	<0.1	9	7	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
LC-4	17/08/2020	ES2028861	14	<0.1	3	6	-	-	-	-	-	-	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05
NIOSP-1	19/12/2019	233583	23	<0.1	19	45	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-10	19/12/2019	233583	20	<0.1	14	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-11	19/12/2019	233583	19	<0.1	12	39	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-12	19/12/2019	233583	21	<0.1	14	40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-13	19/12/2019	233583	21	<0.1	15	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-14	19/12/2019	233583	22	<0.1	14	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-15	19/12/2019	233583	20	<0.1	12	40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-16	19/12/2019	233583	21	<0.1	12	41	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-17	19/12/2019	233583	19	<0.1	12	38	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-18	19/12/2019	233583	19	<0.1	13	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-19	19/12/2019	233583	19	<0.1	12	37	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-2	19/12/2019	233583	25	<0.1	19	49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-20	19/12/2019	233583	21	<0.1	15	40	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-3	19/12/2019	233583	24	<0.1	19	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-4	19/12/2019	233583	26	<0.1	16	49	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-5	19/12/2019	233583	55	<0.1	16	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-6	19/12/2019	233583	20	<0.1	17	46	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-7	19/12/2019	233583	22	<0.1	16	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-8	19/12/2019	233583	21	<0.1	13	39	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
NIOSP-9	19/12/2019	233583	21	<0.1	15	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TP_P11_1.0	22/10/2019	229077	20	<0.1	9	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TP_P11_2.0	22/10/2019	229077	11	<0.1	17	58	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TP_P11_3.0	22/10/2019	229077	10	<0.1	15	52	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TP_P11_4.0	22/10/2019	229077	10	<0.1	17	54	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TP_P11_5.0	22/10/2019	229077	15	<0.1	13	56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-1	13/11/2019	230803	17	<0.1	23	66	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-10	13/11/2019	230803	19	<0.1	25	72	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-11	13/11/2019	230803	16	<0.1	23	59	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-12	13/11/2019	230803	18	<0.1	22	69	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-13	13/11/2019	230803	18	<0.1	22	66	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-14	13/11/2019	230803	19	<0.1	24	65	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-15	13/11/2019	230803	22	<0.1	23	130	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-16	13/11/2019	230803	30	<0.1	22	72	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-17	13/11/2019	230803	73	<0.1	25	83	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-18	13/11/2019	230803	21	<0.1	24	110	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-19	13/11/2019	230803	18	<0.1	24	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-2	13/11/2019	230803	19	<0.1	21	70	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-20	13/11/2019	230803	18	<0.1	21	75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-3	13/11/2019	230803	19	<0.1	22	65	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-4	13/11/2019	230803	38	<0.1	21	82	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-5	13/11/2019	230803	19	<0.1	21	81	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-6	13/11/2019	230803	19	<0.1	21	61	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-7	13/11/2019	230803	21	<0.1	21	150	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-8	13/11/2019	230803	18	<0.1	21	64	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
TS-9	13/11/2019	230803	20	<0.1	22	95	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B1	18/10/2019	228806	14	<0.1	21	57	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B10	18/10/2019	228806	11	<0.1	6	22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B11	18/10/2019	228806	7	<0.1	4	16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B12	18/10/2019	228806	11	<0.1	5	21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-

			tals				PCBs								Pesticides																																	
			Lead	Mercury	Nickel	Zinc	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Azinophos methyl	b-BHC	Bromophos-ethyl	Carbophenothion	Chlordane	Chlordane (cis)	Chlordane (trans)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	d-BHC	DDD	DDT	DDT+DDE+DDD	Demeton-S-methyl	Diazinon	Dichlorvos	Dieldrin	Dimethoate	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Ethion	Fenamiphos	Fenitrothion	Fenthion
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.05
CRC Care (2011) Direct Contact HSL D - Comm/Ind																																																
NEPM (1999) EIL - Commercial/Industrial			1800		300	690																									640																	
NEPM (1999) ESL - Commercial/Industrial (fine)																																																
NEPM (1999) HIL D - Commercial/Industrial			1500	730	6000	400000								7				45					530				2000					3600						2000				100						
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m																																																
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m																																																
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m																																																
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+																																																
NEPM (1999) Management Limits - Commercial/Industrial (fine)																																																
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**																																														
UFEBP10_B13	18/10/2019	228806	12	<0.1	5	19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B14	18/10/2019	228806	10	<0.1	3	14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B15	18/10/2019	228806	12	<0.1	10	26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B16	18/10/2019	228806	9	<0.1	3	21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B2	18/10/2019	228806	8	<0.1	6	23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B3	18/10/2019	228806	12	<0.1	9	36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B4	18/10/2019	228806	12	<0.1	9	43	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B5	18/10/2019	228806	10	<0.1	9	35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B6	18/10/2019	228806	11	<0.1	8	30	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B7	18/10/2019	228806	11	<0.1	10	33	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B8	18/10/2019	228806	12	<0.1	9	32	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_B9	18/10/2019	228806	12	<0.1	7	24	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N1_1.0	18/10/2019	228806	20	<0.1	15	75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N2_1.0	18/10/2019	228806	12	<0.1	20	62	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N2_2.0	18/10/2019	228806	16	<0.1	18	60	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N2_3.0	18/10/2019	228806	4	<0.1	9	26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N3_1.0	18/10/2019	228806	11	<0.1	13	48	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N3_2.0	18/10/2019	228806	11	<0.1	12	44	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N3_3.0	18/10/2019	228806	10	<0.1	14	46	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_N4_1.0	18/10/2019	228806	12	<0.1	15	71	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S1_1.0	18/10/2019	228806	47	<0.1	19	84	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S2_1.0	18/10/2019	228806	18	<0.1	18	67	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S2_2.0	18/10/2019	228806	19	<0.1	11	54	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S3_1.0	18/10/2019	228806	16	<0.1	17	54	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S3_2.0	18/10/2019	228806	29	<0.1	18	87	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S4_1.0	18/10/2019	228806	15	<0.1	12	38	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
UFEBP10_S4_2.0	18/10/2019	228806	12	<0.1	17	56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	-
Statistical Summary																																																
Number of Results			157	157	157	157	101	101	101	101	101	101	101	157	157	157	157	56	157	157	157	56	56	157	157	56	157	157	157	157	157	157	56	157	157	157	157	56	157	157	157	157	157	56	157	56	101	56
Number of Detects			157	1	157	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			4	<0.1	3	<5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
Minimum Detect			4	0.1	3	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			73	0.1	38	150	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.05	<0.1	<0.05
Maximum Detect			73	0.1	38	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			17	0.05	16	53	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.041	0.041	0.041	0.025	0.041	0.041	0.041	0.025	0.025	0.041	0.041	0.025	0.041	0.041	0.041	0.041	0.068	0.041	0.025	0.041	0.041	0.041	0.041	0.025	0.041	0.041	0.041	0.041	0.041	0.025	0.041	0.025	0.05	0.025
Median Concentration			16	0.05	17	56	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.025	0.05	0.05	0.05	0.025	0.025	0.05	0.05	0.025	0.05	0.05	0.05	0.05	0.05	0.05	0.025	0.05	0.05	0.05	0.05	0.025	0.05	0.05	0.05	0.05	0.05	0.025	0.05	0.025	0.05	0.025
Standard Deviation			7.5	0.004	6.9	24	0	0	0	0	0	0	0	0	0.012	0.012	0.012	0	0.012	0.012	0.012	0	0	0.012	0.012	0	0.012	0.012	0.012	0.012	0.024	0.012	0	0.012	0.012	0.012	0.012	0	0.012	0.012	0.012	0.012	0.012	0	0.012	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Ronnel
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.1	0.2	0.2	0.1	0.05	0.05	0.1
CRC Care (2011) Direct Contact HSL D - Comm/Ind														
NEPM (1999) EIL - Commercial/Industrial														
NEPM (1999) ESL - Commercial/Industrial (fine)														
NEPM (1999) HIL D - Commercial/Industrial				50		80		2500						
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m														
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m														
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m														
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+														
NEPM (1999) Management Limits - Commercial/Industrial (fine)														
Field_ID	**Sampled_Date-Time**	**Lab_Report_Number**												
09SP-1	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-10	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-11	14/01/2020	234535	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-12	14/01/2020	234535	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-13	14/01/2020	234535	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-14	14/01/2020	234535	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-15	14/01/2020	234535	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-2	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-3	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-4	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-5	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-6	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-7	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-8	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
09SP-9	29/11/2019	232014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
CAS 34	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS 35	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS 36	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-1	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-10	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-11	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-12	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-13	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-14	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-15	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-16	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-17	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-18	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-19	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-2	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-20	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-21	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-22	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-23	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-24	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-25	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-26	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-27	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-28	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-29	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-3	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-30	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-31	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-32	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-33	18/08/2020	ES2029153	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-4	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-5	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-6	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-7	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-8	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
CAS-9	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
GASP-1	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-10	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-2	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-3	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-4	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-5	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-6	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-7	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-8	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
GASP-9	17/06/2019	219831	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
KG 12	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG 13	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG 14	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG 15	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-

Field_ID	Sampled_Date-Time	Lab_Report_Number	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Ronnel
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.1	0.2	0.2	0.1	0.05	0.05	0.1
CRC Care (2011) Direct Contact HSL D - Comm/Ind														
NEPM (1999) EIL - Commercial/Industrial														
NEPM (1999) ESL - Commercial/Industrial (fine)														
NEPM (1999) HIL D - Commercial/Industrial				50		80		2500						
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m														
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m														
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m														
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+														
NEPM (1999) Management Limits - Commercial/Industrial (fine)														
KG-1	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-10	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-11	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-2	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-3	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-4	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-5	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-6	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-7	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-8	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
KG-9	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
LC - 5	3/09/2020	ES2031329	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
LC-1	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
LC-2	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
LC-3	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
LC-4	17/08/2020	ES2028861	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	-
NIOSP-1	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-10	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-11	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-12	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-13	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-14	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-15	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-16	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-17	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-18	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-19	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-2	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-20	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-3	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-4	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-5	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-6	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-7	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-8	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
NIOSP-9	19/12/2019	233583	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TP_P11_1.0	22/10/2019	229077	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TP_P11_2.0	22/10/2019	229077	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TP_P11_3.0	22/10/2019	229077	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TP_P11_4.0	22/10/2019	229077	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TP_P11_5.0	22/10/2019	229077	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-1	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-10	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-11	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-12	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-13	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-14	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-15	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-16	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-17	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-18	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-19	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-2	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-20	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-3	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-4	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-5	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-6	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-7	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-8	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
TS-9	13/11/2019	230803	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B1	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B10	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B11	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B12	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1

	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Ronnel
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.1	0.2	0.2	0.1	0.05	0.05	0.1
CRC Care (2011) Direct Contact HSL D - Comm/Ind												
NEPM (1999) EIL - Commercial/Industrial												
NEPM (1999) ESL - Commercial/Industrial (fine)												
NEPM (1999) HIL D - Commercial/Industrial		50		80		2500						
NEPM (1999) HSL D Comm/Indust - VI Clay 0 to <1 m												
NEPM (1999) HSL D Comm/Indust - VI Clay 1 to <2 m												
NEPM (1999) HSL D Comm/Indust - VI Clay 2 to <4 m												
NEPM (1999) HSL D Comm/Indust - VI Clay 4 m+												
NEPM (1999) Management Limits - Commercial/Industrial (fine)												

Field_ID	Sampled_Date-Time	Lab_Report_Number	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Ronnel
UFEBP10_B13	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B14	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B15	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B16	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B2	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B3	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B4	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B5	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B6	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B7	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B8	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_B9	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N1_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N2_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N2_2.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N2_3.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N3_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N3_2.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N3_3.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_N4_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S1_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S2_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S2_2.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S3_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S3_2.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S4_1.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1
UFEBP10_S4_2.0	18/10/2019	228806	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	-	-	<0.1

Statistical Summary

	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Malathion	Methoxychlor	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos	Ronnel
Number of Results	157	157	157	157	157	157	56	56	157	56	56	101
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.2	<0.2	<0.1	<0.05	<0.05	<0.1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.05	<0.05	<0.1
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.041	0.041	0.041	0.041	0.041	0.068	0.1	0.1	0.068	0.025	0.025	0.05
Median Concentration	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.1	0.05	0.025	0.025	0.05
Standard Deviation	0.012	0.012	0.012	0.012	0.012	0.024	0	0	0.024	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0

Appendix K:
Landfill Gas Risk Assessment Location Plan (ERM, August 2021)

Legend

- Site Boundary
- Site Areas
- Gas Monitoring Location

Data Source:
Nearmap Imagery October 2020

Site Layout

2

Drawing No: 0565895m_LFGRA_G002_R00.mxd	Horsley Park - LFGRA 335 Burley Road, Horsley Park, NSW 2175
Date: 17/12/2020 Drawing Size: A4	
Drawn By: KV Reviewed By: RJ	Client: ESR
Coordinate System: GDA 1994 MGA Zone 56 0 50 100 150m N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Legend

- Site Boundary
- Site Areas
- Gas Monitoring Location

Notes:
Values shown are the highest values measured for each location, across all the monitoring events between 11/09/2020 and 01/12/2020.

Data Source:
Nearmap Imagery October 2020

Monitoring Results

3

Drawing No: 0565895m_LFGRA_G003_R01.mxd		Horsley Park - LFGRA 335 Burley Road, Horsley Park, NSW 2175
Date: 17/12/2020	Drawing Size: A4	
Drawn By: KV	Reviewed By: RJ	Client: ESR
Coordinate System: GDA 1994 MGA Zone 56 0 50 100 150m	N	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

ERM

Appendix L:
Landfill Gas Assessment Results (ERM, August 2021)

Location	Date	Flow (L/hr)	Barometric Pressure	SWL (mbtoc)	pump duration (seconds)	CH4 Criteria	CO2 Criteria	Peak CH4	Peak CO2	Min O2	Stablised CH4	Stablised CO2	Stablised O2	Balance	H2S	CO	Relative Pressure	Ambient CO2 % v/v	Ambient Methane % v/v	Comments
GM201	11/09/20	0.0	1024	4.046	60	**1.0**	**1.5**	0.0	6.4	15.7	0.0	6.4	15.7	77.9	0	0	0.31	0.00	0.1	
GM201	29/09/20	0.4	1015	4.259	60	**1.0**	**1.5**	0.0	4.7	19.4	0.0	4.6	19.4	76.0	0	2	0.29	0.00	0.0	
GM201	30/10/20	0.0	1002	3.074	60	**1.0**	**1.5**	0.0	2.6	14.0	0.0	2.5	14.0	83.5	0	0	19.92	0.00	0.0	
GM201	1/12/20	-0.1	1003	3.818	60	**1.0**	**1.5**	0.0	13.5	14.3	0.0	13.5	14.4	72.2	2	1	12.11	0.00	0.1	
GM202	11/09/20	0.1	1024	--	60	**1.0**	**1.5**	0.0	2.6	19.9	0.0	2.6	19.9	77.5	0	0	0.03	0.00	0.1	Dry at 5m
GM202	29/09/20	0.0	1017	--	60	**1.0**	**1.5**	0.0	2.9	19.5	0.0	2.9	19.5	77.6	0	2	0.03	0.00	0.0	Dry
GM202	30/10/20	-0.1	1002	--	60	**1.0**	**1.5**	0.0	5.0	19.6	0.0	4.9	19.6	75.4	0	0	32.78	0.00	0.0	
GM202	1/12/20	-0.2	1003	--	63	**1.0**	**1.5**	0.1	16.1	10.3	0.1	16.0	10.4	73.5	1	1	6.66	0.00	0.0	
GM203	11/09/20	0.2	1024	--	60	**1.0**	**1.5**	0.0	3.7	16.8	0.0	3.7	16.8	79.5	0	1	0.00	0.00	0.1	dry at 5.139m
GM203	29/09/20	0.0	1016	--	60	**1.0**	**1.5**	0.0	3.5	17.0	0.0	3.5	17.0	79.4	0	2	0.03	0.00	0.0	Dry
GM203	30/10/20	-0.1	1002	4.7	60	**1.0**	**1.5**	0.0	6.4	14.4	0.0	6.4	14.4	79.3	0	0	21.54	0.00	0.0	
GM203	1/12/20	-0.1	1003	4.9	63	**1.0**	**1.5**	0.0	4.4	15.9	0.0	4.4	16.0	79.7	1	0	15.09	0.00	0.0	
GM204	11/09/20	0.0	1023	--	60	**1.0**	**1.5**	0.0	3.4	17.1	0.0	3.4	17.4	79.2	0	0	0.05	0.00	0.1	dry at 4.534m
GM204	29/09/20	0.4	1015	--	60	**1.0**	**1.5**	0.0	2.9	19.0	0.0	2.9	19.0	78.1	0	2	0.09	0.00	0.0	Dry
GM204	30/10/20	-3.3	1002	--	60	**1.0**	**1.5**	0.4	13.4	4.6	0.0	13.4	4.6	82.1	0	0	0.34	0.00	0.0	
GM204	1/12/20	-0.5	1003	--	65	**1.0**	**1.5**	0.0	6.6	15.2	0.0	6.6	15.2	78.2	0	0	14.76	0.00	0.1	
GM205	11/09/20	0.0	1023	--	60	**1.0**	**1.5**	0.0	6.4	14.9	0.0	6.4	14.9	78.7	0	1	-0.05	0.00	0.1	dry at 5.139m
GM205	29/09/20	0.0	1015	--	60	**1.0**	**1.5**	0.0	5.0	17.5	0.0	5.0	17.5	77.5	0	2	0.00	0.00	0.0	Dry
GM205	30/10/20	0.1	1002	--	60	**1.0**	**1.5**	0.1	13.2	12.3	0.0	13.1	12.3	74.6	0	0	-0.02	0.00	0.0	
GM205	1/12/20	-0.3	1003	--	70	**1.0**	**1.5**	0.0	14.3	7.8	0.0	14.3	7.8	77.9	0	1	12.76	0.00	0.1	
GM206	11/09/20	0.0	1024	3.204	60	**1.0**	**1.5**	0.0	8.0	14.8	0.0	8.0	14.8	77.2	0	1	-0.03	0.00	0.1	
GM206	29/09/20	0.0	1015	3.340	60	**1.0**	**1.5**	0.0	8.4	14.7	0.0	8.4	14.7	76.9	0	4	0.00	0.00	0.0	
GM206	30/10/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	GasClam
GM206	1/12/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	GasClam
GM207	11/09/20	0.1	1023	4.960	60	**1.0**	**1.5**	0.0	3.4	12.4	0.0	3.3	12.4	84.2	0	1	0.03	0.00	0.1	
GM207	29/09/20	-5.7	1015	4.484	60	**1.0**	**1.5**	0.0	4.9	6.7	0.0	4.9	6.8	88.3	0	3	-0.03	0.00	0.0	
GM207	30/10/20	-6.5	1003	4.561	60	**1.0**	**1.5**	0.0	7.7	5.1	0.0	7.7	5.2	87.2	0	0	4.84	0.00	0.0	
GM207	1/12/20	-3.8	1003	4.659	70	**1.0**	**1.5**	0.0	9.7	3.3	0.0	9.7	3.4	87.0	0	0	11.86	0.00	0.1	
GM208	11/09/20	-0.1	1024	4.395	60	**1.0**	**1.5**	0.0	3.1	13.2	0.0	3.1	13.1	83.8	0	0	0.02	0.00	0.1	
GM208	29/09/20	0.1	1015	4.384	60	**1.0**	**1.5**	0.0	3.0	10.6	0.0	2.9	10.6	86.4	0	2	0.09	0.00	0.0	
GM208	30/10/20	-2.0	1003	4.386	60	**1.0**	**1.5**	0.0	5.2	9.6	0.0	5.1	10.0	84.6	0	0	33.52	0.00	0.0	
GM208	1/12/20	-2.6	1004	4.429	65	**1.0**	**1.5**	0.0	8.3	4.7	0.0	8.3	4.8	87.0	0	0	11.10	0.00	0.1	
GM209	11/09/20	0.1	1023	--	60	**1.0**	**1.5**	0.0	14.0	7.2	0.0	14.0	7.2	78.8	0	1	-0.05	0.00	0.1	dry at 4.744m
GM209	29/09/20	0.0	1015	--	60	**1.0**	**1.5**	0.0	16.0	6.4	0.0	16.0	6.4	77.6	0	10	0.05	0.00	0.0	Dry
GM209	30/10/20	0.0	1001	--	60	**1.0**	**1.5**	0.0	17.4	6.0	0.0	14.8	6.5	76.6	0	0	16.75	0.00	0.0	
GM209	1/12/20	-0.2	1003	--	63	**1.0**	**1.5**	0.0	24.9	2.4	0.0	24.8	2.5	72.7	1	1	5.88	0.00	0.1	
GM210	11/09/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	No gas tap. Dry at 5.049m
GM210	29/09/20	0.1	1016	--	60	**1.0**	**1.5**	0.0	3.2	18.0	0.0	3.2	18.0	78.8	0.0	2	0.1	0.0	0.0	Dry at 5.050m
GM210	30/10/20	0.0	1002.0	4.8	60.0	**1.0**	**1.5**	0.0	22.4	2.4	0.0	22.1	2.5	75.2	0.0	0.0	20.8	0.00	0.0	
GM210	1/12/20	0.0	1003.0	4.9	65.0	**1.0**	**1.5**	0.0	13.0	10.1	0.0	13.0	10.1	76.9	1.0	0.0	11.6	0.00	0.0	
GM301	11/09/20	0.1	1024	--	60	**1.0**	**1.5**	0.0	5.3	6.9	0.0	5.3	6.9	87.8	0	0	-0.05	0.00	0.1	dry/mud at 6.775m
GM301	29/09/20	0.2	1015	--	60	**1.0**	**1.5**	0.0	5.8	7.3	0.0	5.8	7.3	86.9	0	3	-0.02	0.00	0.0	Dry
GM301	30/10/20	0.0	1002	--	60	**1.0**	**1.5**	0.0	10.0	6.9	0.0	10.0	4.6	89.1	0	0	29.35	0.00	0.0	
GM301	1/12/20	-0.2	1003	--	63	**1.0**	**1.5**	0.0	8.7	6.6	0.0	8.7	6.7	84.8	2	1	12.33	0.00	0.0	
GM302	11/09/20	0.0	1024	--	60	**1.0**	**1.5**	0.0	2.5	17.8	0.0	2.5	17.8	79.7	0	0	0.09	0.00	0.1	dry/mud at 6.557m
GM302	29/09/20	0.3	1015	--	60	**1.0**	**1.5**	0.0	0.8	21.0	0.0	0.8	19.9	78.2	0	2	0.00	0.00	0.0	Dry
GM302	30/10/20	-0.8	1002	6.5	60	**1.0**	**1.5**	0.0	5.8	13.7	0.0	5.8	13.7	80.5	0	0	0.45	0.00	0.0	
GM302	1/12/20	-0.4	1003	6.6	60	**1.0**	**1.5**	0.5	12.3	0.1	0.5	12.3	0.2	87.1	2	1	11.53	0.00	0.0	
GM303	11/09/20	0.1	1023	--	120	**1.0**	**1.5**	0.0	2.4	20.1	0.0	2.4	20.1	77.5	0	1	0.07	0.00	0.1	No gas tap. Replaced and readings taken, well purged 2x as long. Mud at 6.380m.
GM303	29/09/20	0.2	1015	--	60	**1.0**	**1.5**	0.0	5.1	17.6	0.0	5.1	17.6	77.3	0	2	0.10	0.00	0.0	Dry
GM303	30/10/20	-0.1	1002	6.4	60	**1.0**	**1.5**	0.0	8.5	13.2	0.0	8.5	13.2	78.3	0	0	16.11	0.00	0.0	
GM303	1/12/20	-0.1	1003	--	60	**1.0**	**1.5**	0.0	7.9	13.7	0.0	7.9	13.8	78.5	2	0	10.94	0.00	0.0	

Well ID	Max Flow (L/hr)	Max CH4 (% v/v)	Max CO2 (% v/v)	Location	GSV CH4 (L/hr)	GSV CO2 (L/hr)
GM201	0.4	0	13.5	Stage 2C	0	0.054
GM202	0.1	0.1	16	Stage 2C	0.0001	0.016
GM203	0.2	0	6.4	Stage 2C	0	0.0128
GM204	0.4	0	13.4	Stage 2A	0	0.0536
GM205	0.1	0	14.3	Stage 2A	0	0.0143
GM206	0	0	8.4	Stage 2A	0	0
GM207	0.1	0	9.7	Stage 2A	0	0.0097
GM208	0.1	0	8.3	Stage 2A	0	0.0083
GM209	0.1	0	24.8	Stage 2A	0	0.0248
GM210	0.1	0	22.1	Stage 2A	0	0.0221
GM301	0.2	0	10	Stage 3	0	0.02
GM302	0.3	0.5	12.3	Stage 3	0.0015	0.0369
GM303	0.2	0	8.5	Stage 3	0	0.017
Overall	**0.4**	**0.5**	**25**	**n/a**	**0.0020**	**0.0992**

Appendix M:
Environmental Management Plan (BSA, 2020)

LFG Management Plan

Environmental Management Plan for Landfill Gas, Horsley Park Landfill

CSR Building Products Limited

Job ID. 0103

PROJECT NAME:	Environmental Management Plan for Landfill Gas, Horsley Park Landfill
JOB ID:	0103
DOCUMENT CONTROL NUMBER	0103_RPT0076.D
PREPARED FOR:	CSR Building Products Limited
APPROVED FOR RELEASE BY:	Dr Ben Dearman

DOCUMENT CONTROL

VERSION	DATE	COMMENT	PREPARED BY	REVIEWED BY
A	02.09.2020	Updated for Auditor Review	Mitchell Browne	Jack Horan
B	13.11.2020	Final	Mitchell Browne	Jack Horan

DISCLAIMER

Biogas Systems Australia acts in all professional matters as a faithful advisor to the Client and exercises all reasonable skill and care in the provision of its professional services.

Reports are commissioned by and prepared for the exclusive use of the Client. They are subject to and issued in accordance with the agreement between the Client and Biogas Systems Australia. Biogas Systems Australia is not responsible for any liability and accepts no responsibility whatsoever arising from the misapplication or misinterpretation by third parties of the contents of its reports.

Except where expressly stated, Biogas Systems Australia does not attempt to verify the accuracy, validity or comprehensiveness of any information supplied to Biogas Systems Australia for its reports.

Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by the client or their nominees during the visit, visual observations and any subsequent discussions with regulatory authorities. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Biogas Systems Australia is both complete and accurate. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

CONTENTS

TABLES

EXECUTIVE SUMMARY

The objective of this Environmental Management Plan (EMP) is to provide a landfill gas (LFG) management plan that can be enforced to ensure protection of surrounding land users from the former Camide Landfill. To achieve the objective of the EMP the following aspects of LFG management will be addressed to ensure ongoing suitability of the neighbouring sites for commercial/industrial land use including:

- Monitoring and management of subsurface emission in the perimeter well network
- Monitoring and management of surface emissions form the landfill cap and biofiltration trench (BT)
- Monitoring and management of service pits and enclosed spaces on the landfill and adjacent to the landfill (where possible).

The investigations completed to date include installation of a perimeter monitoring network and regular monitoring of LFG conditions at the boundary of the former Camide Landfill. The implementation of a gas interception biofiltration trench was initially installed along the western boundary of the landfill in June 2005 and after the success of this trial, was extended around the entire perimeter of the landfill. The construction of the biofiltration trench around the remainder of the landfill was commenced in July 2018 and completed in May 2019.

Results of the post installation monitoring at perimeter locations outside of the BT in May 2019 and subsequent monitoring indicate a reduction of methane concentrations to below the threshold concentration of 1%v/v. This monitoring confirmed the effectiveness of the northern portion of the BT in the direction of the closest commercial / industrial land user.

To ensure the protection of the surrounding land users this EMP has been developed, which prescribes monitoring, reporting and further mitigation actions (if required). To manage the risks to the surrounding land users, the monitoring of service pits and enclosed spaces (stormwater pits), surface emissions (landfill cap and BT), subsurface migration and water levels (perimeter monitoring) is required. These monitoring activities will not only assess the risk to the surrounding land users but also provide data for ongoing validation of the effectiveness of the BT at mitigating lateral migration of gas from the landfill.

The monitoring of these locations will be completed quarterly, compared against threshold criteria sourced from the Hazardous Ground Gas (NSW 2019) guidelines and reported both quarterly and annually. In the event that a threshold criterion is exceeded for methane or an increasing carbon dioxide trend is observed, additional investigation will be required to determine the course of action which may range from increased monitoring frequency to notification of the regulatory authorities in the event of explosive conditions or acute human health risk.

The site owner (currently CSR Building Products Limited) is the responsible party for ensuring the EMP is executed and the objectives of the EMP are met which is detailed in a legal clause as part of the contract for sale of the closest adjacent properties to the north, south and west of the Former Camide Landfill.

The intent of the EMP is to continue monitoring for at least a period of 24 months from commencement and reassess the stability of landfill gas generation and migration and there is no longer a risk to surrounding land users.

1 INTRODUCTION

This Environmental Management Plan (EMP) has been prepared to document the management and monitoring requirements for the former Camide Landfill (Figure 1) to demonstrate that the landfill gas does not present a risk to surrounding off-site properties.

There is an existing EMP which is part of the contract for sale "Pursuant to clause 38.3 of sale contract dated 9 March 2018 between CSR Building Products Limited and Australand C & I Land Holdings (Australand) as Trustee for Frasers Property C & I Land Holdings (Horsley Park No 2) Trust in respect of the sale of Lots 101 & 102, 327 – 335 Burley Road, Horsley Park CSR Building Products. This previous EMP was written to address the requirements to monitor and manage the risk between the Former Camide Landfill and the Stage 1 development.

As part of the development of an EMP to monitor and manage the risk between the Former Camide Landfill and the Stage 2 development the original Environmental Management Plan (EMP) (Ref 0103 BSA RPT0075.C) was expanded on to include the additional monitoring requirements for Stage 2. This will result in two EMPs for the Former Camide Landfill site which will need to be administered by CSR. For the purpose of implementation, this EMP covers the requirements of the original EMP for Stage 1 plus the additional requirements for Stage 2. This meets the objective of the client to maintain the existing EMP under its contractual requirements with Australand and Horsley Park No 2 whilst meeting the additional management requirements for Stage 2 and the contractual requirements with ESR Australia.

The current EMP (this documents) details the monitoring requirements, roles, responsibilities, reporting requirements and enforceability to ensure that LFG emissions do not impact human health and the environment of surrounding properties both Stage 1 and Stage 2.

1.1 Background

Camide operated a non-putrescible solid waste landfill at the Horsley Park site from 1990 to 1994. The landfilling took place in a quarry void created by clay extraction activities. It has been estimated that 950,000 m^3 of waste was imported to the site in an area of 4.1ha of the site as indicated in Figure 1.

At the completion of landfilling in 1994 the waste was capped with a 1m thick compacted clay layer and a 500mm thick revegetation/landscaping layer in accordance with the Landfill Closure Plan (LCP) (EGIS 1999). At the time of the capping and closure of the landfill the surrounding land users were the other active parts of the quarry activities to the north and the east and open rural land use which bounds the landfill to the west and the south.

Since the capping activities there has been significant site development and regional development of the land surrounding the landfill into commercial industrial land uses. This development has resulted in the encroachment of commercial / industrial development to the north of the northern boundary of the former Camide Landfill. Surrounding land use to the west, south and east have not significantly changed since implementation of the LCP.

The planned commercial / industrial development to the east and south of the landfill is proposed within 250m of the inferred extent of waste. The historical monitoring of perimeter wells at the former Camide Landfill site indicated that hazardous ground gases may potentially migrate laterally which could potentially impact adjacent off-site land users of the Stage 1 and Stage 2 development.

The remedial solution which was designed for the site included a biofiltration trench (BT) to mitigate fugitive gas emissions by oxidation. The trench is installed around the entire perimeter of the former Camide Landfill and is extend into groundwater to 9m in some sections.

As part of the post remediation validation monitoring of LFG wells outside of the BT has been undertaken since May 2019 which report that the lateral migration of fugitive emissions from the former Camide Landfill is being managed. Generation of LFG and migration pathways of LFG can change over time and the relatively small timeframes for monitoring need to be addressed to ensure that conditions have not changed.

During the final installation of the BT some wells were damaged or were in close proximity to the trench which may be influencing the gas concentrations and flow reported during the monthly spot monitoring. As part of the Stage 2 development to the east and south of the landfill ten additional LFG wells and one background LFG location were established to ensure that the perimeter spacing along the eastern and southern boundary of the landfill was approximately 20m. The background LFG location is a sufficient distance from the landfill and is shown on Figure 4.

The development of this EMP is to assist in the long term monitoring of the LFG generation and migration pathways to ensure that the neighbouring properties are protected.

1.2 EMP Objectives

The objective of the EMP is to provide a landfill gas management plan that will be enforced to ensure protection of surrounding land users from the former Camide Landfill.

To achieve the objective of the EMP the following aspects of LFG management will be addressed to ensure ongoing suitability of the neighbouring sites for commercial/industrial land use including:

- Monitoring and management of subsurface emissions in the perimeter well network
- Monitoring and management of surface emissions from the landfill cap and the biofiltration trench
- Monitoring and management of emissions in service pits and enclosed spaces on the landfill and adjacent to the landfill (where possible).

2 SITE OVERVIEW

2.1 Site Description

2.1.1 Location

The site is located at 327 to 335 Burley road, Horsley Park (refer Figure 1). The site is currently identified as Lot 103 of Deposited Plan 1214912 (Historically - Lot 1 Deposited Plan 1228114) based on SIX maps (*maps,six.nsw.gov.au* – accessed 12.11.2020). The landfill site is a part of a larger portion of land which is subject to development plan DA97 – 1085. The landfill is located in the south western corner of the site. A summary of site details is presented in Table 1.

Table 1 – Site Details

Item	Description
Site name and address	Former Camide Landfill, 327 to 335 Burley Road, Horsley Park, NSW 2175
Real property description	Current property description is Lot 103 of Deposited Plan 1214912 as identified in SIX maps (Historically - Lot 1 Deposited Plan 1228114) The EPL details refer to Lot 2 DP 1228114.
Current site owner	CSR Building Products Ltd
Surrounding Allotments	Lots 101, 102 (Stage1 Development) and 103 (Stage 2 Development), 327 – 335 Burley Road, Horsley Park These lots are currently identified in six maps as DP1259616 Lot 202, DP1264857 Lot 301 and DP1214912 Lot 103 respectively
Operational timeframe	Landfilling between 1990 – 1994
Area	Approximately 4.1 hectares
Volume	Approximately 950,000 m^3
Depth	Total waste thickness is estimated to approximately 18 m below ground surface
Waste composition	No putrescible wastes recorded only commercial and industrial*

* Waste disposal records were not available to review in the previous LCP therefore the potential presence of some putrescible wastes exists.

2.1.2 Surrounding Land Use

The land use of the surrounding area is summarised in Table 2.

Table 2 - Surrounding Land Uses

Direction	Use
North	Stage 1 development area. Further to the north is commercial/industrial
South	Stage 2A development area. Rural land with open pasture further to the south.
East	Stage 2C development area (future commercial). Rural land use and market gardens further east
West	Pasture with commercial/industrial land use further to the west

2.2 Site History and Management

As detailed in the background in Section 1 the site was utilised as a quarry prior to 1990. Landfilling activities commenced in 1990 and ceased in 1994 with an estimated 950,000 m^3 of fill placed in the former quarry. The LCP was prepared in accordance with the requirements of the deferred Commencement Conditions 1 to 3 of DA97 – 1085 and in the NSW EPA Guidelines in effect at the time.

2.2.1 Landfill Closure Plan

The Landfill Closure Plan (LCP) (EGIS 1999) was developed for the site in 1999, which outlined ongoing monitoring to be undertaken and stabilisation criteria for the cessation of LFG monitoring. The LCP was prepared in accordance with the requirements of the deferred Commencement Conditions 1 to 3 of DA97 – 1085 and in accordance with the NSW EPA Guidelines in effect at the time. The original Remediation Action Plan (RAP) was presented within the LCP (EGIS 1999) based on several environmental investigations undertaken prior to 1999 which are referenced in Section 6. The current RAP for Stage 2 was developed in 2014 and amended in 2019 to reflect current site conditions (*Ref: Remediation Action Plan. Lot 1 in DP 106143, CSR Building Products, 327 – 335 Burley Road, Horsley Park. (Revised September 2019*)

2.2.2 Environment Protection Licence (EPL) #123

In addition to the LCP an Environment Protection Licence (EPL) #123 is active for the site and regulated by the EPA. The EPL outlines monitoring requirements, maximum scale and load limit for particular contaminants relating to these activities. The EPL for the site is currently active for the following scheduled activities:

- Ceramic works.
- Crushing, grinding or separating.
- Extractive activities.
- Mining for minerals.

In addition to these activities, the EPL addresses monitoring and reporting requirements for the landfill. There has been extensive monitoring of groundwater, leachate, landfill gas since the commencement of the LCP and as part of the EPL which are referenced in Section 6. The objective of the EPL is to regulate specific activities and although useful data is collected the has a different objective.

It should be noted that at the time of writing this EMP, an application is with the NSW EPA (Notice No. 1570706) to surrender the EPL on a section of the site. The application aims to surrender the EPL for Lots 101 and 102 of the EPL#123 from lot 103 (now identified at Stage 1, Stage 2 and Stage 3) of which a portion of this is the Former Camide Landfill.

2.2.3 Remedial History

The landfill has undergone years of assessment since the closure of the landfilling activities and has since been monitoring the LFG emissions and implemented gas migration controls for the identified LFG at the site. Table 3 below gives a brief history of the activities undertaken on the site to date.

Of all the activities and investigation completed to date the most significant is the implementation of a gas interception biofilter and trench was installed along the western boundary of the landfill in June 2005. It was installed as a trial to assess the validity of this type of gas mitigation solution (Dever 2009). Quarterly monitoring of wells GM1-GM11 was undertaken from October 2006 in accordance with EPL #123. Monitoring wells GM12-GM32 were installed in July 2017 to monitoring the lateral migration of LFG from the site. The trial was confirmed a success in the 2009 report and was then adopted for the balance of the landfill perimeter.

The construction of a biofilter and trench around the remainder of the landfill was commenced in July 2018 and completed in May 2019. As part of the Stage 1 and Stage 2 developments additional investigation location have been added at the perimeter of the former Landfill to ensure the spacing is adequate to continue to monitor the potential for fugitive emissions.

Table 3 – Site History Chronology of Activities

Date	Detail
1994	Landfill ceased. Base of landfill RL 58.0m AHD. Volume of void estimated at 950,000 m3 based on a plan of the excavated void and a plan of final landform of the Camide landfill (Egis Consulting Australia Pty Limited, April 1999)
October 1998	Development consent for continued quarrying, landfilling and site remediation granted in Land and Environment Court with conditions that a Landfill Closure Plan be developed and implemented for the pre-existing Camide landfill
October 1998	Investigation of the Camide landfill commenced: thickness and construction of landfill capping layer assessed using test pits (thickness varied from 200 mm to 800 mm). Past groundwater monitoring reviewed. Surface and sub-surface gas measured. Additional groundwater wells installed to the full depth of the landfill.
August 1999	LCP proposes upgrading of landfill capping layer, installation of landfill gas monitoring wells, and a landfill gas monitoring program to complement the groundwater monitoring program. This was reflected in the EPA licence, which included these monitoring locations as a variation dated 22/6/2001. These points were monitored monthly, waters were reduced the quarterly in July 2002.
June 2000	Landfill capping upgraded according to LCP. Consequences were reduced surface gas emissions but increased sub-surface gas migration.
May 2001	EPA require investigation of the levels of leachate and landfill gas being generated by the decomposing waste present in the landfill, Pollution Reduction Program (PRP) added to EPL 123.
October 2002	Development application for conventional landfill gas management in accordance with EPA requirements submitted to Fairfield Council.
December 2003	DA consent granted from Fairfield Council to install gas extraction and flaring system. Local residents objected on grounds of noise, visual aesthetics and emissions, leading to alternative treatments being sought.
November 2004	Proposal to investigate passive biofiltration system submitted to EPA.
March 2005	Trial biofilter added to EPL123 PRP
June 2005	Stage 1 trial construction of gas interception biofilter and trench along western boundary of landfill. Gas readings were monitored until March 2006. Average gas in GM7 prior to installation 37.5%; 0.6% after installation. Report on stage 1 submitted to EPA.
April 2006	Application is made to the EPA regarding decreasing monitoring to quarterly due to the stabilisation of the landfill; variation of the licence is dated August 2006.
October 2006	Full scale version of trench constructed and PRP regarding the trench removed from the EPL.
October 2006 to Present	Monitoring undertaken quarterly as required by EPL 123 (VGT)
October 2013	Mulch replaced over biofilter trench, repairs to observation wells.
July 2017	Landfill gas wells GM12 – GM32 installed by DLA
August 2017 - ongoing	Landfill gas monitoring of GM12 – GM32 undertaken by DLA/ERM
July 2018 to May 2019	Remainder of biofiltration trench constructed
June 2019	Landfill Gas Risk Assessment of Stage 1 completed. This report includes review of the data which was collected for the validation of the effectiveness of the BT
September 2020	Landfill Gas Risk Assessment of Stage 2 completed. This report includes review of the data which was collected for the validation of the effectiveness of the BT

2.3 Environmental Setting

The environmental setting and surrounding environment are detailed in the LCP (EGIS 1999), RAP (DLA 2017) report with summary information also provided in the LFGRA (DLA 2017) report which are referenced in Section 6. These conditions were further investigated and refined in two LFGRA which assess the risk to Stage 1 (2019 BSA) and Stage 2 (DBD 2020) which immediately adjoin the former Camide Landfill. The site setting includes the wider background of the setting which includes the quarry operations (by PGH Bricks & Pavers), the surrounding adjacent sites and the former Camide Landfill (specifically Landfill Gas). A summary of the key information from these reports is provided in the following sections.

2.3.1 Regional Geology

The 1:100,000 Soil Landscape Sheet for Penrith (9030, 1989) shows the landform to comprise the Blacktown Unit with gently undulating rises on Wianamatta Group bedrock with slopes usually <5% and broad round hill crests.

The Blacktown Unit is described as a 'Residual Landscape'. The soils of this unit comprise hard setting, mottled texture contrast soils, including shallow (<1.5m) red and brown podsols on the crests, grading to deeper (>2m) yellow podsols on the lower slopes and near drainage lines. This unit is associated with known salinity and dispersive hazard, particularly in lower slopes and streamlines where soils have the potential to become waterlogged.

2.3.2 Site Specific Geology

Previous investigations have indicated that the Site contains red podzolics with brown silty to clay loam topsoils and dark red sub plastic medium clay subsoils which are in turn underlain by weathered sandstone, shale and siltstone bedrock encountered at depths ranging from 0.9 to 5.2 metres.

2.3.3 Hydrology and Hydrogeology

The structural and textural characteristics of the Bringelly Shale underlying the Site and of the Wianamatta Group determine the hydrological regime of the region. Claystones, siltstones and sandstones underlying the Site are of negligible porosity and permeability due to the fine-grained nature and the degree of intergranular cementation. Groundwater in these formations is stored and migrates principally through fractures and joints.

Surface clays derived from the weathering and alteration of the Bringelly Shale form a capping layer over the underlying and less weathered rock mass restricting infiltration and groundwater recharge. The limited groundwater recharge and low permeability results in poor flushing of the rock mass, leaving connate salts within the sediments. As a result, high salinity and low yield are a common trait of the groundwater within the Wianamatta bedrock.

The distribution of groundwater levels across the entire Site does not form a consistent pattern, locally the groundwater levels are influenced by the quarry voids. Overall a gradient exists in a north-westerly direction towards Ropes Creek. Typically, groundwater levels at the Site vary between 2 and 10 metres below existing natural ground levels.

2.3.4 Landfill Gas

Previous investigations of LFG at the Camide Landfill site have found elevated concentrations of landfill gases in perimeter wells at the south, north and eastern perimeter. Methane gas was measured in excess of 1%v/v (DLA 2016) which therefore does not comply with the investigation criteria. In response to these exceedances additional investigations including a Remediation Action Plan (DLA 2017) and installation of a biofiltration trench (BT) around the perimeter of the waste mass has been executed and validated along the northern boundary by three rounds of monitoring data (5th April 2019, 17th April 2019 and the 10th May 2019). It should be noted that the western portion of the BT was previously validated by Dever (2009) and the southern and eastern portions of the trench have only one round of validation monitoring.

Results of the post installation monitoring at perimeter locations outside of the BT in May 2019 indicate a reduction of methane concentrations to below the threshold concentration of 1%v/v. The subsequent monitoring of the northern portion of the BT undertaken by Biogas Systems on the 22nd May 2019 and 19th June 2019 confirmed the effectiveness of the BT as reported in Stage 1 Landfill Gas Risk Assessment Horsley Park 2019. This monitoring confirmed the effectiveness of the northern portion of the BT in the direction of the closest commercial / industrial land user.

In order to assess the gas migration (pathways) from the former landfill (source) to the Stage 2 development (receptor) newly installed perimeter wells were installed and monitored in an intensive six-week program. The risk assessment undertaken relies predominantly on the data gathered from the continuous monitoring locations and six weeks of spot monitoring of the new and relevant existing LFG wells. In addition to this intensive investigation, historical spot monitoring and groundwater level data has been utilised where it is deemed suitable for this risk assessment.

The data gaps addressed in this assessment include the re-establishment of a perimeter well spacing of 20m through additional locations and replacement of wells, more thorough investigation of conditions utilising continuous gas monitor, confirmation of borehole flow using a GFM, dipping of groundwater wells on multiple occasions to gain an understanding of groundwater elevation respective to the biofiltration trench and investigation of the effectiveness of the biofiltration trench.

Under current site conditions LFG at the Stage 1 and Stage 2 developments are not considered to pose an unacceptable risk to on-site human receptors. The LFG risk between Stage 1 and Stage 2 and the former Camide Landfill was determined to be Low (CS2) based on the Level 2 risk analysis and assessments completed for each adjoining site. There are no current sources on the Stage 1 and Stage 2 sites (except for CO2 in validated geotechnical fill). The only plausible pathways and therefore potential risk is only fully realised when ground gas can migrate beneath or through the biofiltration trench.

The surveyed depth of the trench is known from as constructed drawings, confirmation of the current perimeter well network elevation and depth in meters Australian Height Datum has been identified as a data gap requiring future work. The current assessment of the depth of groundwater and the depth of the biofiltration trench has been calculated using as constructed survey (relative levels) and field measurements meters below ground surface. More accurate confirmation of these elevations will provide more certainty that migration beneath the biofiltration trench is not occurring.

The Level 1 risk analysis and assessment identified services in proximity to the landfill as a potential receptor with a moderate qualitative risk. The services present on the Camide landfill are limited to stormwater which is collected along the western boundary and discharged by gravity to the north of the Stage 1 devleopment. This is the only plausible pathway for gas migration through services from the former Camide Landfill. There are no proposed or existing services between Stage 2 and the former Camide Landfill.

Based on the findings of this landfill gas risk assessment, the risk of landfill gas migration from the former Camide Landfill onto the Stage 1 and Stage 2 developments and causing harm to human health is considered low and no specific development constraints have been identified with the exception of ensuring that the buildings are constructed with a reinforced concrete ground-bearing foundation raft slab with limited service penetrations cast into slab.

3 LANDFILL GAS MANAGEMENT

3.1 Introduction

Landfill gas is being generated from the landfill and has the potential to migrate for a period of 10-20 years at levels that may cause harm to human health of the environment. Although significant investigations and remediation to prevent lateral migration (specifically the Biofiltration Trench) has been completed, the gas mitigation measure should be validated, and site conditions assessed over time.

The long-term monitoring of LFG is required to account for changing site conditions, climatic conditions and any natural disasters that may alter the effectiveness of the gas mitigation measures.

The term 'hazardous ground gas' is applied to both gases and vapours that may be present within the pore space of soils and rocks and may impact adversely upon human health and safety or the integrity of structures and may consequently affect activities such as the construction and management of buildings. Such gases or vapours may be of natural or anthropogenic origin.

The ground gases that are generally of concern in this context are:

- Methane, carbon dioxide, carbon monoxide, petroleum vapours, hydrogen, hydrogen sulphide, radon, volatile organic compounds (VOCs).

Of concern at the former Camide Landfill is the presence of methane and carbon dioxide in high concentrations.

- Methane (CH4) is a flammable gas that is explosive in the concentration range 5–15% v/v in air (somewhat different ranges may apply in atmospheres with enhanced or reduced oxygen concentrations). It is also potentially an asphyxiant if its presence results in a low oxygen concentration. It is less dense than air and has a distinct odour.
- Carbon dioxide (CO2) is an asphyxiant and toxic gas that is significantly denser than air and is odourless.

This EMP is the document to assist stakeholders manage landfill gas and ensure the performance of the gas mitigation measures until evidence suggest there is no longer a risk to surrounding land users.

3.2 Regulatory Requirements

The following laws, and relevant associated regulatory instruments, have been considered in the preparation of this EMP.

- Protection of the Environment Operations (POEO) Act 1997.
- Environment Planning and Assessment (EP&A) Act 1979.
- Contaminated Land Management (CLM) Act 1997.

The site is no longer an operating landfill, however, still maintains an EPL. The proposed screening criteria for the objective of this EMP is to provide a landfill gas management plan that will be enforced to ensure protection of surrounding land users from the former Camide Landfill. Therefore, the application of screening criteria from the Assessment and Management of Hazardous Ground Gases (NSW 2019) are the most applicable for the assessment of risk to surrounding sites posed by the former landfilling activities.

3.2.1 Environmental and Safety Plans

It is acknowledged that there are environmental and WHS risks associated with any works completed within the landfill site. This EMP has not specifically outlined the requirements for management of future potential civil works which may include excavation for maintenance and installation of services as these risks vary depending on the scope of works. The management of these future works will be required to be addressed in a standalone Construction Environmental Management Plan (CEMP) prepared by a suitably qualified consultant or contractor specific to the works. The CEMP will include associated safety and environmental management requirements associated with ground disturbance activities with particular reference to hazardous gases, confined space, reinstatement and rectification or cap and the biofiltration trench as required. Any changes to site conditions will need to be reflected in an updated EMP to ensure risk is properly managed and monitored.

3.3 LFG Migration Controls

3.3.1 Landfill Cap

A landfill cap consisting of 1m clay and 0.5m landscaping material has been constructed at the site. The purpose of the cap is to reduce infiltration and reduce surface gas emissions. The landfill cap should be maintained to ensure continued performance. Performance of the cap will be assessed through surface monitoring and inspections as outlined below.

3.3.2 Perimeter Biofiltration Trench

The biofiltration trench should be maintained to ensure continued performance. This includes topping up the trench with coarse mulch as required and ensuring that the biofiltration media remains moist, particularly during the drier months. Monitoring and management of the biofiltration trench should be conducted in accordance with the handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system (NSW DECC, 2010). Performance of the biofiltration trench will be assessed through surface monitoring and inspection as outlined below.

3.4 Adopted Threshold Criteria

The following table outlines the adopted threshold criteria to be applied to subsurface, surface and biofiltration trench emissions and enclosed space monitoring. The summary Table 4 below highlights the key criteria and the section below detail each aspect of monitoring.

Table 4 – Subsurface Gas Monitoring Locations

Aspect	Parameter	Threshold (NSW EPA 2019)
Subsurface	Methane (CH4)	1 %v/v
	Carbon dioxide (CO2)	1.5%v/v above historical
	Carbon monoxide (CO)	5ppm (Limit of Instrument error)
	Hydrogen sulphide (H2S)	5ppm (Limit of Instrument error)
	Water Level	Depth to water exceed the total
Surface Emissions	Methane (CH4)	500ppm (0.05%v/v)
	Windspeed	10 km/h
Biofiltration Trench	Moisture (Hand Squeeze)	50-60% Moisture*
Enclosed Space Monitoring	Methane (CH4)	1%v/v
	Carbon dioxide (CO2)	1.5%v/v
	Carbon monoxide (CO)	5ppm (Limit of Instrument error)
	Hydrogen sulphide (H2S)	5ppm (Limit of Instrument error)

*Field test commonly used in composting, refers to requirements in the handbook for Biofiltration (NSW DECCW, 2010)

3.5 Subsurface Gas Monitoring (Perimeter LFG Wells)

3.5.1 Requirements

The perimeter well network was established to monitor the lateral migration of LFG from the landfill. Post installation of the BT these perimeter wells act as trigger wells to monitor the effectiveness of the gas mitigation measure. These perimeter wells are required to be operational to monitor the effectiveness of the trench and inform future landfill gas risk assessments if possible.

3.5.2 Objectives

The objective of the subsurface gas monitoring is to detect lateral migration of landfill gas across the biofiltration trench and measure the potential risk to off-site properties.

3.5.3 Monitoring Locations

Subsurface monitoring should be undertaken on all landfill gas monitoring wells for the Camide Landfill however the specific wells required to monitor conditions which may impact Stage 2 are outlined in Table 5 below. Monitoring locations are shown on Figure 2. Subsurface monitoring should be undertaken in accordance with NSW EPA *Environmental Guidelines: Solid Waste Landfill* (SWLG 2016).

Table 5 – Subsurface Gas Monitoring Locations

Well ID	Inside or Outside Trench
GM1	Outside
GM6	Outside
GM7	Outside
GM8	Outside
GM9	Outside
GM10	Outside
GM12	Outside
GM13	Outside
GM13A	Outside
GM14	Outside
GM15	Outside
GM15A	Outside
GM17	Outside
GM18	Outside
GM20	Outside
GM21	Inside**
GM22	Inside**
GM23	Outside
GM25	Outside
GM26	Outside
GM27	Outside
GM28	Inside**
GM29	Inside**
GM30	Outside
GM31	Outside
GM32	Outside
GM33	Outside
GM34	Outside
GM35	Outside
GM36	Outside
GM37	Outside
GM38	Outside

Well ID	Inside or Outside Trench
GM39	Outside
GM40	Outside
GM41	Outside
GM42	Outside
GM43	Outside / Background
GM44	Outside

'**' These wells are included in the monitoring program to provide data over time of the landfill gas conditions. They are not to be assessed against the threshold criteria for action due to their location on the inside of the biofiltration trench.

The condition of each LFG well should be noted on field forms and confirmation as operational or not for the purpose of LFG monitoring. In the event that a monitoring well becomes unsuitable for purpose then the replacement of the monitoring wells should be considered with respect to the overall coverage of the monitoring network.

3.5.4 Landfill gas analyser

Monitoring subsurface wells with a GA5000 LFG gas analyser (or equivalent) will be used to assess concentration of typical landfill gas constituents listed below in Table 6. The performance specification of the LFG analyser is presented in Table 6 below. The monitoring procedure for landfill gas well monitoring and bump test quality control requirements are provided in Appendix D.

Table 6 – Specification for handheld gas monitors

<table>
<tr><td rowspan="7">Range</td><td>CH_4</td><td colspan="3">0 - 70% to specification, 0-100% reading</td></tr>
<tr><td>CO_2</td><td colspan="3">0 - 40% to specification, 0-100% reading</td></tr>
<tr><td>O_2</td><td colspan="3">0 - 25%</td></tr>
<tr><td>CO</td><td colspan="3">0 – 200 ppm</td></tr>
<tr><td>H_2S</td><td colspan="3">0 – 200 ppm</td></tr>
<tr><td>Flow</td><td colspan="3">± 3.0 L/hr</td></tr>
<tr><td>Pressure</td><td colspan="3">± 4.0 mb</td></tr>
<tr><td rowspan="9">Typical accuracy</td><td>Gas</td><td>0-5 %v/v</td><td>5-15 %v/v</td><td>15 %- Full Scale (FS)</td></tr>
<tr><td>CH_4</td><td>±0.5%</td><td>±1.0%</td><td>±3.0%</td></tr>
<tr><td>CO_2</td><td>±0.5%</td><td>±1.0%</td><td>±3.0%</td></tr>
<tr><td>O_2</td><td>±1.0%</td><td>±1.0%</td><td>±1.0%</td></tr>
<tr><td colspan="2">Gas</td><td colspan="2">0-FS</td></tr>
<tr><td colspan="2">CO (0 – 500 ppm version)</td><td colspan="2">±10.0% FS</td></tr>
<tr><td colspan="2">CO (0 to 2000 ppm, H_2 compensated version)</td><td colspan="2">±10.0% of reading or 15 ppm, whichever is greater</td></tr>
<tr><td colspan="2">H_2S (0 - 200 ppm)</td><td colspan="2">±10.0% FS</td></tr>
</table>

Table 7 – Subsurface Gas Monitoring Parameters

Parameter	Unit of Measurement
Methane (CH_4)	%v/v
Carbon dioxide (CO_2)	%v/v
Carbon monoxide (CO)	ppm
Hydrogen sulphide (H_2S)	ppm
Oxygen (O_2)	%v/v
Flow rate	Litres/hour
Pressure	mb (equivalent to Hpa)
Water level	mbgl

Table 8 – Subsurface Gas Monitoring Threshold

Parameter	Threshold (NSW EPA 2019)
Methane (CH_4)	1 %v/v
Carbon dioxide (CO_2)	1.5%v/v above historical background levels or above the identified background level reported in GM43 (Appendix B)
Carbon monoxide (CO)	5ppm (Limit of Instrument error)
Hydrogen sulphide (H_2S)	5ppm (Limit of Instrument error)
Water Level	Depth to water exceed the total depth of the biofiltration trench

In the event that a threshold concentration is exceeded this will trigger additional investigation in the form of data interrogation (QA/QC) and potentially resampling of the location(s) that exceeded the threshold. The background levels for carbon dioxide have been taken from the post BT installation or the highest reported background CO2 concentration reported at GM43 as shown in the table in Appendix B. The initial screening assessment against adopted criteria provides the first pass investigation of the gas conditions. Following the screening assessment results are to be plotted against historical and assessed for increasing trends. In the event of an increasing trend for LFG constituent's further investigation into the risk this increasing concentration will have on the adjacent Stage 2 development and occupants.

The water level threshold is a secondary indicator of the BT effectiveness and should be considered with gas concentration reported at the same location. In the event that gas concentration has exceeded threshold criteria and show a reported increasing trend comparison of trench invert levels and standing water levels mAHD should be reviewed. More intensive monitoring of groundwater conditions may be required to determine the period that a potential pathway exists beneath the BT.

This increased risk (if identified) could result in a Tier 3 risk assessment with Vapour Intrusion (VI) modelling or fast tracking future contingency measures of implementing an active gas extraction system.

The timing of the monitoring and frequency of the monitoring events is outlined in Table 9.

Table 9 – Subsurface Gas Timing and Frequency

Action Item	Frequency	Timing
Subsurface gas monitoring	Quarterly	February, May, August, November

The quarterly monitoring should continue for a period of 24 months following the implementation of this EMP. After a period of 24 months a review of the LFG trend should indicate a stable or reducing concentration trend for both methane and carbon dioxide and have reported below 1%v/v and 1.5%v/v (or established background) respectively for a period of 24 months.

In the event that a well(s) is reported dry at total depth an investigation of well integrity and weekly investigation of water levels and gas concentrations should be undertaken to assess the risk of off-site migration and effectiveness of the BT. If the well(s) experiences extended dry conditions a landfill gas risks assessment should be undertaken to determine the effectiveness of the BT and reassess the potential LFG risk to surrounding land users.

3.5.5 Reporting

Quarterly and annual reporting requirements as outlined in Section 5.

If methane concentrations exceed 1.25 %v/v (25% of the lower explosive limit) in the perimeter wells during monitoring, reporting to EPA is required as outlined in Section 60(4) of the CLM Act requires a person who has a duty to report contamination to notify the NSW EPA.

In the event that corrective actions are required reporting in the form of individual reports detailing the investigations undertaken will be submitted to the Project Manager, Site Owner and passed on to the appropriate regulatory authorities and notification to adjacent property owners where required.

3.5.6 Corrective / Contingency Actions

If methane concentrations exceed 1%v/v and other LFG constituents (CO2, H2S, CO) report data that represents an increasing trend within perimeter monitoring wells. an increase in testing frequency should be undertaken. The initial response will be to increase testing frequency based on a review of the data by the Environmental Consultant. Indicatively the initial assessments would be daily until stabilised then return to quarterly.

If exceedances of landfill gases are persistent and an increasing concentration trend is established over a period of three consecutive monitoring events this will trigger an update to the 2017 LFG Risk Assessment for the Camide Landfill (DLA, 2017), Stage 1 LFG Risk Assessment (DBD 2019) and Stage 2 LFG Risk Assessment (DBD 2020) to address the potential risk to off-site receptors. A landfill gas risk assessment should be undertaken in accordance with Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases (NSW 2019) to determine additional LFG mitigation options.

Notifications will be made to the adjacent property owners/management if an update of the Stage 1 LFGRA and Stage 2 LFGRA is required (i.e. increasing concentrations trend and off-site service monitoring is required)

If a potential risk to off-site land uses is identified (via increasing trend in the perimeter monitoring wells over three consecutive events) in the routine monitoring or subsequent follow up monitoring of the off-site services, mitigation measures should be implemented in accordance with recommendations of the updated landfill gas risk assessment.

3.6 Surface Gas and Biofiltration Trench Monitoring

3.6.1 Requirements

The landfill has been capped to reduce water infiltration and vertical landfill gas migration. To ensure the ongoing performance of the cap, monitoring and maintenance is required.

3.6.2 Objectives

The objective of the surface gas monitoring is to demonstrate that the landfill cap is effective in controlling the emission of landfill gas and reducing infiltration. Monitoring the surface of the landfill should locate any point sources that may be emitting landfill gas.

3.6.3 Performance Indicators

- Methane concentrations do not exceed 500 ppm
- No large cracks or erosion noted
- Biofilter media in good condition, at correct moisture levels and has not subsided

3.6.4 Monitoring Requirements

Surface monitoring should be undertaken on the landfill in accordance with SWLG 2016 and EPL 123. Biofiltration trench monitoring should be undertaken in accordance with the handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system (NSW DECCW, 2010)

3.6.5 Surface and utility pit gas analyser

Surface gas monitoring should be undertaken with a device with a detection sensitivity for methane of less than 100 ppm. An RKI Eagle 2 or TDL 500 instrument (or equivalent) is the preferred instrument with the required detection limit. Preferred instrument specification is summarised in Table 10 and the units of measurements and threshold for further investigation are outlined in Table 11. The monitoring procedure for surface walkover is outlined below and the bump test requirements are provided in Appendix D.

Table 10 – Surface gas analyser specification

Item	Range
Response Time, T90	CH4 - 4.5 seconds T10 standards: 2 seconds with suction rod T90: 6 seconds with suction rod T10: < 3.5 seconds
Gases Measured	CH4 by laser spectroscopy
Range	CH4 - 0-10,000 ppm and 0 ppm to 100% gas volume
ATEX	II 2G Ex ib IIB T4
CE	94/9/CE directive dated March 23rd 1994

During the surface gas and biofiltration trench walkover the wind conditions should be gathered using a handheld anemometer and recorded frequently on field notes.

Table 11 – Surface Gas Monitoring Parameters and Threshold

Parameter	Unit of Measurement	Threshold (NSW 2019)
Methane (CH_4)	ppm or %v/v	500ppm (0.05%v/v)
Windspeed	km/h	10 km/h
Moisture (Hand Squeeze)	-	50-60% Moisture*

*Hand squeeze methodology is not a threshold regulated in the NSW EPA 2019 guidelines or in the biofiltration handbook (DECCW 2010). This is a field test used in composting to easily determine moisture content of a similar media to the material present in the biofiltration trench.

The criteria for rainfall should be considered and noted if rainfall occurs prior to the surface emissions investigation. Although these are recommended values, they are not always achievable in period of dropping barometric pressure and need to be considered during the reporting phases. The timing of the monitoring and frequency of the monitoring events is outlined in Table 12.

Table 12 – Surface Emissions Timing and Frequency

Action Item	Frequency	Timing
Surface gas monitoring	Quarterly	February, May, August, November

3.6.6 Surface Walkover Monitoring Procedure

Methane should be tested in the atmosphere 50mm above the landfill surface in areas with intermediate or final cover/capping. Testing should be conducted in a grid pattern across the landfill surface at 25-metre spacings. Depressions in the cover material, or surface fissures away from the sampling grid, should also be investigated. The monitoring should be performed on calm days (winds below 10 kilometres/hour) and preferably during periods of relatively low and stable atmospheric pressure (e.g. less than 101.3 kPa). The procedure above is based on the surface emissions monitoring section of '*Environmental Guidelines: Solid Waste Landfill*' 2016.

3.6.7 Biofiltration Monitoring and Management

The following procedure for management and monitoring of the biofiltration trench has been taken from the NSW Department of Environment, Climate Change and Water 'Handbook *for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*' (March 2010). Monitoring should occur quarterly plus after significant rainfall events e.g. > 20 mm of rainfall. Monitoring should also occur more regularly during drought to check the moisture levels of the biofilter media. Regular monitoring should include:

A regular inspection of the biofilter to assess the following:

- odours from the biofilter.
- condition of the biofilter media including settlement, formation of a surface crust, scouring, and / or desiccation of the media.
- moisture content of the upper layers of the biofilter media.
- ponding of water on the surface of the biofilter media.
- condition of vegetation growing on the biofilter surface, including weeds / unwanted vegetation; and
- condition of surface water management measures.

Monitoring of the following:

- composition and flow of landfill gas from the passive drainage system(s) to the biofilter(s) emissions / flux from the surface of the biofilter (methane and carbon dioxide).
- moisture content of the upper layers of the biofilter media, particularly in a dry / hot climate / drought condition; and
- depth of drainage water in the gas distribution layer / biofilter media.

The hand squeezed method for moisture determination is commonly used in the organics processing industry.

The simple method is as follows:

- Take a tennis ball sized sample of the organic material in your hand. Be aware of sharp objects.
- Squeeze the organic material like a firm handshake.
- Open your hand and inspect the organic material.

Results - If free water is released the organic material is too wet. If the organic material crumbles and falls apart it is too dry. If the organic material stays together the moisture content is correct (50-60%).

Maintenance of a passive gas drainage and biofiltration system is dependent on the results of monitoring and may involve the following:

- drainage of water from the aggregate gas distribution layer if the biofilter is in box / above ground or lined
- maintaining vegetation growth on the biofilter media e.g. mowing, trimming, weed removal and disposal
- topping up the media to overcome media settlement, if required

- turn / fork upper layer of media, as required, when / if a crust forms
- addition of a wetting agent to the biofilter media (upper layers), if found to not be holding water
- replacement of the upper layers of the biofilter media, if the crust too hard to break up and / or a wetting agent does not work.

Replacement of the biofilter media, if required, as determined by monitoring. Indicators may include:

- reduced biofilter performance i.e. methane oxidation rate
- large / excessive settlement, which may adversely affect media porosity and subsequently gas and water movement through the biofilter media
- ponding of water on the surface of the biofilter, which may indicate clogging and
- clogging of the biofilter media, which may be due to settlement, microbial growth or EPS formation, and which may adversely affect media porosity and subsequently gas and water movement through the biofilter media.

The biofilter media should be pre-mixed off site (at the source / producer of the materials) and delivered to site immediately prior to placement in the biofilter, to minimise construction time and storage on site, and consequently minimise potential odours or contamination of stormwater runoff.

Excavated waste should be disposed of immediately after excavation at an approved waste disposal site. Landfilled waste should not be stockpiled on the site.

3.6.8 Reporting

Quarterly and annual reporting requirements as outlined in Section 5.

In the event that corrective actions are required reporting of in the form of individual reports detailing the investigations undertaken will be submitted to the Project Manager, Site Owner and passed on to the appropriate regulatory authorities where required.

3.6.9 Corrective Actions

If methane concentrations exceed 500 ppm corrective action is required. Initial response is to complete additional walkovers with increased frequency (initially daily until conditions report below the adopted criteria). Flux (emissions) monitoring would then be conducted to quantify emission rates and help identify the extent of gas loss through the biofiltration trench.

The increase in methane concentrations above 500ppm at the surface may indicate a failure in the biofiltration media. After initial investigations the following actions, guided by the findings and observations of the biofiltration trench may include but not be limited to:

- Repairing or replacing cover material (spent biofiltration media).
- Repairing or replacing underlying porous material (clear any blockages).
- Adjustment or installation of landfill gas controls to extract and treat gas.

3.7 Gas Accumulation in Enclosed Structures

3.7.1 Requirements

Monitoring of the potential for LFG to accumulate in subsurface pits and enclosures (i.e. stormwater pits, telecommunication, power pits, irrigation pits etc) on or near the landfill to ensure gas is not accumulating to dangerous levels.

Landfill gas is primarily made up of methane, carbon dioxide, carbon monoxide and hydrogen sulphide and must not accumulate in buildings. Methane is explosive in the range of 5% to 15% (volume/volume), and landfill gas can be an asphyxiant in enclosed spaces.

3.7.2 Objectives

The objective of the subsurface structure gas monitoring is to monitor gas build up which may have the potential to be explosive risk on site and have the potential to migrate off-site to surrounding land users.

3.7.3 Performance Indicators

- Methane concentrations do not exceed 1 %v/v (NSW 2019)

3.7.4 Monitoring Requirements

Gas accumulation monitoring in enclosed structures monitoring should be undertaken in accordance with SWLG 2016 and the procedures outlined in Appendix D. Monitor potential gas accumulation in subsurface structures which do not have preventative measures installed. These monitoring points should include the stormwater pits which run to the north across into Stage 1 from the landfill site as shown on Figure 3 and Table 13 below. The monitoring procedure for landfill gas monitoring of enclosed structure and bump test quality control requirements are provided in Appendix D.

Table 13 – Enclosed structures identified for monitoring

Enclosed Structure ID	On-site Structure
SW1	On-site (Inside BT)
SW2	On-site (Outside BT)

The stormwater pits collect surface water from the landfill capping and direct waters into the initial collection pit (SW1) which is located beneath the surface on the inside of the BT. This pit is connected to the next pit (SW2) which is located in the detention basin to the north and then connects into a stormwater management system which moves to the north along the western boundary of the Stage 1 property to discharge near Burley Road.

It should be noted that the future plans indicate an adjacent road to the west of the landfill which will include services including, but not limited to, stormwater. These future locations should be included in updated versions of the EMP or noted and incorporated into the monitoring schedule.

3.7.5 Landfill gas analyser

Monitoring of utility pits with an LFG gas analyser (GA5000 or equivalent) will be used to assess concentration of typical landfill gas constituents. The performance specification of the LFG analyser is presented below in Table 14 and the units of measurement are provided in Table 15. The threshold for LFG gas concentrations in enclosed structures is presented in Table 16 with other gases to be recorded for information rather than a threshold for action.

Table 14 – Specification for handheld gas monitors

Range	CH_4	0 - 70% to specification, 0-100% reading		
	CO_2	0 - 40% to specification, 0-100% reading		
	O_2	0 - 25%		
	CO	0 – 200 ppm		
	H_2S	0 – 200 ppm		
	Flow	± 3.0 L/hr		
	Pressure	± 4.0 mb		
Typical accuracy	Gas	0-5 %v/v	5-15 %v/v	15 %- Full Scale (FS)
	CH_4	±0.5%	±1.0%	±3.0%

	CO_2	±0.5%	±1.0%	±3.0%
	O_2	±1.0%	±1.0%	±1.0%
	Gas		0-FS	
	CO (0 – 500 ppm version)		±10.0% FS	
	CO (0 to 2000 ppm, H_2 compensated version)		±10.0% of reading or 15 ppm, whichever is greater	
	H_2S (0 - 200 ppm)		±10.0% FS	

Table 15 – Enclosed Structure Gas Monitoring Parameters

Parameter	Unit of Measurement
Methane (CH_4)	%v/v
Carbon dioxide (CO_2)	%v/v
Carbon monoxide (CO)	ppm
Hydrogen sulphide (H_2S)	ppm
Oxygen (O_2)	%v/v

Table 16 – Enclosed Structure Gas Monitoring Threshold

Parameter	Threshold (NSW 2019)
Methane (CH_4)	1%v/v
Carbon dioxide (CO_2)	1.5%v/v
Carbon monoxide (CO)	5ppm (Limit of Instrument error)
Hydrogen sulphide (H_2S)	5ppm (Limit of Instrument error)

In the event that a threshold concentration is exceeded this will trigger additional investigation in the form of an initial data interrogation and resampling of the location(s) that exceeded the threshold. The timing of the monitoring and frequency of the monitoring events is outlined in Table 17.

Table 17 – Enclosed Gas Timing and Frequency

Action Item	Frequency	Timing
Enclosed structure gas monitoring	Quarterly	February, May, August, November

3.7.6 Reporting

Quarterly and annual reporting requirements as outlined in Section 5.

If methane concentrations exceed 1.25 %v/v (25% of the lower explosive level) in the enclosed structure during monitoring, reporting to EPA is required as outlined in Section 60(4) of the CLM Act requires a person who has a duty to report contamination to notify the NSW EPA.

In the event that corrective actions are required reporting of in the form of individual reports detailing the investigations undertaken will be submitted to the Project Manager, Site Owner and passed on to the appropriate regulatory authorities and adjacent property owners where required.

3.7.7 Corrective Actions

If methane concentrations exceed the adopted threshold criteria within enclosed structures, an increase in testing frequency should be undertaken. The increase in frequency should be determined based on a review of the data by the Environmental Consultant. Indicatively the initial assessments would be daily until stabilised then return to quarterly.

If exceedances of landfill gases are persistent and an increasing concentration trend is established there is a potential risk to off-site receptors. A landfill gas risk assessment should be undertaken in accordance with *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases (NSW 2019)* to determine additional LFG mitigation options.

If a potential risk to offsite land uses is identified, mitigation measures should be implemented in accordance with recommendations of and updated landfill gas risk assessment.

These may include application of proprietary products (sealants i.e Sikaflex) that seal the inside of pits alterations to the pit lids (i.e. fireproof mesh) and or ventilation.

3.8 Data Collection

To ensure the data collected is of sufficient quality and can be relied upon the works should be undertaken by a suitably qualified person. The methodologies for collection of data should be undertaken in accordance with SWLG 2016 and industry best practice.

All equipment used for the collection of data should have appropriate detection levels and accuracy for the monitoring undertaken. Calibration certificates and other quality assurance and quality control procedures undertaken should be documented and discussed in the annual report.

In preparation for each monitoring event weather conditions including rainfall, windspeed and barometric conditions before during and after each monitoring event should be downloaded from the Bureau of Meteorology (BOM). Specifically, BOM data should be collected from the nearest weather station (Badgerys Creek) that collects this data at the required frequency.

The required field forms to complete the field data collection are provided in Appendix C.

4 ROLES AND RESPONSIBILTIES

The roles and responsibilities for execution of the EMP is outlined in Table 18 below.

Table 18 – Roles and Responsibilities for the EMP

Responsible party	Task
CSR Building Products Limited (Site Owner)	Implementation of EMP including the following: ▪ Maintains ultimate responsibility for implementation of the EMP. ▪ Acknowledge that the EMP is an important document for the safe operation and management of the Site. Make an executive manager responsible for implementation. ▪ Appoint a project manager and an environmental consultant, to perform the necessary tasks as specified in the EMP. ▪ Provide this EMP to purchasers, tenants and contractors, or delegate this role to the owner's solicitor or agent. ▪ Ensure that potential future purchasers of the former Camide Landfill Site are aware of remediation works that have been undertaken and the need to develop their own ongoing management measures to ensure that the integrity of the gas mitigation system is not compromised and that there is no unacceptable risk to building occupants as a result of Hazardous Ground Gas (HGG) intrusion. ▪ Review plans for future works and associated method statements as required, to check that adequate environmental management measures are incorporated into the planning and are aligned with this EMP. ▪ Ensure monitoring works are being conducted and reported to the Site Auditor (if required) in compliance with the requirements included in this EMP. ▪ Maintenance of any site controls or protection measures which form part of this EMP. ▪ Maintenance of the document so that it continues to reflect the site conditions, best practice occupational health and safety recommendations and any changes to the regulatory framework ▪ Maintenance of the document so that it continues to reflect the site conditions, best practice occupational health and safety recommendations and any changes to the regulatory framework ▪ Submit reports to the appropriate regulatory authority or adjacent site owners where required. ▪ Notify the NSW EPA when required as outlined in Section 60(4) of the CLM Act.
Project Manager	▪ Provide competent and suitably qualified personnel for the investigation and/or monitoring of environmental matters. ▪ Liaise with the site owner on environmental management issues. ▪ Coordinate the activities of specialist sub-consultants, testing sub-contractors and project personnel with environmental assessment/monitoring responsibilities. ▪ Assess the suitability of specialist sub-consultants, testing organisations to carry out environmental assessment monitoring/responsibilities.
Environmental Consultant	▪ Undertake monitoring of landfill gas as outlined in this EMP to assess the integrity of the cap and gas mitigation system to validate that there is no unacceptable risk to site users as a result of HGG. ▪ Ensure QA/QC procedures according to the Australian Standards and NEPC guideline requirements are employed. ▪ The Environmental consultant will be complying with statutory requirements applicable to their work, reporting any incidents that may result health or environmental risk arising in connection with their work, and provide monitoring data to the Project Manager and Site Owner in a timely manner.

Responsible party	Task
	▪ Provide assessment reports the with recommendations, as required, based upon the results obtained during investigation / monitoring works.
Employees and Caretakers of the former Camide Landfill	▪ Notify the site owner or its representative of any situation which they consider may represent a potential health risk (such as unexpected finds). ▪ Respond to the directions of the site owner, project manager or other person with delegated authority with respect to environmental matters. ▪ Do not undertake any works (without the permission of the site owner) which may potentially cause environmental impacts (such as disturbance of the landfill capping layer).
Contractors and maintenance workers	▪ Subcontractors employed during any future works will have contractual obligations placed on them to comply with the EMP. As part of the tender briefing process, potential subcontractors should be made aware of their obligations to minimise the environmental impacts of their works. ▪ Subcontractors and suppliers will be required to attend inductions where specific environmental issues are addressed if deemed appropriate. They will be made aware of their requirements to adhere to the EMP in the induction program. ▪ Ensure that risks have been assessed and suitable control measures implemented where the site cap will be disturbed. ▪ Ensure the gas mitigation system and capping are protected during future works. ▪ Ensure that operatives are briefed on the presence of contaminated material below the cap and the potential for landfill gas in trenches, excavations, enclosed voids or within the gas mitigation system.

4.1 Enforcement of the EMP

The responsible party for execution of the EMP will be the site owner (currently CSR Building Products Limited) who will ensure that the works are undertaken and where required threshold exceedances acted upon. In addition to this responsibility the following legal enforceability is outlined in the sale of contract as detailed below.

"Pursuant to the sale contracts between CSR Building Products Limited and the owners of Stage 1 (DP1259616 Lot 202 and DP1264857 Lot 301) and Stage 2 (DP1214912 Lot 103). Trust in respect of the sale of Lots 101 & 102, 327 – 335 Burley Road, Horsley Park CSR Building Products Limited is:

1. responsible to perform any continuing obligations (including under the EMP) which relate to Lots 101, 102 (Stage1 Development) and 103 (Stage 2 Development), 327 – 335 Burley Road, Horsley Park These lots are currently identified in six maps as DP1259616 Lot 202, DP1264857 Lot 301 and DP1214912 Lot 103 respectively.

2. entitled to gain access to Lots 101, 102 & 103, 327 – 335 Burley Road, Horsley Park to enable it to discharge those obligations.

CSR Building Products Limited's rights and obligations continue until its obligations are discharged and, for clarity, do not end with settlement of its sale of Lots 101, 102 & 103, 327 – 335 Burley Road, Horsley Park."

4.2 Currency of the EMP

The site owner is responsible for the site conditions and management of the former Camide landfill to ensure that the EMP is executed and risk to surrounding land users does not exist. The validity of the EMP is to an extent based on the site conditions remaining stable as a closed landfill with regular monitoring and maintenance.

In the event that the site conditions change (i.e. additional development on the landfill) or conditions on adjacent and surrounding sites change (i.e. additional underground services, roads etc) there may be a requirement to assess these changes in a LFG risk assessment. Any minor changes that occur should be reported in the annual report and may not require a complete update of the risk assessment, however if considered significant by the Environmental Consultant a recommendation to review the pathway in a formal risk assessment should be made.

4.2.1 Perimeter Monitoring Network

The suitability of the perimeter monitoring network should be reviewed annually to ensure that the objectives of the EMP are being met. Consideration should be given to replace lost/destroyed wells to ensure the currency of the EMP and adequacy of the perimeter monitoring network to meet the minimum requirements of the intent of this EMP. This should be undertaken during the annual review as outlined in Section 5.

5 REPORTING/REVIEW

5.1 General

Quarterly monitoring will be reported in a summary letter outlining the works completed, weather conditions and a summary of exceedances. The report will also include tabulated data and compared to the relevant threshold criteria and a figure of the surface walkover survey. The quarterly report will be issued to the Site Owner who should act on any exceedances (if required).

Annual reporting of landfill gas results should be undertaken and submitted to the Site Owner for review and action where required. This report should include presentation of results over the previous 12 months. Any trends or significant results should be highlighted and explained. A review of the methodologies employed, and quality of the data collected should be presented within the annual report. The annual reporting should include an assessment of the risks present at the site boundary as per assessment procedures set out in NSW EPA (2019). Ongoing assessment of the Gas Characterisation Score as measured at the boundary will be utilised as an assessment of potential risk to adjacent properties and site users. Annual review of the monitoring program with regards to site configuration (i.e. development) should be documented in this reporting to capture any significant changes to the site configuration.

Technical reports must be prepared and signed by appropriately qualified and experienced persons. The NSW EPA recognises the CEnvP (SC) and CPSS CSAM certifications as providing a thorough process for certifying contaminated land consultants to an acceptable minimum standard of competency.

5.2 Incident Reporting

The EPA shall be notified of any incident that represents a threat to the environment. If methane is detected at concentrations above 1 % (volume/volume), the occupier must notify the EPA promptly. Within 14 days of this notification, the owner of the site must submit a plan to the EPA for further investigation and/or remediation of the elevated gas levels.

If an acute or explosive risk from ground gases is suspected then immediate action, including contacting relevant emergency services, should be taken to address the risk. It is possible that during ground gas investigations, the presence of gas that is positively or tentatively identified as originating from leaks in gas mains or other services may be detected. In these circumstances the service provider and, if appropriate, the emergency services (NSW Police, NSW Fire and Rescue) should be notified immediately.

5.3 Emergency Contacts

In the event of an incident which has resulted in an acute risk to human health or explosion then dial triple zero to request the required assistance. For incidents that are not considered to put human health in imminent danger then the Project Manager and/or the Site Owner should be notified. Details of the Project Manager and Site Owner should be provided during the site induction.

The list of contacts in Table 18 below outlines the contact details which may be called upon or require notification in an emergency situation.

Table 19 – Emergency Contacts List

Service	Number
All life threatening emergencies	000 (triple zero)
NSW State Emergency Services (SES) – emergency in floods and storms	132 500
NSW Police Assistance – Non-life-threatening calls	131 444
Inner West Council – Emergency after hours:	02 9392 5000
Ausgrid – Power failure, power lines down	13 13 88
Jemena Gas	13 19 09

Service	Number
Sydney Water	13 20 90
Telstra	13 22 03
Optus	13 13 44

5.4 Current and Future Site Conditions

The landfill site is currently a dormant site with no development presently within the allotment with the exception of stormwater bunds, detention pond and associated pits and pipes. The surface capping and access roads are at final leaves and are currently unsealed.

There are no proposed plans to develop the former Camide Landfill site with the only potential change in conditions to improve the gas management or in the event that gas migration measures are required to be implemented (i.e. active LFG extraction system.

In the event that future development is proposed or an active gas extraction system was proposed the works would likely have already triggered an assessment of LFG risk for the risk to on-site users.

5.5 Review

Annually the Environmental Consultant shall review the environmental performance of the site (to be included in the annual report). The review should:

- Analyse the monitoring results and compare them against the relevant statutory requirements, limits or performance measures/criteria and monitoring results of previous years.
- Identify any non-compliance over the last year and describe what actions were or are being taken to ensure compliance.
- Identify any trends in the monitoring data.
- Outline any actions that are required to be implemented to improve environmental performance.
- Identify any additional activities on-site and adjacent to site that may impact LFG migration pathways.
- Confirm or update the previous Characteristic Situation (CS) based on the update Gas Screening Values.

If actions or conditions arise that have altered the conditions of the site, then an additional LFG risk assessment should be completed to assess the risk to surrounding off-site users. In the event that the results of an updated LFGRA require additional LFG mitigation measures (i.e. active extraction) then the EMP should be reviewed and updated to reflect the significantly changes site conditions.

In undertaking a revision of the current EMP the following must occur:

- The site owner must inform the adjacent site owners of the change in conditions.
- If required notify the relevant authorities for environmental and planning changes (including but not limited to NSW EPA and Council).

6 REFERENCES

Biogas Systems Australia (BSA) 2019 – Landfill Gas Risk Assessment, Stage 1 Horsley Park NSW.

Biogas Systems Australia (BSA) 2019 – Environmental Management Plan Landfill, Horsley Park NSW (Stage 1).

Department of Environment, Climate Change and Water (DECCW, 2009) *Handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*.

Dever, S (2009) *Passive Drainage and Biofiltration of Landfill Gas: Behaviour and Performance in a Temperate Climate.* A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy. School of Civil and Environmental Engineering UNSW Sydney Australia.

Department of Environment, Climate Change and Water (DECC) 'Handbook *for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*' (March 2010)

DBD Environmental (2020) - *Landfill Gas Risk Assessment, Stage 2, 327 – 335 Burley Road, Horsley Park NSW*

DLA (2013) *Phase 1 Preliminary Environmental Site Assessment, Lot 1 in DP 106143, CSR Building Products, 327 – 335 Burley Road, Horsley Park.* DLA Environmental.

DLA (2013) *Phase 2 Detailed Environmental Site Assessment, Lot 1 in DP 106143, CSR Building Products, 327 – 335 Burley Road, Horsley Park*. DLA Environmental.

DLA (2014) *Remediation Action Plan, 327 – 335 Burley Road, Horsley Park NSW 2175.* DLA Environmental.

DLA (2018) *Transpiration Area Assessment, 327 – 335 Burley Road, Horsley Park NSW 2175*. DLA Environmental (ERM).

DLA (2018e) V*alidation Report, 327 – 335 Burley Road, Horsley Park NSW 2175*. DLA Environmental (ERM).

DLA (2017) *Former Camide Landfill - Landfill Gas Risk Assessment, 327 – 335 Burley Road, Horsley Park NSW 2175.*

DLA (2017) *Former Camide Landfill – Validation Sampling, Analysis and Quality Plan, 327 – 335 Burley Road, Horsley Park NSW 2175.* DLA Environmental (Pacific Environment).

EGIS Consulting Australia (1999) *'Landfill Closure Plan for Camide Landfill, Horsley Park'.*

ERM (2019) *Landfill Gas Data Summary – Stage 1, Horsley Park NSW.*

ERM (2019) *Landfill Well Cover Letter.*

NEPC (1999) *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013* (No.1). National Environment Protection Council.

NSW EPA (2017) *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme 3rd edition.* New South Wales Environment Protection Authority.

New South Wales Environmental Protection Agency (2019), '*Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases*'.

VIC EPA Publication 1684, (February 2018), *Landfill gas fugitive emissions monitoring guideline.*

New South Wales Environmental Protection Agency (2016), '*Environmental Guidelines: Solid Waste Landfill*'.

Appendix A: FIGURES

LEGEND

- Stage 1
- Stage 2A
- Stage 2B
- Stage 2C
- Stage 3

Site Boundary

- Former Carmide Landfill

0 0.1 0.2 km

N

Job No. 0103 Revision No: 2

Project: CSR Horsley Park

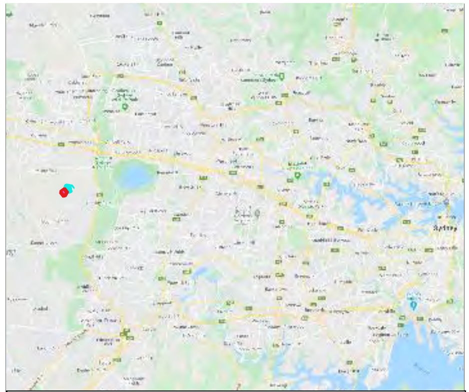
Aerial Image Source: Google December 2018

Drawn by: MB Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 1 - Site Location Plan

biogas systems



LEGEND

Site Boundary

Former Carmide Landfill

Trench

Existing Trench

New Trench

Monitoring Wells

LFG

New LFG Location

Damaged / Decommissioned

0 10 20 30 40 50 m

N

Job No. 0103	Revision No: 2
Project: CSR Horsley Park	
Aerial Image Source: Google December 2018	
Drawn by: MB	Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 2 - LFG Well Locations

biogas systems

LEGEND

Former Camide Landfill

Existing Biofiltration Trench

New Biofiltration Trench

Extent of Waste

SW Pits

Monitoring Wells

LFG

New LFG Location

Damaged / Decommissioned

0 10 20 30 40 50 m

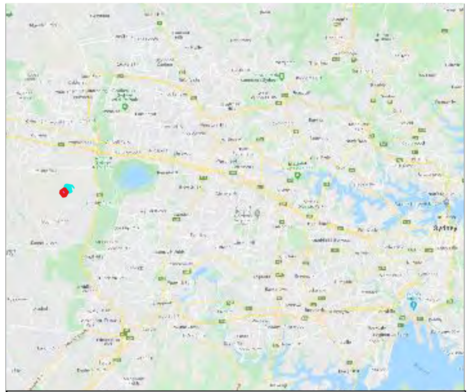
N

Job No. 0103	Revision No: 3
Project: CSR Horsley Park	
Aerial Image Source: Google December 2018	
Drawn by: MB	Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 3 - Site Stormwater Pit Location

biogas systems



LEGEND

Site Boundary

Former Carmide Landfill

Trench

Existing Trench

New Trench

Monitoring Wells

Background Location

0 50 100 150 200 m

N

Job No. 0103	Revision No: 1
Project: CSR Horsley Park	
Aerial Image Source: Google December 2018	
Drawn by: MB	Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 4 - Background LFG Well Location

biogas systems

Appendix B: CARBON DIOXIDE BACKGROUND CONCENTRATIONS TABLE

Table 1
Background Concentrations for Methane and Carbon Dioxide (Sept 2020)

Location	Stabilised Background Concentrations (1st September 2020)		Well Location inside /outside biofiltration trench	Well Location around the landfill
	CH_4	CO_2		
ID number	% v/v	% v/v		
GM1	0.0	6.4	Outside	EASTERN
GM6	0.0	6.4	Outside	WEST
GM7	0.0	6.4	Outside	
GM8	0.0	6.4	Outside	
GM9	0.0	6.4	Outside	
GM10	0.0	6.4	Outside	
GM12	0.0	6.4	Outside	NORTHERN
GM13	0.0	6.4	Outside	
GM13A	0.0	6.4	Outside	
GM14	0.0	6.4	Outside	
GM15	0.0	6.4	Outside	
GM15A	0.0	6.4	Outside	
GM17	0.0	9.5	Outside	
GM18	0.0	6.4	Outside	
GM20	0.6	10.3	Outside	EASTERN
GM21	1.0	6.4	Inside*	
GM22	40.9	21.1	Inside*	
GM23	0.0	9.8	Outside	
GM25	0.0	14.4	Outside	
GM26	0.0	17.2	Outside	
GM27	0.3	16.2	Outside	
GM28	25.3	19.7	Inside*	SOUTHERN
GM29	0.1	12.9	Inside*	
GM30	0.0	6.4	Outside	
GM31	0.1	12.5	Outside	
GM32	0.0	6.4	Outside	
GM33	0.2	6.4	Outside	EASTERN
GM34	0.1	6.4	Outside	
GM35	0.0	6.4	Outside	
GM36	0.0	6.4	Outside	
GM37	0.0	6.4	Outside	
GM38	0.0	6.4	Outside	SOUTHERN
GM39	0.0	6.4	Outside	
GM40	0.0	6.4	Outside	
GM41	0.0	6.4	Outside	
GM42	0.0	6.4	Outside	
GM43	0.0	4.9	Outside	Background
GM44	0.0	6.4	Outside	EASTERN
LG8	0.0	6.4	Outside	WESTERN
LG9	0.0	6.4	Outside	
LG10	0.0	6.4	Outside	

Note: The results are taken from ERM Raw data provided for review and the previously reported VGT results for wells GM6-GM10

*'These well locations are located on the inside of the BT in close proximity to the waste and are only monitored to assist in future interpretations rather than threshold criteria

Appendix C: TEMPLATE FIELD FORMS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Site:			Occupier:		Licence/notice number:				Date:		Start time:			Finish time:		
2	Monitoring personnel:					Monitoring equipment:				Date of last calibration:				Bump test:			
3	Atmospheric pressure at start (mb):					Rising or falling: Stable/Falling				Weather and ground conditions:							
4					Peak (% v/v)			Stabilised (% v/v)			Stabilised (ppm)		Stabilised (% v/v)				
5	ID	Start time	Atmospheric pressure (mb)	Relative pressure (mb)	CH4	CO2	Min O2 (% v/v)	CH4	CO2	O2	CO	H2S	Bal	Aspiration time when stabilised readings were taken, add note if not stabilised	Flow (l/h)	Depth to water (mBGL)	Comments e.g. bore condition (sealed, unsealed, CH4 CO2 CH4 CO2 O2 Balance desiccated bentonite etc)
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	

Instrument				
Serial number				
Next manfacturer's cal due				
Gas mixture	100 ppm isobutylene and 2.5 % v/v methane balance nitrogen			

Date	**Instrument zeroed** Y/N	**Result** Within limits (+/- 5%)	**Pump, filters and battery check**	**Signature**

Date	Instrument zeroed Y/N	Result Within limits (+/- 5%)	Pump, filters and battery check	Signature

Appendix D: MONITORING PROCEDURES

LANDFILL GAS WELL MONITORING PROCEDURE

The following provides a detailed repeatable procedure for recording gases from monitoring wells in Australia and has been adapted as follows:

1. Prior to arrival at the site, monitoring personnel should complete a brief desktop review of the locations to be monitored to develop an understanding of the number and types of locations to be monitored and the likely time required to complete the monitoring.

2. Before starting monitoring, turn the instruments on in a location unlikely to be affected by LFG (or other air contaminants). Confirm that the instruments give readings that are considered likely for these conditions (generally <0.1% methane, <0.1% carbon dioxide, 21.0% oxygen, 79% balance (nitrogen) for an extractive landfill gas analyser and 0.0 ppm for a low-concentration methane detector). Bump test the instrument and recalibrate if outside tolerances of +/- 5%.

3. Record background information, including site identification, start time of the monitoring round, date, prevailing weather and recent weather conditions, current ground conditions, instruments used (and serial numbers), person completing monitoring and so on. During the monitoring any observations of significance (like changes in weather) will also be noted.

4. Visually inspect the monitoring well and, without breaking the gastight seal, note any issues or deficiencies that may prevent representative data being obtained (such as landfill gas odours, unsealed bores, screened sections of pipework above ground level, failed bentonite seal or an open gas tap). Note whether the bore is locked and secure.

5. Connect the sample tubing to the monitoring well and record the differential pressure, including whether the pressure is positive (+) or negative (–). This must be done in a manner that prevents the pressure in the well, being altered prior to measurement. If the well is fitted with a gas sampling tap, connect the sample tubing to the instrument and the gas sampling tap prior to opening the tap. If the well is fitted with a quick-connect coupling, connect the sample tubing to the instrument before being fitted to the bore quick-connect fitting. Record the differential pressure then the well flow in litres per hour. Flow and pressure must be recorded before starting the instrument pump or measuring gas concentrations as the pump may remove any accumulated gas in the well headspace leading to a false negative.

6. Record the atmospheric pressure. Turn on the pump and record the peak and stabilised concentrations of methane and carbon dioxide and other gases as required that may be required.

7. If the monitored gas concentrations have not reached a stabilised concentration (stable gas concentration (±0.3 %v/v) after monitoring for a short period (3 minutes) after three minutes of continuous sampling record the final gas concentrations, along with the direction and rate of change in concentration (rapidly or slowly increasing or decreasing) and note them as non-stabilised final readings.

8. If very high LFG concentrations are recorded on the instrument (>30 %v/v methane and/or 30 %v/v carbon dioxide), then monitoring of the well should be extended beyond three minutes to try to further determine the persistence of the gas detected within the well.

9. Once the peak and stabilised concentrations have been recorded, fully close the gas sampling tap (if applicable) and disconnect the sample tubing from the gas tap.

10. All recording of variables will be carried out using the GA5000's in-built logging software combined with proprietary software. This reduces risk of transcription error and as logging software eliminates the need for pencil and paper it means that delays caused by inclement weather are reduced.

GAS IN ENCOLOSED STRUCTURES AND SERVICE PIT PROCEDURE

The Victorian EPA developed the '*Landfill Gas Fugitive Emissions Monitoring Guidelines*', Publication 1684 (February 2018) provides the most comprehensive protocol for recording gases from utility and service pits in Australia and has been adapted as follows:

1. Prior to arrival at the site, monitoring personnel should complete a brief desktop review of the locations to be monitored to develop an understanding of the number and types of locations to be monitored and the likely time required to complete the monitoring. The instrument should also be checked for calibration information and bump checked with a certified gas mixture.

2. Before starting monitoring, turn the instrument on in a location unlikely to be affected by landfill gas (or other air contaminants where possible). Confirm the instrument is giving readings considered likely for the conditions. Note that the global background methane concentration is ~ 1.8 ppm (Myhre et al, 2013). If using an FID or Eagle, it can be influenced by emissions from vehicles and industry/commerce. If a busy road or active industrial or commercial emissions are observed nearby, note their effect on the readings of the RKI Eagle before commencing monitoring of the subsurface services.

3. Note background information, including site identification, start time of the monitoring round, date, atmospheric pressure, prevailing weather and recent weather conditions, current ground conditions, instruments used (calibration and serial numbers), person completing monitoring and so on. During monitoring any observations of significance (like changes in weather) should be noted.

4. Record the type and location of the first monitoring location. It is often useful to record the address (street number and name) of the monitoring location and/or GPS coordinates.

5. Visually inspect the location and note any issues or deficiencies with the location that may prevent representative landfill gas monitoring data being obtained (this might include landfill gas odours, unsealed service or inaccessible service).

6. Record factors that may influence the method of monitoring, and that may be useful to record, include:

    - dimensions of the subsurface service
    - sealing of the subsurface service
    - accessibility of the subsurface service
    - any known landfill gas dissipation measures
    - weight of access panels or covers into subsurface services
    - locking mechanisms on access panels or covers (if applicable).

7. Turn on the instrument and insert the probe into the metal grate. Attempt to monitor across the lateral and vertical profile of the service to account for the density of methane which may be venting from different areas inside the service pit.

8. Record the highest concentration of methane and approximately stable concentration should this occur. Due to the resolution of the instrument used and the mixing of gases in the sub-surface services with air, the ppm readings rarely stabilise to a set number but will tend to stay within a range, this range should be recorded. Particular attention will be focused on the pipe inlet (preferential lateral migration) and the valve pit walls/box itself (to assess LFG moving directly from the nearby soil/fill in contact or close to the box).

BUMP TEST PROCEDURE

To check the accuracy of the in-house or rented gas analysers, the Field Technicians conduct calibration checks according to the following approach:

1. Functional (bump) tests are performed during each data download. The bump tests are conducted prior to and after the full calibration for each instrument. A bump test involves exposing the instrument to a calibration gas mixture of known oxygen and methane concentrations to demonstrate instrument response. The bump test verifies the alarm is triggered when gas of a sufficient concentration is applied and assesses whether the instrument accurately measures concentration when a gas of known concentration is applied. The post calibration bump test verifies the instrument has been calibrated successfully. The bump test procedures include the following steps:
2. Attach the Gas Alert clip to the Technician's top pocket and turn on. If at any stage the alarm sounds, turn off gas and vacate the area until clear.
3. Multi-gas containing a known concentration of oxygen, methane concentration, carbon dioxide, hydrogen sulphide and carbon monoxide is applied to the sampling inlet to check the sensor. The Field Technician attaches the tubing to the sample inlet on the instrument and activates the manually controlled regulator. The concentration of gases is selected to be like the range of gases expected to be recorded on site e.g. if the site instrumenting was for perimeter well compliance then methane calibration Gas range would be about 1.0 to 2.5 % v/v.
4. With the calibration gas applied to the sample inlet, the LEL reading is allowed to stabilise (30 seconds approximately), and recorded on a calibration field sheet, or in the electronic workbook format. A maximum margin of ±5 % in the reading is acceptable.
5. Full calibration of gas instruments is conducted during each visit or when the above field verification test is outside the acceptable range. A full calibration consists of a fresh air calibration and a multi-sensor field calibration using a known gas mixture. The fresh air calibration is conducted in the open air outside of dwellings or enclosed areas. Both types of calibrations are automatically performed by the instruments once selected.
6. In the event the full calibration fails, the malfunctioning instrument is replaced with an instrument that meets all requirements (including calibration) and specifications. The malfunctioning instrument is returned to the Equipment Manager for inspection and assessment, who attempts to determine whether the unit must be returned to the supplier for a factory calibration. Until the factory calibration is performed on the malfunctioning instrument, it is replaced by another, fully calibrated instrument

Site Audit Statement

(Attached)

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. 0301-2010

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	James Davis		
Company	Enviroview Pty Ltd		
Address	PO Box 327		
	GLADESVILLE NSW	Postcode	2110
Phone	0467 375 481		
Email	james.davis@enviroview.com.au		

Site details

Address	Lot 204 DP 1265921 (Stage 2B)		
	12 Johnston Crescent		
	HORSLEY PARK, NSW	Postcode	2175

Property description

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

Lot 204 in DP 1265921

Local government area	Fairfield City Council
Area of site (include units, e.g. hectares)	4.027 Ha
Current zoning	IN1 –General Industrial under Fairfield Local Environmental Plan Amendment (Western Sydney Employment Area) 2009

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*.

To the best of my knowledge:

☐ the site **has** been notified to the EPA under section 60 of the *Contaminated Land Management Act 1997*

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

Site audit commissioned by

Name	Wayne Pasalich		
Company	CSR Building Products Limited		
Address	Triniti 3, 39 Delhi Road,		
	NORTH RYDE, NSW	Postcode	2113
Phone	02 9964 1784		
Email	WPASALICH@csr.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)

- ❑ 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: Commercial/industrial

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:

DLA Environmental, ERM Australia, Biogas Systems Australia, DBD Environmental

Titles of reports reviewed:

DLA Environmental Services (June 2013). *Phase 1 Preliminary Environmental Site Assessment, Lot 1 in DP 106143 CSR Building Products 327-335 Burley Road, Horsley Park.* Reference DLH1121_H0000033, dated June 2013.

DLA Environmental Services (September 2013). *Phase 2 Detailed Environmental Site Assessment, Lot 1 in DP 106143 CSR Building Products 327-335 Burley Road, Horsley Park.* Reference DLH1121_H0068, dated September 2013.

DLA Environmental Services Pty Ltd (DLA) (February 2018). *Stage 1 and Stage 2 February 2018 Site Status – 327-335 Burley Road, Horsley Park, NSW 2175*. Report No. DL3109_S008131, dated 22 February 2018.

DLA (March 2018). *Bund Wall Remediation Strategy, 327-335 Burley Road, Horsley Park, NSW 2175*. Report No. 0449086_S008289, Version 2.0, dated 27 March 2018.

DLA Environmental Services (June 2018). *Bund Wall Assessment Report, 327 – 335 Burley Road, Horsley Park, NSW, 2175.* Reference 0449086_S008491, dated June 2018.

ERM (December 2018). *Addendum to Remediation Action Plan: Bund Wall Remediation Strategy, 327 – 335 Burley Road, Horsley Park, NSW 2175.* Reference 0449086_S009295, dated 7 December 2018.

ERM (December 2019). *Remediation Action Plan, 327-335 Burley Road, Horsley Park NSW 2175.* Reference S010173, dated 20 December 2019.

ERM (September 2020). *Validation Report, Stage 2A, 6 Johnston Crescent, Horsley Park NSW 2175.* Reference 0449086_S010649, dated 4 September 2020.

Biogas Systems Australia (November 2020). *LFG Management Plan, Environmental Management Plan for Landfill Gas, Horsley Park Landfill*. Reference: 0103_RPT0076.D, dated 13 November 2020.

ERM (August 2021). *Landfill Gas Risk Assessment, Horsley Logistic Park, 327-335 Burley Rd, Horsley Park NSW 2175*. Reference S011005_0565895, dated 10 August 2021.

ERM (September 2021). *Validation Report, Stage 2B, 12 Johnston Crescent, Horsley Park NSW 2175.* Reference 0449086_S011075, dated 23 September 2021.

Site audit report details

Title Site Audit Report, Lot 204 in DP 1265921 (Stage 2B), 12 Johnston Crescent

Horsley Park NSW

Report no. 600105_0301-2010 Date 25 October 2021

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):~~

~~EMP details~~

Title:	LFG Management Plan, Environmental Management Plan for Landfill		
	Gas, Horsley Park Landfill.		
	Document Reference 0103_RPT0076.D.		
Author:	Biogas Systems Australia		
Date:	13 November 2020	No. of pages	48 (incl. cover)

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:

The EMP was developed with respect to the landfill gas at the former Camide landfill to ensure protection of the surrounding properties including the subject Site Audit site.

To ensure the protection of the surrounding land users the EMP which relates to the management of the former landfill site, located to the west of the subject Site Audit site, prescribes monitoring, reporting and further mitigation actions (if required), to manage the risks to the surrounding land users.

Description of the nature of the residual contamination:

Landfilling activities on the adjacent land to the Site Audit site occurred between 1990 and 1994 with an estimated 950,000 m^3 of waste material placed within a former quarry. It was reported that commercial and industrial wastes were primarily received, however some putrescible wastes are also considered likely to also be present. A Landfill Closure Plan (LCP) was developed in 1999 and included an RAP which provided details of landfill assessment activities and key findings in relation to landfill gas. The landfill site is regulated by the NSW EPA under an Environmental Protection Licence (EPL) (EPL #123). The EPL includes monitoring requirements for the landfill.

The landfill has undergone assessment and investigation since the LCP was implemented. Remediation options were developed and remediation works undertaken to manage landfill gas emissions. A landfill gas monitoring well network was established around the former landfill, with quarterly monitoring of selected wells occurring as part of the EPL #123. A biofiltration trench was constructed around the remainder of the landfill between July 2018 and May 2019 and results from post-installation monitoring at perimeter locations outside of the biofiltration trench in May 2019 indicate a reduction of methane concentrations to below 1 % v/v. A Landfill Gas Risk Assessment was undertaken regarding the Site Audit site which has confirmed very low risk to the Site Audit site.

While no specific land use or development constraints for the Site Audit site has been identified, given the proximity of the landfill and relatively limited timeframe of consistent monitoring, ongoing landfill gas monitoring and routine risk-based assessment of monitoring results is required within the landfill site to ensure mitigation measures, including the installed biofiltration trench continue to be effective, and that the migration of landfill gas does not pose a risk to surrounding properties including the Site Audit site.

Summary of the actions required by the EMP:

Ongoing monitoring at the landfill site will comprise:

- Quarterly monitoring of gas concentrations in all nominated monitoring wells using a calibrated landfill gas monitor (Geotech GA5000 Landfill Gas Analyser or similar). Landfill gas concentrations and gas flow rates will be collected so that an assessment of landfill gas regime and performance of the landfill gas mitigation measures can be made. Groundwater levels will also be gauged and recorded during this monitoring event;

- Quarterly grid-based monitoring of the former landfill surface including biofiltration trench will be undertaken using a calibrated sensitive landfill gas detector (for example RKI Eagle Multi-Gas Monitoring); and

- Quarterly monitoring of enclosed structures (namely utility/service pits) within the landfill site will be undertaken using a calibrated sensitive landfill gas detector (for example RKI Eagle Multi-Gas Monitoring).

A summary table providing details of the various threshold/assessment criteria to be adopted for the evaluation of monitoring data is clearly set out within the EMP.

Monitoring protocols are set out in the EMP for each type of data collection (service pits, sub-surface gas and ambient air/surface monitoring) at the landfill site to ensure consistent monitoring approaches are adopted. The EMP outlines that all monitoring data will be collated and reported on a quarterly basis with recommendations provided, as needed. Upon completion 12 months of monitoring, an annual review and report will be prepared to summarise landfill gas conditions and determine future monitoring/management requirements at the site.

The EMP noted that if reportable environmental conditions are detected during any monitoring event, immediate corrective action will be required. Corrective actions are set out within the EMP.

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

While the requirements of the EMP are not specifically included in the EPL, ongoing monitoring is a requirement and subject to ongoing regulation by the NSW EPA.

In addition, there exists a contract for sale of the land with specific provision for the Vendor (CSR) to undertake all obligations relating to the contamination of the site. The provision in the contract will operate as a Deed following completion of the Sale and will enable the Purchaser to seek specific performance of that agreement regarding the obligations imposed by the EMP.

How there will be appropriate public notification:

This Site Audit Statement with the EMP attached will be provided to Fairfield City Council, a reference to this Site Audit Statement must be recorded on the s 10.7 Planning Certificate as is required under the guidelines to SEPP 55.

Interested parties will have access to the information on the planning certificate on application, including reference to this Site Audit Statement. When land is bought or sold in NSW the *Conveyancing Act 1919* and *Conveyancing (Sale of Land) Regulation 2010* requires that a s 10.7 Planning Certificate be attached to the contract of sale for the land.

~~Overall comments:~~

~~Section B~~

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

___

___

___

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~~

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

- ☐ ~~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):~~

~~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. 0301

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 25 October 2021

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.

LFG Management Plan

Environmental Management Plan for Landfill Gas, Horsley Park Landfill

CSR Building Products Limited

Job ID. 0103

PROJECT NAME:	Environmental Management Plan for Landfill Gas, Horsley Park Landfill
JOB ID:	0103
DOCUMENT CONTROL NUMBER	0103_RPT0076.D
PREPARED FOR:	CSR Building Products Limited
APPROVED FOR RELEASE BY:	Dr Ben Dearman

DOCUMENT CONTROL

VERSION	DATE	COMMENT	PREPARED BY	REVIEWED BY
A	02.09.2020	Updated for Auditor Review	Mitchell Browne	Jack Horan
B	13.11.2020	Final	Mitchell Browne	Jack Horan

DISCLAIMER

Biogas Systems Australia acts in all professional matters as a faithful advisor to the Client and exercises all reasonable skill and care in the provision of its professional services.

Reports are commissioned by and prepared for the exclusive use of the Client. They are subject to and issued in accordance with the agreement between the Client and Biogas Systems Australia. Biogas Systems Australia is not responsible for any liability and accepts no responsibility whatsoever arising from the misapplication or misinterpretation by third parties of the contents of its reports.

Except where expressly stated, Biogas Systems Australia does not attempt to verify the accuracy, validity or comprehensiveness of any information supplied to Biogas Systems Australia for its reports.

Where site inspections, testing or fieldwork have taken place, the report is based on the information made available by the client or their nominees during the visit, visual observations and any subsequent discussions with regulatory authorities. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Biogas Systems Australia is both complete and accurate. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

CONTENTS

TABLES

EXECUTIVE SUMMARY

The objective of this Environmental Management Plan (EMP) is to provide a landfill gas (LFG) management plan that can be enforced to ensure protection of surrounding land users from the former Camide Landfill. To achieve the objective of the EMP the following aspects of LFG management will be addressed to ensure ongoing suitability of the neighbouring sites for commercial/industrial land use including:

- Monitoring and management of subsurface emission in the perimeter well network
- Monitoring and management of surface emissions form the landfill cap and biofiltration trench (BT)
- Monitoring and management of service pits and enclosed spaces on the landfill and adjacent to the landfill (where possible).

The investigations completed to date include installation of a perimeter monitoring network and regular monitoring of LFG conditions at the boundary of the former Camide Landfill. The implementation of a gas interception biofiltration trench was initially installed along the western boundary of the landfill in June 2005 and after the success of this trial, was extended around the entire perimeter of the landfill. The construction of the biofiltration trench around the remainder of the landfill was commenced in July 2018 and completed in May 2019.

Results of the post installation monitoring at perimeter locations outside of the BT in May 2019 and subsequent monitoring indicate a reduction of methane concentrations to below the threshold concentration of 1%v/v. This monitoring confirmed the effectiveness of the northern portion of the BT in the direction of the closest commercial / industrial land user.

To ensure the protection of the surrounding land users this EMP has been developed, which prescribes monitoring, reporting and further mitigation actions (if required). To manage the risks to the surrounding land users, the monitoring of service pits and enclosed spaces (stormwater pits), surface emissions (landfill cap and BT), subsurface migration and water levels (perimeter monitoring) is required. These monitoring activities will not only assess the risk to the surrounding land users but also provide data for ongoing validation of the effectiveness of the BT at mitigating lateral migration of gas from the landfill.

The monitoring of these locations will be completed quarterly, compared against threshold criteria sourced from the Hazardous Ground Gas (NSW 2019) guidelines and reported both quarterly and annually. In the event that a threshold criterion is exceeded for methane or an increasing carbon dioxide trend is observed, additional investigation will be required to determine the course of action which may range from increased monitoring frequency to notification of the regulatory authorities in the event of explosive conditions or acute human health risk.

The site owner (currently CSR Building Products Limited) is the responsible party for ensuring the EMP is executed and the objectives of the EMP are met which is detailed in a legal clause as part of the contract for sale of the closest adjacent properties to the north, south and west of the Former Camide Landfill.

The intent of the EMP is to continue monitoring for at least a period of 24 months from commencement and reassess the stability of landfill gas generation and migration and there is no longer a risk to surrounding land users.

1 INTRODUCTION

This Environmental Management Plan (EMP) has been prepared to document the management and monitoring requirements for the former Camide Landfill (Figure 1) to demonstrate that the landfill gas does not present a risk to surrounding off-site properties.

There is an existing EMP which is part of the contract for sale "Pursuant to clause 38.3 of sale contract dated 9 March 2018 between CSR Building Products Limited and Australand C & I Land Holdings (Australand) as Trustee for Frasers Property C & I Land Holdings (Horsley Park No 2) Trust in respect of the sale of Lots 101 & 102, 327 – 335 Burley Road, Horsley Park CSR Building Products. This previous EMP was written to address the requirements to monitor and manage the risk between the Former Camide Landfill and the Stage 1 development.

As part of the development of an EMP to monitor and manage the risk between the Former Camide Landfill and the Stage 2 development the original Environmental Management Plan (EMP) (Ref 0103 BSA RPT0075.C) was expanded on to include the additional monitoring requirements for Stage 2. This will result in two EMPs for the Former Camide Landfill site which will need to be administered by CSR. For the purpose of implementation, this EMP covers the requirements of the original EMP for Stage 1 plus the additional requirements for Stage 2. This meets the objective of the client to maintain the existing EMP under its contractual requirements with Australand and Horsley Park No 2 whilst meeting the additional management requirements for Stage 2 and the contractual requirements with ESR Australia.

The current EMP (this documents) details the monitoring requirements, roles, responsibilities, reporting requirements and enforceability to ensure that LFG emissions do not impact human health and the environment of surrounding properties both Stage 1 and Stage 2.

1.1 Background

Camide operated a non-putrescible solid waste landfill at the Horsley Park site from 1990 to 1994. The landfilling took place in a quarry void created by clay extraction activities. It has been estimated that 950,000 m^3 of waste was imported to the site in an area of 4.1ha of the site as indicated in Figure 1.

At the completion of landfilling in 1994 the waste was capped with a 1m thick compacted clay layer and a 500mm thick revegetation/landscaping layer in accordance with the Landfill Closure Plan (LCP) (EGIS 1999). At the time of the capping and closure of the landfill the surrounding land users were the other active parts of the quarry activities to the north and the east and open rural land use which bounds the landfill to the west and the south.

Since the capping activities there has been significant site development and regional development of the land surrounding the landfill into commercial industrial land uses. This development has resulted in the encroachment of commercial / industrial development to the north of the northern boundary of the former Camide Landfill. Surrounding land use to the west, south and east have not significantly changed since implementation of the LCP.

The planned commercial / industrial development to the east and south of the landfill is proposed within 250m of the inferred extent of waste. The historical monitoring of perimeter wells at the former Camide Landfill site indicated that hazardous ground gases may potentially migrate laterally which could potentially impact adjacent off-site land users of the Stage 1 and Stage 2 development.

The remedial solution which was designed for the site included a biofiltration trench (BT) to mitigate fugitive gas emissions by oxidation. The trench is installed around the entire perimeter of the former Camide Landfill and is extend into groundwater to 9m in some sections.

As part of the post remediation validation monitoring of LFG wells outside of the BT has been undertaken since May 2019 which report that the lateral migration of fugitive emissions from the former Camide Landfill is being managed. Generation of LFG and migration pathways of LFG can change over time and the relatively small timeframes for monitoring need to be addressed to ensure that conditions have not changed.

During the final installation of the BT some wells were damaged or were in close proximity to the trench which may be influencing the gas concentrations and flow reported during the monthly spot monitoring. As part of the Stage 2 development to the east and south of the landfill ten additional LFG wells and one background LFG location were established to ensure that the perimeter spacing along the eastern and southern boundary of the landfill was approximately 20m. The background LFG location is a sufficient distance from the landfill and is shown on Figure 4.

The development of this EMP is to assist in the long term monitoring of the LFG generation and migration pathways to ensure that the neighbouring properties are protected.

1.2 EMP Objectives

The objective of the EMP is to provide a landfill gas management plan that will be enforced to ensure protection of surrounding land users from the former Camide Landfill.

To achieve the objective of the EMP the following aspects of LFG management will be addressed to ensure ongoing suitability of the neighbouring sites for commercial/industrial land use including:

- Monitoring and management of subsurface emissions in the perimeter well network
- Monitoring and management of surface emissions from the landfill cap and the biofiltration trench
- Monitoring and management of emissions in service pits and enclosed spaces on the landfill and adjacent to the landfill (where possible).

2 SITE OVERVIEW

2.1 Site Description

2.1.1 Location

The site is located at 327 to 335 Burley road, Horsley Park (refer Figure 1). The site is currently identified as Lot 103 of Deposited Plan 1214912 (Historically - Lot 1 Deposited Plan 1228114) based on SIX maps (*maps,six.nsw.gov.au* – accessed 12.11.2020). The landfill site is a part of a larger portion of land which is subject to development plan DA97 – 1085. The landfill is located in the south western corner of the site. A summary of site details is presented in Table 1.

Table 1 – Site Details

Item	Description
Site name and address	Former Camide Landfill, 327 to 335 Burley Road, Horsley Park, NSW 2175
Real property description	Current property description is Lot 103 of Deposited Plan 1214912 as identified in SIX maps (Historically - Lot 1 Deposited Plan 1228114) The EPL details refer to Lot 2 DP 1228114.
Current site owner	CSR Building Products Ltd
Surrounding Allotments	Lots 101, 102 (Stage1 Development) and 103 (Stage 2 Development), 327 – 335 Burley Road, Horsley Park These lots are currently identified in six maps as DP1259616 Lot 202, DP1264857 Lot 301 and DP1214912 Lot 103 respectively
Operational timeframe	Landfilling between 1990 – 1994
Area	Approximately 4.1 hectares
Volume	Approximately 950,000 m^3
Depth	Total waste thickness is estimated to approximately 18 m below ground surface
Waste composition	No putrescible wastes recorded only commercial and industrial*

* Waste disposal records were not available to review in the previous LCP therefore the potential presence of some putrescible wastes exists.

2.1.2 Surrounding Land Use

The land use of the surrounding area is summarised in Table 2.

Table 2 - Surrounding Land Uses

Direction	Use
North	Stage 1 development area. Further to the north is commercial/industrial
South	Stage 2A development area. Rural land with open pasture further to the south.
East	Stage 2C development area (future commercial). Rural land use and market gardens further east
West	Pasture with commercial/industrial land use further to the west

2.2 Site History and Management

As detailed in the background in Section 1 the site was utilised as a quarry prior to 1990. Landfilling activities commenced in 1990 and ceased in 1994 with an estimated 950,000 m^3 of fill placed in the former quarry. The LCP was prepared in accordance with the requirements of the deferred Commencement Conditions 1 to 3 of DA97 – 1085 and in the NSW EPA Guidelines in effect at the time.

2.2.1 Landfill Closure Plan

The Landfill Closure Plan (LCP) (EGIS 1999) was developed for the site in 1999, which outlined ongoing monitoring to be undertaken and stabilisation criteria for the cessation of LFG monitoring. The LCP was prepared in accordance with the requirements of the deferred Commencement Conditions 1 to 3 of DA97 – 1085 and in accordance with the NSW EPA Guidelines in effect at the time. The original Remediation Action Plan (RAP) was presented within the LCP (EGIS 1999) based on several environmental investigations undertaken prior to 1999 which are referenced in Section 6. The current RAP for Stage 2 was developed in 2014 and amended in 2019 to reflect current site conditions (*Ref: Remediation Action Plan. Lot 1 in DP 106143, CSR Building Products, 327 – 335 Burley Road, Horsley Park. (Revised September 2019*)

2.2.2 Environment Protection Licence (EPL) #123

In addition to the LCP an Environment Protection Licence (EPL) #123 is active for the site and regulated by the EPA. The EPL outlines monitoring requirements, maximum scale and load limit for particular contaminants relating to these activities. The EPL for the site is currently active for the following scheduled activities:

- Ceramic works.
- Crushing, grinding or separating.
- Extractive activities.
- Mining for minerals.

In addition to these activities, the EPL addresses monitoring and reporting requirements for the landfill. There has been extensive monitoring of groundwater, leachate, landfill gas since the commencement of the LCP and as part of the EPL which are referenced in Section 6. The objective of the EPL is to regulate specific activities and although useful data is collected the has a different objective.

It should be noted that at the time of writing this EMP, an application is with the NSW EPA (Notice No. 1570706) to surrender the EPL on a section of the site. The application aims to surrender the EPL for Lots 101 and 102 of the EPL#123 from lot 103 (now identified at Stage 1, Stage 2 and Stage 3) of which a portion of this is the Former Camide Landfill.

2.2.3 Remedial History

The landfill has undergone years of assessment since the closure of the landfilling activities and has since been monitoring the LFG emissions and implemented gas migration controls for the identified LFG at the site. Table 3 below gives a brief history of the activities undertaken on the site to date.

Of all the activities and investigation completed to date the most significant is the implementation of a gas interception biofilter and trench was installed along the western boundary of the landfill in June 2005. It was installed as a trial to assess the validity of this type of gas mitigation solution (Dever 2009). Quarterly monitoring of wells GM1-GM11 was undertaken from October 2006 in accordance with EPL #123. Monitoring wells GM12-GM32 were installed in July 2017 to monitoring the lateral migration of LFG from the site. The trial was confirmed a success in the 2009 report and was then adopted for the balance of the landfill perimeter.

The construction of a biofilter and trench around the remainder of the landfill was commenced in July 2018 and completed in May 2019. As part of the Stage 1 and Stage 2 developments additional investigation location have been added at the perimeter of the former Landfill to ensure the spacing is adequate to continue to monitor the potential for fugitive emissions.

Table 3 – Site History Chronology of Activities

Date	Detail
1994	Landfill ceased. Base of landfill RL 58.0m AHD. Volume of void estimated at 950,000 m3 based on a plan of the excavated void and a plan of final landform of the Camide landfill (Egis Consulting Australia Pty Limited, April 1999)
October 1998	Development consent for continued quarrying, landfilling and site remediation granted in Land and Environment Court with conditions that a Landfill Closure Plan be developed and implemented for the pre-existing Camide landfill
October 1998	Investigation of the Camide landfill commenced: thickness and construction of landfill capping layer assessed using test pits (thickness varied from 200 mm to 800 mm). Past groundwater monitoring reviewed. Surface and sub-surface gas measured. Additional groundwater wells installed to the full depth of the landfill.
August 1999	LCP proposes upgrading of landfill capping layer, installation of landfill gas monitoring wells, and a landfill gas monitoring program to complement the groundwater monitoring program. This was reflected in the EPA licence, which included these monitoring locations as a variation dated 22/6/2001. These points were monitored monthly, waters were reduced the quarterly in July 2002.
June 2000	Landfill capping upgraded according to LCP. Consequences were reduced surface gas emissions but increased sub-surface gas migration.
May 2001	EPA require investigation of the levels of leachate and landfill gas being generated by the decomposing waste present in the landfill, Pollution Reduction Program (PRP) added to EPL 123.
October 2002	Development application for conventional landfill gas management in accordance with EPA requirements submitted to Fairfield Council.
December 2003	DA consent granted from Fairfield Council to install gas extraction and flaring system. Local residents objected on grounds of noise, visual aesthetics and emissions, leading to alternative treatments being sought.
November 2004	Proposal to investigate passive biofiltration system submitted to EPA.
March 2005	Trial biofilter added to EPL123 PRP
June 2005	Stage 1 trial construction of gas interception biofilter and trench along western boundary of landfill. Gas readings were monitored until March 2006. Average gas in GM7 prior to installation 37.5%; 0.6% after installation. Report on stage 1 submitted to EPA.
April 2006	Application is made to the EPA regarding decreasing monitoring to quarterly due to the stabilisation of the landfill; variation of the licence is dated August 2006.
October 2006	Full scale version of trench constructed and PRP regarding the trench removed from the EPL.
October 2006 to Present	Monitoring undertaken quarterly as required by EPL 123 (VGT)
October 2013	Mulch replaced over biofilter trench, repairs to observation wells.
July 2017	Landfill gas wells GM12 – GM32 installed by DLA
August 2017 - ongoing	Landfill gas monitoring of GM12 – GM32 undertaken by DLA/ERM
July 2018 to May 2019	Remainder of biofiltration trench constructed
June 2019	Landfill Gas Risk Assessment of Stage 1 completed. This report includes review of the data which was collected for the validation of the effectiveness of the BT
September 2020	Landfill Gas Risk Assessment of Stage 2 completed. This report includes review of the data which was collected for the validation of the effectiveness of the BT

2.3 Environmental Setting

The environmental setting and surrounding environment are detailed in the LCP (EGIS 1999), RAP (DLA 2017) report with summary information also provided in the LFGRA (DLA 2017) report which are referenced in Section 6. These conditions were further investigated and refined in two LFGRA which assess the risk to Stage 1 (2019 BSA) and Stage 2 (DBD 2020) which immediately adjoin the former Camide Landfill. The site setting includes the wider background of the setting which includes the quarry operations (by PGH Bricks & Pavers), the surrounding adjacent sites and the former Camide Landfill (specifically Landfill Gas). A summary of the key information from these reports is provided in the following sections.

2.3.1 Regional Geology

The 1:100,000 Soil Landscape Sheet for Penrith (9030, 1989) shows the landform to comprise the Blacktown Unit with gently undulating rises on Wianamatta Group bedrock with slopes usually <5% and broad round hill crests.

The Blacktown Unit is described as a 'Residual Landscape'. The soils of this unit comprise hard setting, mottled texture contrast soils, including shallow (<1.5m) red and brown podsols on the crests, grading to deeper (>2m) yellow podsols on the lower slopes and near drainage lines. This unit is associated with known salinity and dispersive hazard, particularly in lower slopes and streamlines where soils have the potential to become waterlogged.

2.3.2 Site Specific Geology

Previous investigations have indicated that the Site contains red podzolics with brown silty to clay loam topsoils and dark red sub plastic medium clay subsoils which are in turn underlain by weathered sandstone, shale and siltstone bedrock encountered at depths ranging from 0.9 to 5.2 metres.

2.3.3 Hydrology and Hydrogeology

The structural and textural characteristics of the Bringelly Shale underlying the Site and of the Wianamatta Group determine the hydrological regime of the region. Claystones, siltstones and sandstones underlying the Site are of negligible porosity and permeability due to the fine-grained nature and the degree of intergranular cementation. Groundwater in these formations is stored and migrates principally through fractures and joints.

Surface clays derived from the weathering and alteration of the Bringelly Shale form a capping layer over the underlying and less weathered rock mass restricting infiltration and groundwater recharge. The limited groundwater recharge and low permeability results in poor flushing of the rock mass, leaving connate salts within the sediments. As a result, high salinity and low yield are a common trait of the groundwater within the Wianamatta bedrock.

The distribution of groundwater levels across the entire Site does not form a consistent pattern, locally the groundwater levels are influenced by the quarry voids. Overall a gradient exists in a north-westerly direction towards Ropes Creek. Typically, groundwater levels at the Site vary between 2 and 10 metres below existing natural ground levels.

2.3.4 Landfill Gas

Previous investigations of LFG at the Camide Landfill site have found elevated concentrations of landfill gases in perimeter wells at the south, north and eastern perimeter. Methane gas was measured in excess of 1%v/v (DLA 2016) which therefore does not comply with the investigation criteria. In response to these exceedances additional investigations including a Remediation Action Plan (DLA 2017) and installation of a biofiltration trench (BT) around the perimeter of the waste mass has been executed and validated along the northern boundary by three rounds of monitoring data (5th April 2019, 17th April 2019 and the 10th May 2019). It should be noted that the western portion of the BT was previously validated by Dever (2009) and the southern and eastern portions of the trench have only one round of validation monitoring.

Results of the post installation monitoring at perimeter locations outside of the BT in May 2019 indicate a reduction of methane concentrations to below the threshold concentration of 1%v/v. The subsequent monitoring of the northern portion of the BT undertaken by Biogas Systems on the 22nd May 2019 and 19th June 2019 confirmed the effectiveness of the BT as reported in Stage 1 Landfill Gas Risk Assessment Horsley Park 2019. This monitoring confirmed the effectiveness of the northern portion of the BT in the direction of the closest commercial / industrial land user.

In order to assess the gas migration (pathways) from the former landfill (source) to the Stage 2 development (receptor) newly installed perimeter wells were installed and monitored in an intensive six-week program. The risk assessment undertaken relies predominantly on the data gathered from the continuous monitoring locations and six weeks of spot monitoring of the new and relevant existing LFG wells. In addition to this intensive investigation, historical spot monitoring and groundwater level data has been utilised where it is deemed suitable for this risk assessment.

The data gaps addressed in this assessment include the re-establishment of a perimeter well spacing of 20m through additional locations and replacement of wells, more thorough investigation of conditions utilising continuous gas monitor, confirmation of borehole flow using a GFM, dipping of groundwater wells on multiple occasions to gain an understanding of groundwater elevation respective to the biofiltration trench and investigation of the effectiveness of the biofiltration trench.

Under current site conditions LFG at the Stage 1 and Stage 2 developments are not considered to pose an unacceptable risk to on-site human receptors. The LFG risk between Stage 1 and Stage 2 and the former Camide Landfill was determined to be Low (CS2) based on the Level 2 risk analysis and assessments completed for each adjoining site. There are no current sources on the Stage 1 and Stage 2 sites (except for CO_2 in validated geotechnical fill). The only plausible pathways and therefore potential risk is only fully realised when ground gas can migrate beneath or through the biofiltration trench.

The surveyed depth of the trench is known from as constructed drawings, confirmation of the current perimeter well network elevation and depth in meters Australian Height Datum has been identified as a data gap requiring future work. The current assessment of the depth of groundwater and the depth of the biofiltration trench has been calculated using as constructed survey (relative levels) and field measurements meters below ground surface. More accurate confirmation of these elevations will provide more certainty that migration beneath the biofiltration trench is not occurring.

The Level 1 risk analysis and assessment identified services in proximity to the landfill as a potential receptor with a moderate qualitative risk. The services present on the Camide landfill are limited to stormwater which is collected along the western boundary and discharged by gravity to the north of the Stage 1 devleopment. This is the only plausible pathway for gas migration through services from the former Camide Landfill. There are no proposed or existing services between Stage 2 and the former Camide Landfill.

Based on the findings of this landfill gas risk assessment, the risk of landfill gas migration from the former Camide Landfill onto the Stage 1 and Stage 2 developments and causing harm to human health is considered low and no specific development constraints have been identified with the exception of ensuring that the buildings are constructed with a reinforced concrete ground-bearing foundation raft slab with limited service penetrations cast into slab.

3 LANDFILL GAS MANAGEMENT

3.1 Introduction

Landfill gas is being generated from the landfill and has the potential to migrate for a period of 10-20 years at levels that may cause harm to human health of the environment. Although significant investigations and remediation to prevent lateral migration (specifically the Biofiltration Trench) has been completed, the gas mitigation measure should be validated, and site conditions assessed over time.

The long-term monitoring of LFG is required to account for changing site conditions, climatic conditions and any natural disasters that may alter the effectiveness of the gas mitigation measures.

The term 'hazardous ground gas' is applied to both gases and vapours that may be present within the pore space of soils and rocks and may impact adversely upon human health and safety or the integrity of structures and may consequently affect activities such as the construction and management of buildings. Such gases or vapours may be of natural or anthropogenic origin.

The ground gases that are generally of concern in this context are:

- Methane, carbon dioxide, carbon monoxide, petroleum vapours, hydrogen, hydrogen sulphide, radon, volatile organic compounds (VOCs).

Of concern at the former Camide Landfill is the presence of methane and carbon dioxide in high concentrations.

- Methane (CH4) is a flammable gas that is explosive in the concentration range 5–15% v/v in air (somewhat different ranges may apply in atmospheres with enhanced or reduced oxygen concentrations). It is also potentially an asphyxiant if its presence results in a low oxygen concentration. It is less dense than air and has a distinct odour.
- Carbon dioxide (CO2) is an asphyxiant and toxic gas that is significantly denser than air and is odourless.

This EMP is the document to assist stakeholders manage landfill gas and ensure the performance of the gas mitigation measures until evidence suggest there is no longer a risk to surrounding land users.

3.2 Regulatory Requirements

The following laws, and relevant associated regulatory instruments, have been considered in the preparation of this EMP.

- Protection of the Environment Operations (POEO) Act 1997.
- Environment Planning and Assessment (EP&A) Act 1979.
- Contaminated Land Management (CLM) Act 1997.

The site is no longer an operating landfill, however, still maintains an EPL. The proposed screening criteria for the objective of this EMP is to provide a landfill gas management plan that will be enforced to ensure protection of surrounding land users from the former Camide Landfill. Therefore, the application of screening criteria from the Assessment and Management of Hazardous Ground Gases (NSW 2019) are the most applicable for the assessment of risk to surrounding sites posed by the former landfilling activities.

3.2.1 Environmental and Safety Plans

It is acknowledged that there are environmental and WHS risks associated with any works completed within the landfill site. This EMP has not specifically outlined the requirements for management of future potential civil works which may include excavation for maintenance and installation of services as these risks vary depending on the scope of works. The management of these future works will be required to be addressed in a standalone Construction Environmental Management Plan (CEMP) prepared by a suitably qualified consultant or contractor specific to the works. The CEMP will include associated safety and environmental management requirements associated with ground disturbance activities with particular reference to hazardous gases, confined space, reinstatement and rectification or cap and the biofiltration trench as required. Any changes to site conditions will need to be reflected in an updated EMP to ensure risk is properly managed and monitored.

3.3 LFG Migration Controls

3.3.1 Landfill Cap

A landfill cap consisting of 1m clay and 0.5m landscaping material has been constructed at the site. The purpose of the cap is to reduce infiltration and reduce surface gas emissions. The landfill cap should be maintained to ensure continued performance. Performance of the cap will be assessed through surface monitoring and inspections as outlined below.

3.3.2 Perimeter Biofiltration Trench

The biofiltration trench should be maintained to ensure continued performance. This includes topping up the trench with coarse mulch as required and ensuring that the biofiltration media remains moist, particularly during the drier months. Monitoring and management of the biofiltration trench should be conducted in accordance with the handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system (NSW DECC, 2010). Performance of the biofiltration trench will be assessed through surface monitoring and inspection as outlined below.

3.4 Adopted Threshold Criteria

The following table outlines the adopted threshold criteria to be applied to subsurface, surface and biofiltration trench emissions and enclosed space monitoring. The summary Table 4 below highlights the key criteria and the section below detail each aspect of monitoring.

Table 4 – Subsurface Gas Monitoring Locations

Aspect	Parameter	Threshold (NSW EPA 2019)
Subsurface	Methane (CH4)	1 %v/v
	Carbon dioxide (CO2)	1.5%v/v above historical
	Carbon monoxide (CO)	5ppm (Limit of Instrument error)
	Hydrogen sulphide (H2S)	5ppm (Limit of Instrument error)
	Water Level	Depth to water exceed the total
Surface Emissions	Methane (CH4)	500ppm (0.05%v/v)
	Windspeed	10 km/h
Biofiltration Trench	Moisture (Hand Squeeze)	50-60% Moisture*
Enclosed Space Monitoring	Methane (CH4)	1%v/v
	Carbon dioxide (CO2)	1.5%v/v
	Carbon monoxide (CO)	5ppm (Limit of Instrument error)
	Hydrogen sulphide (H2S)	5ppm (Limit of Instrument error)

*Field test commonly used in composting, refers to requirements in the handbook for Biofiltration (NSW DECCW, 2010)

3.5 Subsurface Gas Monitoring (Perimeter LFG Wells)

3.5.1 Requirements

The perimeter well network was established to monitor the lateral migration of LFG from the landfill. Post installation of the BT these perimeter wells act as trigger wells to monitor the effectiveness of the gas mitigation measure. These perimeter wells are required to be operational to monitor the effectiveness of the trench and inform future landfill gas risk assessments if possible.

3.5.2 Objectives

The objective of the subsurface gas monitoring is to detect lateral migration of landfill gas across the biofiltration trench and measure the potential risk to off-site properties.

3.5.3 Monitoring Locations

Subsurface monitoring should be undertaken on all landfill gas monitoring wells for the Camide Landfill however the specific wells required to monitor conditions which may impact Stage 2 are outlined in Table 5 below. Monitoring locations are shown on Figure 2. Subsurface monitoring should be undertaken in accordance with NSW EPA *Environmental Guidelines: Solid Waste Landfill* (SWLG 2016).

Table 5 – Subsurface Gas Monitoring Locations

Well ID	Inside or Outside Trench
GM1	Outside
GM6	Outside
GM7	Outside
GM8	Outside
GM9	Outside
GM10	Outside
GM12	Outside
GM13	Outside
GM13A	Outside
GM14	Outside
GM15	Outside
GM15A	Outside
GM17	Outside
GM18	Outside
GM20	Outside
GM21	Inside**
GM22	Inside**
GM23	Outside
GM25	Outside
GM26	Outside
GM27	Outside
GM28	Inside**
GM29	Inside**
GM30	Outside
GM31	Outside
GM32	Outside
GM33	Outside
GM34	Outside
GM35	Outside
GM36	Outside
GM37	Outside
GM38	Outside

Well ID	Inside or Outside Trench
GM39	Outside
GM40	Outside
GM41	Outside
GM42	Outside
GM43	Outside / Background
GM44	Outside

'**' These wells are included in the monitoring program to provide data over time of the landfill gas conditions. They are not to be assessed against the threshold criteria for action due to their location on the inside of the biofiltration trench.

The condition of each LFG well should be noted on field forms and confirmation as operational or not for the purpose of LFG monitoring. In the event that a monitoring well becomes unsuitable for purpose then the replacement of the monitoring wells should be considered with respect to the overall coverage of the monitoring network.

3.5.4 Landfill gas analyser

Monitoring subsurface wells with a GA5000 LFG gas analyser (or equivalent) will be used to assess concentration of typical landfill gas constituents listed below in Table 6. The performance specification of the LFG analyser is presented in Table 6 below. The monitoring procedure for landfill gas well monitoring and bump test quality control requirements are provided in Appendix D.

Table 6 – Specification for handheld gas monitors

<table>
<tr><td rowspan="7">Range</td><td>CH_4</td><td colspan="3">0 - 70% to specification, 0-100% reading</td></tr>
<tr><td>CO_2</td><td colspan="3">0 - 40% to specification, 0-100% reading</td></tr>
<tr><td>O_2</td><td colspan="3">0 - 25%</td></tr>
<tr><td>CO</td><td colspan="3">0 – 200 ppm</td></tr>
<tr><td>H_2S</td><td colspan="3">0 – 200 ppm</td></tr>
<tr><td>Flow</td><td colspan="3">± 3.0 L/hr</td></tr>
<tr><td>Pressure</td><td colspan="3">± 4.0 mb</td></tr>
<tr><td rowspan="8">Typical accuracy</td><td>Gas</td><td>0-5 %v/v</td><td>5-15 %v/v</td><td>15 %- Full Scale (FS)</td></tr>
<tr><td>CH_4</td><td>±0.5%</td><td>±1.0%</td><td>±3.0%</td></tr>
<tr><td>CO_2</td><td>±0.5%</td><td>±1.0%</td><td>±3.0%</td></tr>
<tr><td>O_2</td><td>±1.0%</td><td>±1.0%</td><td>±1.0%</td></tr>
<tr><td colspan="2">Gas</td><td colspan="2">0-FS</td></tr>
<tr><td colspan="2">CO (0 – 500 ppm version)</td><td colspan="2">±10.0% FS</td></tr>
<tr><td colspan="2">CO (0 to 2000 ppm, H_2 compensated version)</td><td colspan="2">±10.0% of reading or 15 ppm, whichever is greater</td></tr>
<tr><td colspan="2">H_2S (0 - 200 ppm)</td><td colspan="2">±10.0% FS</td></tr>
</table>

Table 7 – Subsurface Gas Monitoring Parameters

Parameter	Unit of Measurement
Methane (CH_4)	%v/v
Carbon dioxide (CO_2)	%v/v
Carbon monoxide (CO)	ppm
Hydrogen sulphide (H_2S)	ppm
Oxygen (O_2)	%v/v
Flow rate	Litres/hour
Pressure	mb (equivalent to Hpa)
Water level	mbgl

Table 8 – Subsurface Gas Monitoring Threshold

Parameter	Threshold (NSW EPA 2019)
Methane (CH_4)	1 %v/v
Carbon dioxide (CO_2)	1.5%v/v above historical background levels or above the identified background level reported in GM43 (Appendix B)
Carbon monoxide (CO)	5ppm (Limit of Instrument error)
Hydrogen sulphide (H_2S)	5ppm (Limit of Instrument error)
Water Level	Depth to water exceed the total depth of the biofiltration trench

In the event that a threshold concentration is exceeded this will trigger additional investigation in the form of data interrogation (QA/QC) and potentially resampling of the location(s) that exceeded the threshold. The background levels for carbon dioxide have been taken from the post BT installation or the highest reported background CO2 concentration reported at GM43 as shown in the table in Appendix B. The initial screening assessment against adopted criteria provides the first pass investigation of the gas conditions. Following the screening assessment results are to be plotted against historical and assessed for increasing trends. In the event of an increasing trend for LFG constituent's further investigation into the risk this increasing concentration will have on the adjacent Stage 2 development and occupants.

The water level threshold is a secondary indicator of the BT effectiveness and should be considered with gas concentration reported at the same location. In the event that gas concentration has exceeded threshold criteria and show a reported increasing trend comparison of trench invert levels and standing water levels mAHD should be reviewed. More intensive monitoring of groundwater conditions may be required to determine the period that a potential pathway exists beneath the BT.

This increased risk (if identified) could result in a Tier 3 risk assessment with Vapour Intrusion (VI) modelling or fast tracking future contingency measures of implementing an active gas extraction system.

The timing of the monitoring and frequency of the monitoring events is outlined in Table 9.

Table 9 – Subsurface Gas Timing and Frequency

Action Item	Frequency	Timing
Subsurface gas monitoring	Quarterly	February, May, August, November

The quarterly monitoring should continue for a period of 24 months following the implementation of this EMP. After a period of 24 months a review of the LFG trend should indicate a stable or reducing concentration trend for both methane and carbon dioxide and have reported below 1%v/v and 1.5%v/v (or established background) respectively for a period of 24 months.

In the event that a well(s) is reported dry at total depth an investigation of well integrity and weekly investigation of water levels and gas concentrations should be undertaken to assess the risk of off-site migration and effectiveness of the BT. If the well(s) experiences extended dry conditions a landfill gas risks assessment should be undertaken to determine the effectiveness of the BT and reassess the potential LFG risk to surrounding land users.

3.5.5 Reporting

Quarterly and annual reporting requirements as outlined in Section 5.

If methane concentrations exceed 1.25 %v/v (25% of the lower explosive limit) in the perimeter wells during monitoring, reporting to EPA is required as outlined in Section 60(4) of the CLM Act requires a person who has a duty to report contamination to notify the NSW EPA.

In the event that corrective actions are required reporting in the form of individual reports detailing the investigations undertaken will be submitted to the Project Manager, Site Owner and passed on to the appropriate regulatory authorities and notification to adjacent property owners where required.

3.5.6 Corrective / Contingency Actions

If methane concentrations exceed 1%v/v and other LFG constituents (CO2, H2S, CO) report data that represents an increasing trend within perimeter monitoring wells. an increase in testing frequency should be undertaken. The initial response will be to increase testing frequency based on a review of the data by the Environmental Consultant. Indicatively the initial assessments would be daily until stabilised then return to quarterly.

If exceedances of landfill gases are persistent and an increasing concentration trend is established over a period of three consecutive monitoring events this will trigger an update to the 2017 LFG Risk Assessment for the Camide Landfill (DLA, 2017), Stage 1 LFG Risk Assessment (DBD 2019) and Stage 2 LFG Risk Assessment (DBD 2020) to address the potential risk to off-site receptors. A landfill gas risk assessment should be undertaken in accordance with Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases (NSW 2019) to determine additional LFG mitigation options.

Notifications will be made to the adjacent property owners/management if an update of the Stage 1 LFGRA and Stage 2 LFGRA is required (i.e. increasing concentrations trend and off-site service monitoring is required)

If a potential risk to off-site land uses is identified (via increasing trend in the perimeter monitoring wells over three consecutive events) in the routine monitoring or subsequent follow up monitoring of the off-site services, mitigation measures should be implemented in accordance with recommendations of the updated landfill gas risk assessment.

3.6 Surface Gas and Biofiltration Trench Monitoring

3.6.1 Requirements

The landfill has been capped to reduce water infiltration and vertical landfill gas migration. To ensure the ongoing performance of the cap, monitoring and maintenance is required.

3.6.2 Objectives

The objective of the surface gas monitoring is to demonstrate that the landfill cap is effective in controlling the emission of landfill gas and reducing infiltration. Monitoring the surface of the landfill should locate any point sources that may be emitting landfill gas.

3.6.3 Performance Indicators

- Methane concentrations do not exceed 500 ppm
- No large cracks or erosion noted
- Biofilter media in good condition, at correct moisture levels and has not subsided

3.6.4 Monitoring Requirements

Surface monitoring should be undertaken on the landfill in accordance with SWLG 2016 and EPL 123. Biofiltration trench monitoring should be undertaken in accordance with the handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system (NSW DECCW, 2010)

3.6.5 Surface and utility pit gas analyser

Surface gas monitoring should be undertaken with a device with a detection sensitivity for methane of less than 100 ppm. An RKI Eagle 2 or TDL 500 instrument (or equivalent) is the preferred instrument with the required detection limit. Preferred instrument specification is summarised in Table 10 and the units of measurements and threshold for further investigation are outlined in Table 11. The monitoring procedure for surface walkover is outlined below and the bump test requirements are provided in Appendix D.

Table 10 – Surface gas analyser specification

Item	Range
Response Time, T90	CH4 - 4.5 seconds T10 standards: 2 seconds with suction rod T90: 6 seconds with suction rod T10: < 3.5 seconds
Gases Measured	CH4 by laser spectroscopy
Range	CH4 - 0-10,000 ppm and 0 ppm to 100% gas volume
ATEX	II 2G Ex ib IIB T4
CE	94/9/CE directive dated March 23rd 1994

During the surface gas and biofiltration trench walkover the wind conditions should be gathered using a handheld anemometer and recorded frequently on field notes.

Table 11 – Surface Gas Monitoring Parameters and Threshold

Parameter	Unit of Measurement	Threshold (NSW 2019)
Methane (CH_4)	ppm or %v/v	500ppm (0.05%v/v)
Windspeed	km/h	10 km/h
Moisture (Hand Squeeze)	-	50-60% Moisture*

*Hand squeeze methodology is not a threshold regulated in the NSW EPA 2019 guidelines or in the biofiltration handbook (DECCW 2010). This is a field test used in composting to easily determine moisture content of a similar media to the material present in the biofiltration trench.

The criteria for rainfall should be considered and noted if rainfall occurs prior to the surface emissions investigation. Although these are recommended values, they are not always achievable in period of dropping barometric pressure and need to be considered during the reporting phases. The timing of the monitoring and frequency of the monitoring events is outlined in Table 12.

Table 12 – Surface Emissions Timing and Frequency

Action Item	Frequency	Timing
Surface gas monitoring	Quarterly	February, May, August, November

3.6.6 Surface Walkover Monitoring Procedure

Methane should be tested in the atmosphere 50mm above the landfill surface in areas with intermediate or final cover/capping. Testing should be conducted in a grid pattern across the landfill surface at 25-metre spacings. Depressions in the cover material, or surface fissures away from the sampling grid, should also be investigated. The monitoring should be performed on calm days (winds below 10 kilometres/hour) and preferably during periods of relatively low and stable atmospheric pressure (e.g. less than 101.3 kPa). The procedure above is based on the surface emissions monitoring section of '*Environmental Guidelines: Solid Waste Landfill*' 2016.

3.6.7 Biofiltration Monitoring and Management

The following procedure for management and monitoring of the biofiltration trench has been taken from the NSW Department of Environment, Climate Change and Water 'Handbook *for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*' (March 2010). Monitoring should occur quarterly plus after significant rainfall events e.g. > 20 mm of rainfall. Monitoring should also occur more regularly during drought to check the moisture levels of the biofilter media. Regular monitoring should include:

A regular inspection of the biofilter to assess the following:

- odours from the biofilter.
- condition of the biofilter media including settlement, formation of a surface crust, scouring, and / or desiccation of the media.
- moisture content of the upper layers of the biofilter media.
- ponding of water on the surface of the biofilter media.
- condition of vegetation growing on the biofilter surface, including weeds / unwanted vegetation; and
- condition of surface water management measures.

Monitoring of the following:

- composition and flow of landfill gas from the passive drainage system(s) to the biofilter(s) emissions / flux from the surface of the biofilter (methane and carbon dioxide).
- moisture content of the upper layers of the biofilter media, particularly in a dry / hot climate / drought condition; and
- depth of drainage water in the gas distribution layer / biofilter media.

The hand squeezed method for moisture determination is commonly used in the organics processing industry.

The simple method is as follows:

- Take a tennis ball sized sample of the organic material in your hand. Be aware of sharp objects.
- Squeeze the organic material like a firm handshake.
- Open your hand and inspect the organic material.

Results - If free water is released the organic material is too wet. If the organic material crumbles and falls apart it is too dry. If the organic material stays together the moisture content is correct (50-60%).

Maintenance of a passive gas drainage and biofiltration system is dependent on the results of monitoring and may involve the following:

- drainage of water from the aggregate gas distribution layer if the biofilter is in box / above ground or lined
- maintaining vegetation growth on the biofilter media e.g. mowing, trimming, weed removal and disposal
- topping up the media to overcome media settlement, if required

- turn / fork upper layer of media, as required, when / if a crust forms
- addition of a wetting agent to the biofilter media (upper layers), if found to not be holding water
- replacement of the upper layers of the biofilter media, if the crust too hard to break up and / or a wetting agent does not work.

Replacement of the biofilter media, if required, as determined by monitoring. Indicators may include:

- reduced biofilter performance i.e. methane oxidation rate
- large / excessive settlement, which may adversely affect media porosity and subsequently gas and water movement through the biofilter media
- ponding of water on the surface of the biofilter, which may indicate clogging and
- clogging of the biofilter media, which may be due to settlement, microbial growth or EPS formation, and which may adversely affect media porosity and subsequently gas and water movement through the biofilter media.

The biofilter media should be pre-mixed off site (at the source / producer of the materials) and delivered to site immediately prior to placement in the biofilter, to minimise construction time and storage on site, and consequently minimise potential odours or contamination of stormwater runoff.

Excavated waste should be disposed of immediately after excavation at an approved waste disposal site. Landfilled waste should not be stockpiled on the site.

3.6.8 Reporting

Quarterly and annual reporting requirements as outlined in Section 5.

In the event that corrective actions are required reporting of in the form of individual reports detailing the investigations undertaken will be submitted to the Project Manager, Site Owner and passed on to the appropriate regulatory authorities where required.

3.6.9 Corrective Actions

If methane concentrations exceed 500 ppm corrective action is required. Initial response is to complete additional walkovers with increased frequency (initially daily until conditions report below the adopted criteria). Flux (emissions) monitoring would then be conducted to quantify emission rates and help identify the extent of gas loss through the biofiltration trench.

The increase in methane concentrations above 500ppm at the surface may indicate a failure in the biofiltration media. After initial investigations the following actions, guided by the findings and observations of the biofiltration trench may include but not be limited to:

- Repairing or replacing cover material (spent biofiltration media).
- Repairing or replacing underlying porous material (clear any blockages).
- Adjustment or installation of landfill gas controls to extract and treat gas.

3.7 Gas Accumulation in Enclosed Structures

3.7.1 Requirements

Monitoring of the potential for LFG to accumulate in subsurface pits and enclosures (i.e. stormwater pits, telecommunication, power pits, irrigation pits etc) on or near the landfill to ensure gas is not accumulating to dangerous levels.

Landfill gas is primarily made up of methane, carbon dioxide, carbon monoxide and hydrogen sulphide and must not accumulate in buildings. Methane is explosive in the range of 5% to 15% (volume/volume), and landfill gas can be an asphyxiant in enclosed spaces.

3.7.2 Objectives

The objective of the subsurface structure gas monitoring is to monitor gas build up which may have the potential to be explosive risk on site and have the potential to migrate off-site to surrounding land users.

3.7.3 Performance Indicators

- Methane concentrations do not exceed 1 %v/v (NSW 2019)

3.7.4 Monitoring Requirements

Gas accumulation monitoring in enclosed structures monitoring should be undertaken in accordance with SWLG 2016 and the procedures outlined in Appendix D. Monitor potential gas accumulation in subsurface structures which do not have preventative measures installed. These monitoring points should include the stormwater pits which run to the north across into Stage 1 from the landfill site as shown on Figure 3 and Table 13 below. The monitoring procedure for landfill gas monitoring of enclosed structure and bump test quality control requirements are provided in Appendix D.

Table 13 – Enclosed structures identified for monitoring

Enclosed Structure ID	On-site Structure
SW1	On-site (Inside BT)
SW2	On-site (Outside BT)

The stormwater pits collect surface water from the landfill capping and direct waters into the initial collection pit (SW1) which is located beneath the surface on the inside of the BT. This pit is connected to the next pit (SW2) which is located in the detention basin to the north and then connects into a stormwater management system which moves to the north along the western boundary of the Stage 1 property to discharge near Burley Road.

It should be noted that the future plans indicate an adjacent road to the west of the landfill which will include services including, but not limited to, stormwater. These future locations should be included in updated versions of the EMP or noted and incorporated into the monitoring schedule.

3.7.5 Landfill gas analyser

Monitoring of utility pits with an LFG gas analyser (GA5000 or equivalent) will be used to assess concentration of typical landfill gas constituents. The performance specification of the LFG analyser is presented below in Table 14 and the units of measurement are provided in Table 15. The threshold for LFG gas concentrations in enclosed structures is presented in Table 16 with other gases to be recorded for information rather than a threshold for action.

Table 14 – Specification for handheld gas monitors

<table>
<tr><td rowspan="7">Range</td><td>CH_4</td><td colspan="3">0 - 70% to specification, 0-100% reading</td></tr>
<tr><td>CO_2</td><td colspan="3">0 - 40% to specification, 0-100% reading</td></tr>
<tr><td>O_2</td><td colspan="3">0 - 25%</td></tr>
<tr><td>CO</td><td colspan="3">0 – 200 ppm</td></tr>
<tr><td>H_2S</td><td colspan="3">0 – 200 ppm</td></tr>
<tr><td>Flow</td><td colspan="3">± 3.0 L/hr</td></tr>
<tr><td>Pressure</td><td colspan="3">± 4.0 mb</td></tr>
<tr><td rowspan="2">Typical accuracy</td><td>Gas</td><td>0-5 %v/v</td><td>5-15 %v/v</td><td>15 %- Full Scale (FS)</td></tr>
<tr><td>CH_4</td><td>±0.5%</td><td>±1.0%</td><td>±3.0%</td></tr>
</table>

	CO_2	±0.5%	±1.0%	±3.0%
	O_2	±1.0%	±1.0%	±1.0%
	Gas		0-FS	
	CO (0 – 500 ppm version)		±10.0% FS	
	CO (0 to 2000 ppm, H_2 compensated version)		±10.0% of reading or 15 ppm, whichever is greater	
	H_2S (0 - 200 ppm)		±10.0% FS	

Table 15 – Enclosed Structure Gas Monitoring Parameters

Parameter	Unit of Measurement
Methane (CH_4)	%v/v
Carbon dioxide (CO_2)	%v/v
Carbon monoxide (CO)	ppm
Hydrogen sulphide (H_2S)	ppm
Oxygen (O_2)	%v/v

Table 16 – Enclosed Structure Gas Monitoring Threshold

Parameter	Threshold (NSW 2019)
Methane (CH_4)	1%v/v
Carbon dioxide (CO_2)	1.5%v/v
Carbon monoxide (CO)	5ppm (Limit of Instrument error)
Hydrogen sulphide (H_2S)	5ppm (Limit of Instrument error)

In the event that a threshold concentration is exceeded this will trigger additional investigation in the form of an initial data interrogation and resampling of the location(s) that exceeded the threshold. The timing of the monitoring and frequency of the monitoring events is outlined in Table 17.

Table 17 – Enclosed Gas Timing and Frequency

Action Item	Frequency	Timing
Enclosed structure gas monitoring	Quarterly	February, May, August, November

3.7.6 Reporting

Quarterly and annual reporting requirements as outlined in Section 5.

If methane concentrations exceed 1.25 %v/v (25% of the lower explosive level) in the enclosed structure during monitoring, reporting to EPA is required as outlined in Section 60(4) of the CLM Act requires a person who has a duty to report contamination to notify the NSW EPA.

In the event that corrective actions are required reporting of in the form of individual reports detailing the investigations undertaken will be submitted to the Project Manager, Site Owner and passed on to the appropriate regulatory authorities and adjacent property owners where required.

3.7.7 Corrective Actions

If methane concentrations exceed the adopted threshold criteria within enclosed structures, an increase in testing frequency should be undertaken. The increase in frequency should be determined based on a review of the data by the Environmental Consultant. Indicatively the initial assessments would be daily until stabilised then return to quarterly.

If exceedances of landfill gases are persistent and an increasing concentration trend is established there is a potential risk to off-site receptors. A landfill gas risk assessment should be undertaken in accordance with *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases (NSW 2019)* to determine additional LFG mitigation options.

If a potential risk to offsite land uses is identified, mitigation measures should be implemented in accordance with recommendations of and updated landfill gas risk assessment.

These may include application of proprietary products (sealants i.e Sikaflex) that seal the inside of pits alterations to the pit lids (i.e. fireproof mesh) and or ventilation.

3.8 Data Collection

To ensure the data collected is of sufficient quality and can be relied upon the works should be undertaken by a suitably qualified person. The methodologies for collection of data should be undertaken in accordance with SWLG 2016 and industry best practice.

All equipment used for the collection of data should have appropriate detection levels and accuracy for the monitoring undertaken. Calibration certificates and other quality assurance and quality control procedures undertaken should be documented and discussed in the annual report.

In preparation for each monitoring event weather conditions including rainfall, windspeed and barometric conditions before during and after each monitoring event should be downloaded from the Bureau of Meteorology (BOM). Specifically, BOM data should be collected from the nearest weather station (Badgerys Creek) that collects this data at the required frequency.

The required field forms to complete the field data collection are provided in Appendix C.

4 ROLES AND RESPONSIBILTIES

The roles and responsibilities for execution of the EMP is outlined in Table 18 below.

Table 18 – Roles and Responsibilities for the EMP

Responsible party	Task
CSR Building Products Limited (Site Owner)	Implementation of EMP including the following: ▪ Maintains ultimate responsibility for implementation of the EMP. ▪ Acknowledge that the EMP is an important document for the safe operation and management of the Site. Make an executive manager responsible for implementation. ▪ Appoint a project manager and an environmental consultant, to perform the necessary tasks as specified in the EMP. ▪ Provide this EMP to purchasers, tenants and contractors, or delegate this role to the owner's solicitor or agent. ▪ Ensure that potential future purchasers of the former Camide Landfill Site are aware of remediation works that have been undertaken and the need to develop their own ongoing management measures to ensure that the integrity of the gas mitigation system is not compromised and that there is no unacceptable risk to building occupants as a result of Hazardous Ground Gas (HGG) intrusion. ▪ Review plans for future works and associated method statements as required, to check that adequate environmental management measures are incorporated into the planning and are aligned with this EMP. ▪ Ensure monitoring works are being conducted and reported to the Site Auditor (if required) in compliance with the requirements included in this EMP. ▪ Maintenance of any site controls or protection measures which form part of this EMP. ▪ Maintenance of the document so that it continues to reflect the site conditions, best practice occupational health and safety recommendations and any changes to the regulatory framework ▪ Maintenance of the document so that it continues to reflect the site conditions, best practice occupational health and safety recommendations and any changes to the regulatory framework ▪ Submit reports to the appropriate regulatory authority or adjacent site owners where required. ▪ Notify the NSW EPA when required as outlined in Section 60(4) of the CLM Act.
Project Manager	▪ Provide competent and suitably qualified personnel for the investigation and/or monitoring of environmental matters. ▪ Liaise with the site owner on environmental management issues. ▪ Coordinate the activities of specialist sub-consultants, testing sub-contractors and project personnel with environmental assessment/monitoring responsibilities. ▪ Assess the suitability of specialist sub-consultants, testing organisations to carry out environmental assessment monitoring/responsibilities.
Environmental Consultant	▪ Undertake monitoring of landfill gas as outlined in this EMP to assess the integrity of the cap and gas mitigation system to validate that there is no unacceptable risk to site users as a result of HGG. ▪ Ensure QA/QC procedures according to the Australian Standards and NEPC guideline requirements are employed. ▪ The Environmental consultant will be complying with statutory requirements applicable to their work, reporting any incidents that may result health or environmental risk arising in connection with their work, and provide monitoring data to the Project Manager and Site Owner in a timely manner.

Responsible party	Task
	▪ Provide assessment reports the with recommendations, as required, based upon the results obtained during investigation / monitoring works.
Employees and Caretakers of the former Camide Landfill	▪ Notify the site owner or its representative of any situation which they consider may represent a potential health risk (such as unexpected finds). ▪ Respond to the directions of the site owner, project manager or other person with delegated authority with respect to environmental matters. ▪ Do not undertake any works (without the permission of the site owner) which may potentially cause environmental impacts (such as disturbance of the landfill capping layer).
Contractors and maintenance workers	▪ Subcontractors employed during any future works will have contractual obligations placed on them to comply with the EMP. As part of the tender briefing process, potential subcontractors should be made aware of their obligations to minimise the environmental impacts of their works. ▪ Subcontractors and suppliers will be required to attend inductions where specific environmental issues are addressed if deemed appropriate. They will be made aware of their requirements to adhere to the EMP in the induction program. ▪ Ensure that risks have been assessed and suitable control measures implemented where the site cap will be disturbed. ▪ Ensure the gas mitigation system and capping are protected during future works. ▪ Ensure that operatives are briefed on the presence of contaminated material below the cap and the potential for landfill gas in trenches, excavations, enclosed voids or within the gas mitigation system.

4.1 Enforcement of the EMP

The responsible party for execution of the EMP will be the site owner (currently CSR Building Products Limited) who will ensure that the works are undertaken and where required threshold exceedances acted upon. In addition to this responsibility the following legal enforceability is outlined in the sale of contract as detailed below.

"Pursuant to the sale contracts between CSR Building Products Limited and the owners of Stage 1 (DP1259616 Lot 202 and DP1264857 Lot 301) and Stage 2 (DP1214912 Lot 103). Trust in respect of the sale of Lots 101 & 102, 327 – 335 Burley Road, Horsley Park CSR Building Products Limited is:

1. responsible to perform any continuing obligations (including under the EMP) which relate to Lots 101, 102 (Stage1 Development) and 103 (Stage 2 Development), 327 – 335 Burley Road, Horsley Park These lots are currently identified in six maps as DP1259616 Lot 202, DP1264857 Lot 301 and DP1214912 Lot 103 respectively.

2. entitled to gain access to Lots 101, 102 & 103, 327 – 335 Burley Road, Horsley Park to enable it to discharge those obligations.

CSR Building Products Limited's rights and obligations continue until its obligations are discharged and, for clarity, do not end with settlement of its sale of Lots 101, 102 & 103, 327 – 335 Burley Road, Horsley Park."

4.2 Currency of the EMP

The site owner is responsible for the site conditions and management of the former Camide landfill to ensure that the EMP is executed and risk to surrounding land users does not exist. The validity of the EMP is to an extent based on the site conditions remaining stable as a closed landfill with regular monitoring and maintenance.

In the event that the site conditions change (i.e. additional development on the landfill) or conditions on adjacent and surrounding sites change (i.e. additional underground services, roads etc) there may be a requirement to assess these changes in a LFG risk assessment. Any minor changes that occur should be reported in the annual report and may not require a complete update of the risk assessment, however if considered significant by the Environmental Consultant a recommendation to review the pathway in a formal risk assessment should be made.

4.2.1 Perimeter Monitoring Network

The suitability of the perimeter monitoring network should be reviewed annually to ensure that the objectives of the EMP are being met. Consideration should be given to replace lost/destroyed wells to ensure the currency of the EMP and adequacy of the perimeter monitoring network to meet the minimum requirements of the intent of this EMP. This should be undertaken during the annual review as outlined in Section 5.

5 REPORTING/REVIEW

5.1 General

Quarterly monitoring will be reported in a summary letter outlining the works completed, weather conditions and a summary of exceedances. The report will also include tabulated data and compared to the relevant threshold criteria and a figure of the surface walkover survey. The quarterly report will be issued to the Site Owner who should act on any exceedances (if required).

Annual reporting of landfill gas results should be undertaken and submitted to the Site Owner for review and action where required. This report should include presentation of results over the previous 12 months. Any trends or significant results should be highlighted and explained. A review of the methodologies employed, and quality of the data collected should be presented within the annual report. The annual reporting should include an assessment of the risks present at the site boundary as per assessment procedures set out in NSW EPA (2019). Ongoing assessment of the Gas Characterisation Score as measured at the boundary will be utilised as an assessment of potential risk to adjacent properties and site users. Annual review of the monitoring program with regards to site configuration (i.e. development) should be documented in this reporting to capture any significant changes to the site configuration.

Technical reports must be prepared and signed by appropriately qualified and experienced persons. The NSW EPA recognises the CEnvP (SC) and CPSS CSAM certifications as providing a thorough process for certifying contaminated land consultants to an acceptable minimum standard of competency.

5.2 Incident Reporting

The EPA shall be notified of any incident that represents a threat to the environment. If methane is detected at concentrations above 1 % (volume/volume), the occupier must notify the EPA promptly. Within 14 days of this notification, the owner of the site must submit a plan to the EPA for further investigation and/or remediation of the elevated gas levels.

If an acute or explosive risk from ground gases is suspected then immediate action, including contacting relevant emergency services, should be taken to address the risk. It is possible that during ground gas investigations, the presence of gas that is positively or tentatively identified as originating from leaks in gas mains or other services may be detected. In these circumstances the service provider and, if appropriate, the emergency services (NSW Police, NSW Fire and Rescue) should be notified immediately.

5.3 Emergency Contacts

In the event of an incident which has resulted in an acute risk to human health or explosion then dial triple zero to request the required assistance. For incidents that are not considered to put human health in imminent danger then the Project Manager and/or the Site Owner should be notified. Details of the Project Manager and Site Owner should be provided during the site induction.

The list of contacts in Table 18 below outlines the contact details which may be called upon or require notification in an emergency situation.

Table 19 – Emergency Contacts List

Service	Number
All life threatening emergencies	000 (triple zero)
NSW State Emergency Services (SES) – emergency in floods and storms	132 500
NSW Police Assistance – Non-life-threatening calls	131 444
Inner West Council – Emergency after hours:	02 9392 5000
Ausgrid – Power failure, power lines down	13 13 88
Jemena Gas	13 19 09

Service	Number
Sydney Water	13 20 90
Telstra	13 22 03
Optus	13 13 44

5.4 Current and Future Site Conditions

The landfill site is currently a dormant site with no development presently within the allotment with the exception of stormwater bunds, detention pond and associated pits and pipes. The surface capping and access roads are at final leaves and are currently unsealed.

There are no proposed plans to develop the former Camide Landfill site with the only potential change in conditions to improve the gas management or in the event that gas migration measures are required to be implemented (i.e. active LFG extraction system.

In the event that future development is proposed or an active gas extraction system was proposed the works would likely have already triggered an assessment of LFG risk for the risk to on-site users.

5.5 Review

Annually the Environmental Consultant shall review the environmental performance of the site (to be included in the annual report). The review should:

- Analyse the monitoring results and compare them against the relevant statutory requirements, limits or performance measures/criteria and monitoring results of previous years.
- Identify any non-compliance over the last year and describe what actions were or are being taken to ensure compliance.
- Identify any trends in the monitoring data.
- Outline any actions that are required to be implemented to improve environmental performance.
- Identify any additional activities on-site and adjacent to site that may impact LFG migration pathways.
- Confirm or update the previous Characteristic Situation (CS) based on the update Gas Screening Values.

If actions or conditions arise that have altered the conditions of the site, then an additional LFG risk assessment should be completed to assess the risk to surrounding off-site users. In the event that the results of an updated LFGRA require additional LFG mitigation measures (i.e. active extraction) then the EMP should be reviewed and updated to reflect the significantly changes site conditions.

In undertaking a revision of the current EMP the following must occur:

- The site owner must inform the adjacent site owners of the change in conditions.
- If required notify the relevant authorities for environmental and planning changes (including but not limited to NSW EPA and Council).

6 REFERENCES

Biogas Systems Australia (BSA) 2019 – Landfill Gas Risk Assessment, Stage 1 Horsley Park NSW.

Biogas Systems Australia (BSA) 2019 – Environmental Management Plan Landfill, Horsley Park NSW (Stage 1).

Department of Environment, Climate Change and Water (DECCW, 2009) *Handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*.

Dever, S (2009) *Passive Drainage and Biofiltration of Landfill Gas: Behaviour and Performance in a Temperate Climate.* A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy. School of Civil and Environmental Engineering UNSW Sydney Australia.

Department of Environment, Climate Change and Water (DECC) 'Handbook *for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*' (March 2010)

DBD Environmental (2020) - *Landfill Gas Risk Assessment, Stage 2, 327 – 335 Burley Road, Horsley Park NSW*

DLA (2013) *Phase 1 Preliminary Environmental Site Assessment, Lot 1 in DP 106143, CSR Building Products, 327 – 335 Burley Road, Horsley Park.* DLA Environmental.

DLA (2013) *Phase 2 Detailed Environmental Site Assessment, Lot 1 in DP 106143, CSR Building Products, 327 – 335 Burley Road, Horsley Park*. DLA Environmental.

DLA (2014) *Remediation Action Plan, 327 – 335 Burley Road, Horsley Park NSW 2175.* DLA Environmental.

DLA (2018) *Transpiration Area Assessment, 327 – 335 Burley Road, Horsley Park NSW 2175*. DLA Environmental (ERM).

DLA (2018e) V*alidation Report, 327 – 335 Burley Road, Horsley Park NSW 2175*. DLA Environmental (ERM).

DLA (2017) *Former Camide Landfill - Landfill Gas Risk Assessment, 327 – 335 Burley Road, Horsley Park NSW 2175.*

DLA (2017) *Former Camide Landfill – Validation Sampling, Analysis and Quality Plan, 327 – 335 Burley Road, Horsley Park NSW 2175.* DLA Environmental (Pacific Environment).

EGIS Consulting Australia (1999) *'Landfill Closure Plan for Camide Landfill, Horsley Park'*.

ERM (2019) *Landfill Gas Data Summary – Stage 1, Horsley Park NSW.*

ERM (2019) *Landfill Well Cover Letter.*

NEPC (1999) *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013* (No.1). National Environment Protection Council.

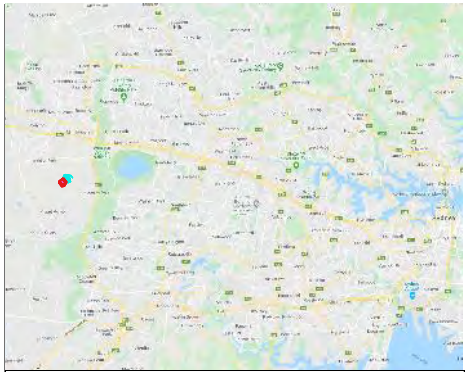
NSW EPA (2017) *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme 3rd edition.* New South Wales Environment Protection Authority.

New South Wales Environmental Protection Agency (2019), '*Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases*'.

VIC EPA Publication 1684, (February 2018), *Landfill gas fugitive emissions monitoring guideline.*

New South Wales Environmental Protection Agency (2016), '*Environmental Guidelines: Solid Waste Landfill*'.

Appendix A: FIGURES



LEGEND

- Stage 1
- Stage 2A
- Stage 2B
- Stage 2C
- Stage 3

Site Boundary

- Former Carmide Landfill

0 0.1 0.2 km

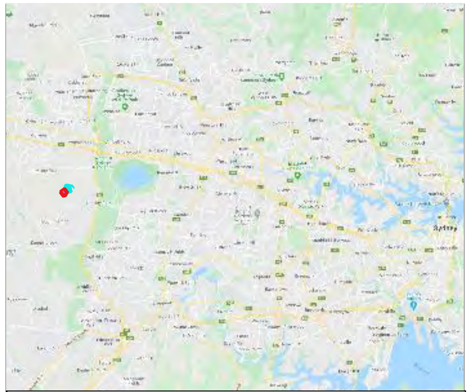
N

Job No. 0103	Revision No: 2
Project: CSR Horsley Park	
Aerial Image Source: Google December 2018	
Drawn by: MB	Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 1 - Site Location Plan

biogas systems



LEGEND

Site Boundary

Former Carmide Landfill

Trench

Existing Trench

New Trench

Monitoring Wells

LFG

New LFG Location

Damaged / Decommissioned

0 10 20 30 40 50 m

N

Job No. 0103 Revision No: 2

Project: CSR Horsley Park

Aerial Image Source: Google December 2018

Drawn by: MB Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 2 - LFG Well Locations

biogas systems

LEGEND

Former Camide Landfill

Existing Biofiltration Trench

New Biofiltration Trench

Extent of Waste

SW Pits

Monitoring Wells

LFG

New LFG Location

Damaged / Decommissioned

0 10 20 30 40 50 m

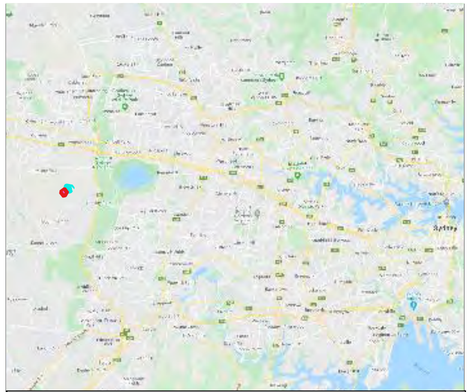
N

Job No. 0103	Revision No: 3
Project: CSR Horsley Park	
Aerial Image Source: Google December 2018	
Drawn by: MB	Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 3 - Site Stormwater Pit Location

biogas systems



LEGEND

Site Boundary

Former Carmide Landfill

Trench

Existing Trench

New Trench

Monitoring Wells

Background Location

0 50 100 150 200 m

N

Job No. 0103	Revision No: 1
Project: CSR Horsley Park	
Aerial Image Source: Google December 2018	
Drawn by: MB	Checked by: JH

Note: Survey data has been used where available. Existing biofiltration trench and extent of waste have been replicated from Calibre plans.
Existing biofiltration trench constructed in 2005.
New biofiltration trench constructed between 2017 and 2019.

Figure 4 - Background LFG Well Location

Appendix B: CARBON DIOXIDE BACKGROUND CONCENTRATIONS TABLE

Table 1
Background Concentrations for Methane and Carbon Dioxide (Sept 2020)

Location	Stabilised Background Concentrations (1st September 2020)		Well Location inside /outside biofiltration trench	Well Location around the landfill
	CH_4	CO_2		
ID number	% v/v	% v/v		
GM1	0.0	6.4	Outside	EASTERN
GM6	0.0	6.4	Outside	WEST
GM7	0.0	6.4	Outside	
GM8	0.0	6.4	Outside	
GM9	0.0	6.4	Outside	
GM10	0.0	6.4	Outside	
GM12	0.0	6.4	Outside	NORTHERN
GM13	0.0	6.4	Outside	
GM13A	0.0	6.4	Outside	
GM14	0.0	6.4	Outside	
GM15	0.0	6.4	Outside	
GM15A	0.0	6.4	Outside	
GM17	0.0	9.5	Outside	
GM18	0.0	6.4	Outside	
GM20	0.6	10.3	Outside	EASTERN
GM21	1.0	6.4	Inside*	
GM22	40.9	21.1	Inside*	
GM23	0.0	9.8	Outside	
GM25	0.0	14.4	Outside	
GM26	0.0	17.2	Outside	
GM27	0.3	16.2	Outside	
GM28	25.3	19.7	Inside*	SOUTHERN
GM29	0.1	12.9	Inside*	
GM30	0.0	6.4	Outside	
GM31	0.1	12.5	Outside	
GM32	0.0	6.4	Outside	
GM33	0.2	6.4	Outside	EASTERN
GM34	0.1	6.4	Outside	
GM35	0.0	6.4	Outside	
GM36	0.0	6.4	Outside	
GM37	0.0	6.4	Outside	
GM38	0.0	6.4	Outside	SOUTHERN
GM39	0.0	6.4	Outside	
GM40	0.0	6.4	Outside	
GM41	0.0	6.4	Outside	
GM42	0.0	6.4	Outside	
GM43	0.0	4.9	Outside	Background
GM44	0.0	6.4	Outside	EASTERN
LG8	0.0	6.4	Outside	WESTERN
LG9	0.0	6.4	Outside	
LG10	0.0	6.4	Outside	

Note: The results are taken from ERM Raw data provided for review and the previously reported VGT results for wells GM6-GM10

*'These well locations are located on the inside of the BT in close proximity to the waste and are only monitored to assist in future interpretations rather than threshold criteria

Appendix C: TEMPLATE FIELD FORMS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Site:			Occupier:		Licence/notice number:				Date:		Start time:			Finish time:		
2	Monitoring personnel:					Monitoring equipment:				Date of last calibration:				Bump test:			
3	Atmospheric pressure at start (mb):					Rising or falling: Stable/Falling				Weather and ground conditions:							
4					Peak (% v/v)			Stabilised (% v/v)			Stabilised (ppm)		Stabilised (% v/v)				
5	ID	Start time	Atmospheric pressure (mb)	Relative pressure (mb)	CH_4	CO_2	Min O_2 (% v/v)	CH_4	CO_2	O_2	CO	H_2S	Bal	Aspiration time when stabilised readings were taken, add note if not stabilised	Flow (l/h)	Depth to water (mBGL)	Comments e.g. bore condition (sealed, unsealed, CH_4 CO_2 CH_4 CO_2 O_2 Balance desiccated bentonite etc)
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	

Instrument				
Serial number				
Next manfacturer's cal due				
Gas mixture	100 ppm isobutylene and 2.5 % v/v methane balance nitrogen			

Date	**Instrument zeroed** Y/N	**Result** Within limits (+/- 5%)	**Pump, filters and battery check**	**Signature**

Date	Instrument zeroed Y/N	Result Within limits (+/- 5%)	Pump, filters and battery check	Signature

Appendix D: MONITORING PROCEDURES

LANDFILL GAS WELL MONITORING PROCEDURE

The following provides a detailed repeatable procedure for recording gases from monitoring wells in Australia and has been adapted as follows:

1. Prior to arrival at the site, monitoring personnel should complete a brief desktop review of the locations to be monitored to develop an understanding of the number and types of locations to be monitored and the likely time required to complete the monitoring.

2. Before starting monitoring, turn the instruments on in a location unlikely to be affected by LFG (or other air contaminants). Confirm that the instruments give readings that are considered likely for these conditions (generally <0.1% methane, <0.1% carbon dioxide, 21.0% oxygen, 79% balance (nitrogen) for an extractive landfill gas analyser and 0.0 ppm for a low-concentration methane detector). Bump test the instrument and recalibrate if outside tolerances of +/- 5%.

3. Record background information, including site identification, start time of the monitoring round, date, prevailing weather and recent weather conditions, current ground conditions, instruments used (and serial numbers), person completing monitoring and so on. During the monitoring any observations of significance (like changes in weather) will also be noted.

4. Visually inspect the monitoring well and, without breaking the gastight seal, note any issues or deficiencies that may prevent representative data being obtained (such as landfill gas odours, unsealed bores, screened sections of pipework above ground level, failed bentonite seal or an open gas tap). Note whether the bore is locked and secure.

5. Connect the sample tubing to the monitoring well and record the differential pressure, including whether the pressure is positive (+) or negative (–). This must be done in a manner that prevents the pressure in the well, being altered prior to measurement. If the well is fitted with a gas sampling tap, connect the sample tubing to the instrument and the gas sampling tap prior to opening the tap. If the well is fitted with a quick-connect coupling, connect the sample tubing to the instrument before being fitted to the bore quick-connect fitting. Record the differential pressure then the well flow in litres per hour. Flow and pressure must be recorded before starting the instrument pump or measuring gas concentrations as the pump may remove any accumulated gas in the well headspace leading to a false negative.

6. Record the atmospheric pressure. Turn on the pump and record the peak and stabilised concentrations of methane and carbon dioxide and other gases as required that may be required.

7. If the monitored gas concentrations have not reached a stabilised concentration (stable gas concentration (±0.3 %v/v) after monitoring for a short period (3 minutes) after three minutes of continuous sampling record the final gas concentrations, along with the direction and rate of change in concentration (rapidly or slowly increasing or decreasing) and note them as non-stabilised final readings.

8. If very high LFG concentrations are recorded on the instrument (>30 %v/v methane and/or 30 %v/v carbon dioxide), then monitoring of the well should be extended beyond three minutes to try to further determine the persistence of the gas detected within the well.

9. Once the peak and stabilised concentrations have been recorded, fully close the gas sampling tap (if applicable) and disconnect the sample tubing from the gas tap.

10. All recording of variables will be carried out using the GA5000's in-built logging software combined with proprietary software. This reduces risk of transcription error and as logging software eliminates the need for pencil and paper it means that delays caused by inclement weather are reduced.

GAS IN ENCOLOSED STRUCTURES AND SERVICE PIT PROCEDURE

The Victorian EPA developed the '*Landfill Gas Fugitive Emissions Monitoring Guidelines*', Publication 1684 (February 2018) provides the most comprehensive protocol for recording gases from utility and service pits in Australia and has been adapted as follows:

1. Prior to arrival at the site, monitoring personnel should complete a brief desktop review of the locations to be monitored to develop an understanding of the number and types of locations to be monitored and the likely time required to complete the monitoring. The instrument should also be checked for calibration information and bump checked with a certified gas mixture.

2. Before starting monitoring, turn the instrument on in a location unlikely to be affected by landfill gas (or other air contaminants where possible). Confirm the instrument is giving readings considered likely for the conditions. Note that the global background methane concentration is ~ 1.8 ppm (Myhre et al, 2013). If using an FID or Eagle, it can be influenced by emissions from vehicles and industry/commerce. If a busy road or active industrial or commercial emissions are observed nearby, note their effect on the readings of the RKI Eagle before commencing monitoring of the subsurface services.

3. Note background information, including site identification, start time of the monitoring round, date, atmospheric pressure, prevailing weather and recent weather conditions, current ground conditions, instruments used (calibration and serial numbers), person completing monitoring and so on. During monitoring any observations of significance (like changes in weather) should be noted.

4. Record the type and location of the first monitoring location. It is often useful to record the address (street number and name) of the monitoring location and/or GPS coordinates.

5. Visually inspect the location and note any issues or deficiencies with the location that may prevent representative landfill gas monitoring data being obtained (this might include landfill gas odours, unsealed service or inaccessible service).

6. Record factors that may influence the method of monitoring, and that may be useful to record, include:
   - dimensions of the subsurface service
   - sealing of the subsurface service
   - accessibility of the subsurface service
   - any known landfill gas dissipation measures
   - weight of access panels or covers into subsurface services
   - locking mechanisms on access panels or covers (if applicable).

7. Turn on the instrument and insert the probe into the metal grate. Attempt to monitor across the lateral and vertical profile of the service to account for the density of methane which may be venting from different areas inside the service pit.

8. Record the highest concentration of methane and approximately stable concentration should this occur. Due to the resolution of the instrument used and the mixing of gases in the sub-surface services with air, the ppm readings rarely stabilise to a set number but will tend to stay within a range, this range should be recorded. Particular attention will be focused on the pipe inlet (preferential lateral migration) and the valve pit walls/box itself (to assess LFG moving directly from the nearby soil/fill in contact or close to the box).

BUMP TEST PROCEDURE

To check the accuracy of the in-house or rented gas analysers, the Field Technicians conduct calibration checks according to the following approach:

1. Functional (bump) tests are performed during each data download. The bump tests are conducted prior to and after the full calibration for each instrument. A bump test involves exposing the instrument to a calibration gas mixture of known oxygen and methane concentrations to demonstrate instrument response. The bump test verifies the alarm is triggered when gas of a sufficient concentration is applied and assesses whether the instrument accurately measures concentration when a gas of known concentration is applied. The post calibration bump test verifies the instrument has been calibrated successfully. The bump test procedures include the following steps:
2. Attach the Gas Alert clip to the Technician's top pocket and turn on. If at any stage the alarm sounds, turn off gas and vacate the area until clear.
3. Multi-gas containing a known concentration of oxygen, methane concentration, carbon dioxide, hydrogen sulphide and carbon monoxide is applied to the sampling inlet to check the sensor. The Field Technician attaches the tubing to the sample inlet on the instrument and activates the manually controlled regulator. The concentration of gases is selected to be like the range of gases expected to be recorded on site e.g. if the site instrumenting was for perimeter well compliance then methane calibration Gas range would be about 1.0 to 2.5 % v/v.
4. With the calibration gas applied to the sample inlet, the LEL reading is allowed to stabilise (30 seconds approximately), and recorded on a calibration field sheet, or in the electronic workbook format. A maximum margin of ±5 % in the reading is acceptable.
5. Full calibration of gas instruments is conducted during each visit or when the above field verification test is outside the acceptable range. A full calibration consists of a fresh air calibration and a multi-sensor field calibration using a known gas mixture. The fresh air calibration is conducted in the open air outside of dwellings or enclosed areas. Both types of calibrations are automatically performed by the instruments once selected.
6. In the event the full calibration fails, the malfunctioning instrument is replaced with an instrument that meets all requirements (including calibration) and specifications. The malfunctioning instrument is returned to the Equipment Manager for inspection and assessment, who attempts to determine whether the unit must be returned to the supplier for a factory calibration. Until the factory calibration is performed on the malfunctioning instrument, it is replaced by another, fully calibrated instrument