SAFE WORK & ENVIRONMENTS

REMEDIATION ACTION PLAN (RAP)

57 STATION ROAD, SEVEN HILLS NSW 2147

(LOT B, DP404669)

Author and Document Control

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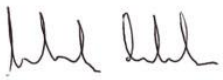
Prepared For:

Chris Bignell
Site Manager, Construction NSW
FDC Construction (NSW) Pty Ltd
22-24 Junction Street,
Forest Lodge NSW 2037

Prepared by:



Andrew Roberts
Principal Environmental Scientist
Certified Environmental Practitioner (No:1530)
Licenced Asbestos Assessor (AA00015- ACT)

Prepared and QC by:

Rune Knoph (MappSci OHS)
Principal WHS&E Consultant
Licenced Asbestos Assessor

Safe Work and Environments Pty Ltd (ABN 88127010995)

Sydney Office:
Suite 7/103 Majors Bay Road
Concord NSW 2137
Phone: 02 8757 3611

Canberra Office:
PO Box 230
Dickson, ACT 2602
Phone: 02 6247 0022

Email: enquiries@swe.com.au
Web: www.swe.com.au

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EXECUTIVE SUMMARY

Safe Work and Environments Pty Ltd (SWE) was engaged by FDC Construction (NSW) Pty Ltd (FDC) to prepare a remediation plan for the current redevelopment project at 57 Station Road, Seven Hills NSW 2147 (Lot B, DP DP404669) herein referred to as the 'site'. Fragments of asbestos containing material (ACM), in the form of fibre cement sheeting, as well as an underground petroleum storage tank (UPST) have been identified to the site. Upon commencement of civil excavation work, the significant disturbance of soil has revealed numerous fragments of ACM sheeting as well as a previously unidentified UPST. Widespread asbestos contamination has been identified to topsoils to a significant portion of the site in recent contamination assessments carried out by SWE.

Initial detailed environmental investigation (DSI) identified some forms of soil contamination but did not detect any asbestos contaminated soils of significance. Two underground petroleum fuel tanks (UPSTs) were, however, identified, along with low level hydrocarbon soil contamination and odour issues. These two UPSTs have been remediated and validated as appropriately removed prior to commencement of the current site development works. To the knowledge of SWE, no site-specific Remedial Action Plan (RAP) has previously been developed for this site. Subsequently unexpected finds have been identified during civil works, with further assessments commissioned to delineate the extent of asbestos contaminated soils. Advice has been prescribed via an Asbestos Quantification Assessment (SWE, March 2022), which recommended the development of a RAP or similar document in consideration of the existing remedial works, site-specific civil works requirements, planned remediation of asbestos contamination on site and associated onsite management options.

An unexpected UPST was identified during the asbestos in soil quantification assessment across the site. This unexpected find will be further delineated as part of the remedial works planned for the site under the supervision of suitability qualified environmental consultant (SQEC) from SWE and undertaken by a specialist nominated suitability qualified and experienced UPST removal contactor . The lateral and vertical extent of the hydrocarbon impacted soil, as well as the size and contents of the identified UPST, will be investigated as part of the implementation of this RAP.

This RAP details the works required to remediate the site in consideration of the proposed site redevelopment, to render the site suitable for the proposed use. The remediation works are to include the options of remediation by excavation and landfill disposal of asbestos contaminated soils and UPST and surrounding soils above the Site Assessment Criteria (SAC), as well as on-site retention of asbestos impacted soils found to be below the SAC subsurface level at completion of work.

This report documents the procedures for site remediation in accordance with the following:

- *'National Environmental Protection Council (NEPC) (1999) 'National Environment Protection (Assessment of Site Contamination) Measure 1999'* (amended 2013), and herein referred to as (ASC NEPM (2013)).
- Safe Work Australia (2018) *'Code of Practice on How to Safely Remove Asbestos'*.
- WorkCover NSW (2014) *'Guidelines for Managing Asbestos in or on Soil'.*
- NSW EPA (2020) '*Consultants Reporting on Contaminated Land, Contaminated Land Guidelines'*.
- NSW EPA (2019) *'Underground Petroleum Storage Systems Guidelines for implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019'*.
- WA Department of Health (DOH) (2021) '*Guidelines for the Assessment Remediation and Management of Asbestos Contaminated Site in Western Australia'*, and herein referred to as the (WA Guidelines).

The objectives of this Interim Asbestos Remediation Action Plan (RAP) are to:

- Render the site suitable for the proposed development from a contamination viewpoint.

- Reduce the human health risks posed by site contamination to an acceptable level.

The scope of the interim asbestos RAP has been established on the basis of the findings of the previous investigations (refer to **Section 2.6**). The scope of the RAP is to:

- Review available background documentation on the site including previous reports, details of the redevelopment and land use.
- Establish remedial goals and remedial acceptance criteria.
- Definition of data quality objectives (DQOs) for the validation works.
- Define the requirements and locations for replacement of asbestos impacted soils to subsurface levels.
- Provide the procedures required for remediation including material excavation and off-site disposal at an EPA licensed landfill.
- Outline the validation requirements for the site including methodology and validation acceptance criteria.
- Document environmental and WHS site controls to minimize the impact of remedial activities on the surrounding site areas, and
- Outline the requirements for appropriate WHS procedures to be adopted for the remediation works so as not to pose a threat to the health of site workers or users.

As the site is and will remain a commercial/industrial site Health Investigation Level (HIL) D (Commercial/Industrial) is considered the most appropriate land-use category to be adopted for Site Assessment Criteria (SAC) in consideration of:

- The site's proposed re-development as a commercial/industrial site.
- The adoption of land-use category HIL D by previous assessments and this RAP.

SWE propose that a combination of onsite retention and excavation and landfill disposal (detailed in **Section 5.1.2)** would provide the most practical and cost-effective scope for the remediation works, whereby:

- The asbestos impacted soils contamination found to be above SAC are excavated and disposed of to a licenced landfill facility.
- The content of the UPST and hydrocarbon impacted soil surrounding the pit found to be above SAC are excavated and disposed of to a licenced landfill facility.
- Asbestos impacted soil contamination below the SAC are to be relocated and reused on site at subsurface levels.
- In locations of remaining asbestos impacted soil contamination (below SAC), place delineation layer over asbestos contaminated soil and ensure a minimum of 0.2m topsoil or other encapsulating surface is installed overlying the asbestos impacted soils.
- Nominated suitability qualified environmental consultant (SQEC) and Licenced Asbestos Assessor (LAA) to inspect and confirm the appropriate replacement and reuse of soils and completion of excavation and disposal work to above SAC areas.
- Nominated SQEC and LAA to provide asbestos clearance report and long-term management plan specific to the management requirements of the contained / in-situ asbestos impacted soil.

A long-term asbestos management plan (AMP) will be required upon completion of remediation to manage the asbestos impacted soil remaining to the site. The AMP would inform the required management of the remaining asbestos contaminated land and provide procedures for any future intrusive work past the capping layer. Following the completion of the remediation works the nominated SQEC and LAA will undertake validation assessments in accordance with this interim asbestos RAP with demonstrated Data Quality Objectives (DQOs) and Quality Assurance/ Quality Control (QA/QC) procedures to ensure the repeatability and reliability of the results. They will be based broadly in accordance with the seven-step data quality

objective process, as defined in Australian Standard (AS) “Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and Semi-volatile Compounds” (AS 4482.1 – 2005).

The purpose of this interim asbestos RAP is to provide a framework to manage the remediation of the identified non-friable and friable asbestos impacted soils at the Site via excavation and disposal at a licenced land-fill facility and on-site relocation and reuse. Successful remediation of the identified contamination will enable the site to be determined as suitable for the proposed development.

It is considered that conformance with this interim asbestos RAP will minimize the potential for environmental impacts during the remedial works at the site.

A validation assessment report for the remediation of the site will be prepared by a SQEC and LAA. It will be prepared in general accordance with the NSW EPA (2020) ‘*Consultants Reporting on Contaminated Land, Contaminated Land Guidelines*’) and other appropriate EPA endorsed guidance documentation.

1 INTRODUCTION

Safe Work and Environments Pty Ltd (SWE) was engaged by FDC Construction (NSW) Pty Ltd (FDC) to prepare a remediation plan for the current redevelopment project at 57 Station Road, Seven Hills NSW 2147 (Lot B, DP DP404669) herein referred to as the 'site'. Fragments of asbestos containing material (ACM), in the form of fibre cement sheeting, as well as an underground petroleum storage tank (UPST) have been identified to the site. Upon commencement of civil excavation work, the significant disturbance of soil has revealed numerous fragments of ACM sheeting as well as a previously unidentified UPST. Widespread asbestos contamination has been identified to topsoils to a significant portion of the site in recent contamination assessments carried out by SWE.

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This RAP details the works required to remediate the site in consideration of the proposed site redevelopment, to render the site suitable for the proposed use. The remediation works are to include the options of remediation by excavation and landfill disposal of asbestos contaminated soils and UPST and surrounding soils above the Site Assessment Criteria (SAC), as well as on-site retention of asbestos impacted soils found to be below the SAC subsurface level at completion of work.

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1.1 Objectives

The objectives of this interim asbestos RAP are to:

- Render the site suitable for the proposed development from a contamination viewpoint.
- Reduce the human health risks posed by site contamination to an acceptable level.

1.2 Scope of Works

The scope of the interim RAP has been established on the basis of the findings of the previous investigations (refer to **Section 2.6**). The scope of the interim RMP is to:

- Review available background documentation on the site including previous reports, details of the redevelopment and land use.
- Establish remedial goals and remedial acceptance criteria.
- Definition of data quality objectives (DQOs) for the validation works.
- Provide the procedures required for remediation including material excavation and off-site disposal at an NSW Environmental Protection Authority (EPA) licensed landfill.
- Outline the validation requirements for the site including methodology and validation acceptance criteria.
- Document environmental and work health and safety (WHS) site controls to minimize the impact of remedial activities on the surrounding site areas; and
- Outline the requirements for appropriate WHS procedures to be adopted for the remediation works so as not to pose a threat to the health of site workers or users.

2 SITE INFORMATON SUMMARY

2.1 Site Location

The key features required to identify the site are summarised in **Table 1**, the site location is shown in **Figure 1**.

Table 1: Summary of Site Location Details.

Site Information	Description
Street Address:	57 Station Road, Seven Hills NSW 2147
Lot / Deposited Plan:	Lot B, DP404669
Geographical Location:	Latitude: -33.77902039239814 Longitude: 150.94820410979625
Area:	Approximately 26,000m^2
Local Government Area:	Blacktown Council
Current Land Use:	N/A – Formerly car wrecker & timber mill
Proposed Land Use:	Data Centre
Zoning:	IN1 – General Industrial
Land Custodian/Owner:	Microsoft
Client/Principal Contactor:	FDC Construction (NSW) Pty Ltd (FDC)

2.2 Surrounding Environment

The site is located at the edge of an industrial zone, near the boundary between Seven Hills and Toongabbie, on the northern side of Station Road. The site is immediately south of Blacktown Creek. The following land uses provide the immediate surrounds to the site:

- North – Blacktown Creek, with further industrial zoned land beyond.
- South – Station Road, a Sydney trains line, with residentially zoned land beyond.
- East – McCoy Park, a large reserve, and further residentially zoned land, and
- West – Industrial zoned land of mixed use.

2.3 Topography

The southern division of the site, designated by the client “SYD-09” is relatively flat, with a drop to the north approaching the middle of the site. The area beyond this embankment, designated “SYD-08”, again presents a relatively flat surface, before a slight slope into Blacktown Creek.

2.4 Geology & Hydrogeology

Previous reports indicated that the site is underlain by Wianamatta Group shales The DSI, undertaken by RCA Australia encountered fill to depths of approximately 0.1m to 0.5 m overlying silty and sandy clay, with refusal at rock between 5 and 7 m.

The potential for viable groundwater abstraction in the shallow aquifer and use of groundwater was considered to be low based on the hydrogeological information and the subsurface conditions encountered during the DSI.

Consumption of groundwater is not expected to occur. Use of groundwater is not proposed as part of the

development.

Considering the local topography and surrounding land features, the anticipated groundwater flow is towards Blacktown Creek to the north.

2.5 Underground Services

It remains the responsibility of the principal site contactor (FDC) to undertake all Dial Before You Dig (DBYD) enquiries and underground service/infrastructure location, identification, isolation, diversion and protection works onsite during all excavation works undertake onsite including all remedial works onsite.

2.6 Previous Investigation Reports

Table 2 below provides a summary of previous environmental assessments pertaining to the site provided to SWE. The table also outlines the sources and extent of the contaminants of concern based on the results of these reports and subsequent soil assessments by SWE.

Table 2: Previous Reports-AECs & Potential Contaminants

Source	Summary of Site Investigations
SYD08/SYD09 (04AUS) Site Due Diligence Report, LCI, December 2020	Soil sampling identified hydrocarbon levels in excess of NEPM HSL-D commercial/industrial levels of contamination, as well as asbestos, and recommended further investigation to delineate the extent of contamination and location of any USTs, followed by the removal of fill materials subject to contamination (generally found to be the top 100-300mm of fill soils onsite)
Update of Phase 2 Environmental Site (Contamination) Assessment 57 Station Street, Toongabbie. RCA Australia, February 2021	The Detailed Site Investigation undertaken by RCA Australia aimed to investigate and delineate the extent of hydrocarbon and asbestos contamination to site, if any, as well as any other potential contaminants. No evidence of asbestos contamination was encountered in soil samples. Multiple areas of hydrocarbon contamination were identified in soil samples, nominally in the vicinity of two recently identified USTs (no site figure or sampling map was provided within the body of the report). Works were undertaken concurrently with the production of this report in order to remove and validate the UPSTs and associated contamination. Hydrocarbon contamination outside the immediate vicinity of the identified UPSTs was judged to not exceed site assessment criteria.
UPST Validation Report, 57 Station Street, Toongabbie. RCA Australia, March 2021	Validation of the removal of UPSTs and excessive hydrocarbon contamination encountered to the south-central portion of SYD09 in the previous report
Hazardous Materials Survey, Safe Work & Environments, October 2021	Hazardous materials building audit of extant structures across site prior to demolition. Notably, asbestos identified to multiple areas of the target structures in the form of asbestos fibre cement sheeting and zelemite backing boards.
Preliminary Asbestos Assessment, Safe Work & Environments, March 2022	Preliminary assessment commissioned subsequent to the identification of asbestos fibre cement fragments to topsoils around site during preliminary civil works. The assessment positively identified fragments of AC to numerous locations to the north-eastern (rear) section of the site and two isolated findings to the south-western section of the site. Due to the observed frequency and widespread distribution of asbestos cement fragments to the ground surface, it was judged appropriate that the site be assessed with regards to the NSW EPA issued NEPM Guidelines for Contaminated Lands.
Asbestos in Soil Quantification Assessment, Safe Work & Environments, March 2022	Asbestos was positively identified to nineteen (19) of seventy-two (72) sampling locations, distributed via a combination of gridded and judgemental sampling locations. Five (5) of these locations were judged to be above the site assessment criteria (NEPM HIL-D) for non-friable asbestos. Furthermore, three (3) sampling locations exceeded the NEPM criteria for friable asbestos.

Source	Summary of Site Investigations
Unexpected Underground Petroleum Storage Tank (UPST) Find Letter, Safe Work & Environments, March 2022	Identification and summary of observations as well as interim management recommendations regarding the unexpected finds of a previously unidentified UPST encountered onsite during the Asbestos in Soil Quantification Assessment undertaken by SWE
Unexpected Finds of Hydrocarbon Impacted Soils, Safe Work & Environments, March 2022	Assessment of an unexpected finds of hydrocarbons in soil encountered during the Asbestos in Soil Quantification Assessment undertaken onsite by SWE. The assessment found that this UF did not need any further assessment or remediation. This UF is a separate UF to the UPST UF mentioned above.

3 CONCEPTUAL SITE MODEL

3.1 Sources / Potential Contaminants

Based on the site history, identified contamination has been determined to be currently limited to asbestos contaminated soils. The potential contaminants and Areas of Environmental Concern (AEC) are listed below in **Table 3**.

Table 3: Potential Contaminants of Concern

AEC	Historical Activities	Dispersion Mechanism	Potential Contaminants
SYD-08 and SYD-09	Historical fill importation / leveling for construction	The potential for exposure is associated with construction and excavation works, and future use of the site (if remediation is not successful).	Non-Friable Asbestos
SYD-08 and SYD-09	Historical fill importation / leveling for construction	The potential for exposure is associated with construction and excavation works, and future use of the site (if remediation is not successful).	Friable Asbestos (Asbestos Fines as per NEPM)
SYD-09	UPSTs and associated infrastructure	The potential for exposure is associated with construction and excavation works, and future use of the site (if remediation is not successful).	Hydrocarbons (TRH, BTEX, PAHs and lead)

3.2 Exposure Pathways

3.2.1 Asbestos Containing Materials

Non-friable and friable asbestos containing materials have been identified within topsoils and to a depth of 0.2-0.3m at nineteen locations. The contaminant migration and exposure pathways include the inhalation of dust or air bound contaminants during soil disturbance activities.

3.2.2 Underground Petroleum Storage Tank

An unexpected find (UF) of an underground (petroleum) storage tank (UPST) has been identified onsite. Contaminant migration and exposure pathways ys relevant to the receptors of the hydrocarbon contamination impacted soil include ingestion, dermal absorption and inhalation of dust. Potential for exposure is associated with the construction and excavation works, and future use of the site (if remediation is not successful).

3.3 Receptors

The perceived potential contamination receptors include:

- Future site users.
- Civil workers undertaking remediation works.
- Construction workers.
- Neighbouring properties.
- Drainage structures downgradient of the site, and
- Future vegetation at the site.

4 ASSESSMENT CRITERIA

4.1 Reference Guidelines

SWE have adopted the most appropriate Site Assessment Criteria (SAC) in accordance with current state guidelines. Where available, Australian and NSW EPA endorsed guidelines have been referenced in preference to international standards.

4.2 National Environment Protection Measure (NEPM)

The NSW EPA has endorsed the use of the Health Investigation Levels (HILs) given in the 2013 National Environment Protection (Assessment of site Contamination) Measure (NEPM) 'Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater'. The NEPM provide a framework for risk-based assessment of soil and groundwater contamination. Health Screening Levels (HILs) are provided for four (4) land-use categories:

Table 4: Summary of NEPM Land-use Categories

NEPM	Description of Land-use Categories
HIL A	Residential A with garden/accessible soil also includes children's day care centers, preschools and primary schools.
HIL B	Residential B with minimal opportunities for soil access; includes buildings with fully & permanently paved yard space such as high-rise buildings & apartments.
HIL C	Recreational C includes public open space such as parks, playgrounds, playing fields (e.g., ovals), secondary schools and unpaved footpaths.
HIL D	**Commercial/industrial D includes premises such as shops, offices, factories and industrial sites.**

HIL D is considered the most appropriate land-use category to be adopted for Assessment Criteria in consideration of:

- The site's proposed re-development as a commercial/industrial site.
- The development design's requirement for considerable landscaped / garden space, and
- The adoption of land-use category HIL D by previous assessments.

4.3 Aesthetic Criteria

The ASC NEPM (2013), Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater advises that there exist no numeric Aesthetic Guidelines. However, site assessment requires balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity. General assessment considerations include:

- That chemically discoloured soils or large quantities of various types of inert refuse, particularly if unsightly, may cause ongoing concern to site users.
- The depth of the materials, including chemical residues, in relation to the final surface of the Site, and
- The need for, and practicality of, any long-term management of foreign material.

4.4 Asbestos Guidelines

Management of asbestos shall also be conducted with consideration of the following NSW EPA endorsed and industry guidelines:

- ASC NEPM (2013).

- National Occupational Health and Safety Commission (NOHSC) 'Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust' [NOHSC: 3003 (2005)].
- Safe Work Australia (2018) *'Code of Practice on How to Safely Remove Asbestos'*.
- WorkCover NSW (2014) *'Guidelines for Managing Asbestos in or on Soil'*, and
- NSW EPA (2020) *'Consultants Reporting on Contaminated Land, Contaminated Land Guidelines'*.
- WA Guidelines.

4.5 Adopted Asbestos in Soil Assessment Criteria

The ASC NEPM (2013) Schedule B2 - Guideline on site characterisation documents Health Screening Levels (HSLs) for asbestos levels in soil adopted from the WA Guidelines. The Guidelines only apply to asbestos materials in soils and define three (3) primary forms of asbestos in soil:

i. ***Bonded Asbestos Containing Material*** (***ACM)*** – non-friable matrix material generally observed as stable fragments in soil unless subjected to aggressive disturbance, prolonged saturation or fire,

ii. ***Fibrous Asbestos*** (***FA)*** – friable and fibrous material. Friable asbestos materials are those that can be crumbled, pulverised or reduced to powder by hand pressure when dry, and

iii. ***Asbestos Fines*** (***AF)*** – sub-7mm material including free fibre. Respirable asbestos fibres are generally greater than five micrometers (µm) long and no wider than 3 µm .

As the site has previously been, and for the purposes of this report, remains designated a commercial /industrial site, the adopted site assessment criteria (SAC) for asbestos is shown in **Bold** as outlined in **Table 5**.

Table 5: SAC for Asbestos in Soil (ASC NEPM 2013)

Form of Asbestos	Health Screening Level (HSL) (w/w%)			
	Residential A[1]	Residential B[2]	Recreational C[3]	Commercial/ Industrial D[4]
Bonded ACM	0.01%	0.04%	0.02%	**0.05% (SAC)**
FA and AF (Friable asbestos)	**0.001% (SAC)**			
All forms of asbestos	**No visible asbestos for surface soil (SAC)**			

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
3. Recreational C includes public open space such as parks, playgrounds, playing fields (e.g., ovals), secondary schools and unpaved footpaths.
4. Commercial/Industrial D includes premises such as shops, offices, factories and industrial sites.

4.6 Adopted UPST Site Assessment Criteria

The adopted SAC for hydrocarbons associated UPST associated infrastructure is outlined in with The ASC NEPM (2013) Schedule B1 - Guidelines on investigation levels for soil and groundwater.

4.6.1 NEPM Health Investigation & Screening Levels

HSLs are applicable to selected petroleum compounds and fractions to assess the risk to human health via inhalation and direct contact pathways. HSL assessment criteria for potential vapour intrusion must be selected based on the land use, medium (sand, silt, clay) and depth. HSL assessment criteria has been drawn from land use category *HSL D (Commercial / Industrial)* within Table 1A (3) of the NEPM (2013). In keeping with the findings of previous assessments and field observations made during this assessment, a sandy soil textures have been adopted. The HSL SAC applicable to the site are also provided within Table D below:

Table 6: HIL & HSL Soil Assessment Criteria for Land Use Commercial / Industrial D

Analyte		Units	HIL	HSL 0 - <1m (sand)	HSL 1 - <2m (sand)	HSL 2 - <4m (sand)	HSL 4m+ (sand)
Metals & Metalloids	Lead	mg/Kg	1500	-	-	-	-
Polycyclic Aromatic Hydrocarbons	Benezo(a)pyrene	mg/Kg	40	-	-	-	-
	Total PAH	mg/Kg	4000	-	-	-	-
BTEXN	Benzene	mg/Kg	-	3	3	3	3
	Toluene	mg/Kg	-	NL	NL	NL	NL
	Ethyl benzene	mg/Kg	-	NL	NL	-	-
	Xylenes	mg/Kg	-	230	NL	NL	NL
	Naphthalene	Mg/Kg	-	NL	NL	NL	NL
Total Recoverable Hydrocarbons	F1 TRH C6-C10	mg/Kg	-	260	370	360	NL
	F2 TRH C10-C16	mg/Kg	-	NL	NL	NL	NL

4.6.2 NEPM Ecological Investigation & Screening Levels

Ecological Screening & Investigation Levels (ESLs & EILs) are used to assess select contaminants in the top two (2) metres of soil is based on the land use settings (areas of ecological significance, urban residential areas and public open space and commercial and industrial land uses) and soil texture. The assessment criteria for EILs have been drawn from the *Commercial and Industrial* assessment criteria within Table 1B (4) and ESLs have been drawn from the *Commercial and Industrial / Coarse soil texture* assessment criteria within Table 1B (5) are provided within Table E below. Site specific ESL and EIL will be determined for aged contaminants based on soil characteristics in accordance with the NEPM (noted with *).

Table E: Ecological Investigation and Screening Levels Assessment Criteria for Residential Land Use - Coarse Soil

Analyte		Units	EIL/ESL
Metals & Metalloids	Lead	mg/Kg	1800 / -
Polycyclic Aromatic Hydrocarbons	Benezo(a)pyrene	mg/Kg	- / 0.7
BTEXN	Benzene	mg/Kg	- / 75
	Toluene	mg/Kg	- / 135
	Ethyl benzene	mg/Kg	- / 165
	Xylenes	mg/Kg	- / 180
	Naphthalene	mg/Kg	370 / -
Total Recoverable Hydrocarbons	F1 TRH C6-C10	mg/Kg	- / 215
	F2 TRH C10-C16	mg/Kg	- / 170
	F3 TRH C16-C34	mg/Kg	- / 1700

Analyte		Units	EIL/ESL
	F4 TRH C34-C40	mg/Kg	- / 3300

4.6.3 NEPM Management Limits

Management Limits apply to petroleum hydrocarbon compounds at all soil depths and are used to assess potential impacts such as fire and explosion hazards and effects on buried infrastructure. Assessment criteria for management limits have been drawn from the *Residential, Parkland and Public Open Space / Coarse soil texture* criteria within (Table 1 B (6)). The management limits applicable to the site are provided in **Table F** below.

Table F: Management Limits for Residential Land Use / Coarse Soil Texture

Analyte		Units	Management Limits
Total Recoverable Hydrocarbons	F1 TRH C6-C10	mg/Kg	700
	F2 TRH C10-C16	mg/Kg	1,000
	F3 TRH C16-C34	mg/Kg	2,500
	F4 TRH C34-C40	mg/Kg	10,000

5 REMEDIATION OPTIONS

5.1 Options for Remediation

5.1.1 Regulatory Guidance on Remedial Options

The following sections provide a review of the remediation options that could be applied to the contamination at the Site, considering the NSW EPA policy in relation to selecting a preferred remediation option.

The NSW EPA's position on the selection of remediation options, based on the ASC NEPM (2013), is as follows:

1. On-site treatment of the soil so that the level of contaminant is either destroyed or the associated hazard is reduced to an acceptable level.
2. Off-site treatment of excavated soil, which, depending on the residual levels of contamination in the treated material, is then returned to the site, removed to an approved waste disposal site or facility, or used as fill or for landfill.
3. Consolidation and isolation of the soil on-site by containment within a properly designed barrier (providing there is no immediate danger to the environment or community and the Site has appropriate controls in place).
4. Removal of contaminated soil to an approved site or facility, followed where necessary by replacement with clean fill, or
5. Where the assessment indicates that remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.

SWE advises that the appropriateness of any particular option will vary depending on a range of site-specific factors.

The NEPM 2013 and Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009) prefer the following asbestos remediation hierarchy:

1. Minimisation of public risk.
2. Minimisation of contaminated soil disturbance. and
3. Minimisation of contaminated material/soil moved to landfill.

Furthermore, the Guidelines for the NSW Site Auditor Scheme, 3rd. Edition (2017) provides the following additional requirements to be taken into consideration:

1. Remediation should not proceed in the event that it is likely to cause a greater adverse effect than leaving the site undisturbed. and
2. Where there are large quantities of soil with low levels of contamination, alternative strategies should be considered or developed.

5.1.2 Rationale for Site Remediation Options

Based on the history of Site, known contamination (i.e., presence of non-friable and friable asbestos), the proposed land use, and the remediation hierarchies prescribed by the relevant guidance documentation, the following section provides a review of remediation technologies and strategies that are considered potentially feasible for the Site.

Table 6: Remediation Options

Item	Option 1	Option 2	Option 3	Option 4
Method	On-site Treatment	Off-site Treatment	Consolidation/ On-site Isolation (capping)	Excavate & Off-Site Landfill Disposal
Contaminant Suitability	**Non-friable Asbestos** Permitted and technically achievable. Feasible.	**Non-friable Asbestos** Not permitted	**Non-friable Asbestos** Permitted and technically achievable.	**Non-friable Asbestos** Permitted and technically achievable.
	Friable Asbestos Not applicable for friable asbestos.	**Friable Asbestos** Not permitted.	**Friable Asbestos** Permitted and technically achievable	**Friable Asbestos** Permitted and technically achievable.
	UPST Not applicable for UPST.	**UPST** Not applicable for UPST.	**UPST** Permitted but not technically achievable.	**UPST** Permitted and technically achievable.

Option 1 - On-site Treatment: The non-friable (bonded) asbestos impacted soil identified at the site requires remediation. Where the asbestos is non-friable and above the site assessment criteria (SAC) of 0.05%, the asbestos fragments may be removed by manual screening/emu pick methodology, visual clearance and soil validation soil sampling undertaken. The friable asbestos impacted soils, where detected at above 0.001%, cannot be manually screened, however may be targeted and remediated for off-site disposal and/or on-site Isolation (Capping) and the followed by further delineated as part of process to reduce the volume of soil being classified friable as well as above the SAC. However, this option is labour intensive and requires that the impacted soil to be progressively spread and screened in line with the ASC NEPM 2013 and the WA Guidelines. This option would save the transport and disposal costs to landfill and also reduce the costs of importing of clean fill for backfill purposes. The volume of the soil / fill material to be screened means that this option may be prohibitive from both practical and timing perspectives. This option also allows for the partly or complete remediation of the asbestos contamination above SAC and hence will leave the site mostly unimpeded at completion of the remediation work in terms of environmental controls and management.

Option not applicable for UPST.

Option 2 - Off-site Treatment: Off-site treatment of asbestos contaminated soil is not permitted making this an unavailable option. Option not applicable for UPST.

Option 3 – Consolidation / Onsite Isolation (capping): This would include the placement of an impermeable barrier such as concrete/pavers etc, or a warning barrier and non-contaminated soil material, over the existing ground surface to isolate the asbestos impacted soil and thereby provide a physical barrier and reduce the health risk to future site users. This action may also reduce the transport of contamination via surface water movement and dust generation.

Clean fill (approved excavated natural material, virgin excavated natural material (VENM), aggregate) importation for capping purposes is likely to be required for this option. Considerations must include the cost of capping materials, development site design and the potential geotechnical requirements for future development. The capping and/or containment must be appropriate for the specific contaminants of concern. A long-term environmental management plan (EMP) would be required and site identification documentation, including the Section 10.7 council planning certificate, land title or other appropriate statutory documentation, would be modified to note the presence of the contamination. This may impact upon development approval conditions, place restrictions on the use of the land and limit the future potential land value.

This is technically achievable and considered to be the most practical and economically viable option for the asbestos contamination to the site. However, the UPST can not be consolidated on site due to the planned redevelopment design and need to excavate the soil in area where the UPST is located.

Option 4 - Excavate & Landfill Disposal (Preferred): Asbestos impacted soils would be classified in accordance with NSW EPA guidelines for waste disposal, excavated and disposed of off-site to an NSW EPA-licensed landfill. The material would have to meet the requirements for landfill disposal. Landfill fees would apply in addition to transport costs. This option potentially provides for complete remediation of the asbestos impacted soil within the site areas with no long-term future limitations such as a long-term EMP remaining with contamination on the site. Incurs costly disposal fees to landfill. This option is considered to be technically achievable, however, not the most practical nor economically viable for the asbestos contamination. This option is also the only viable option for the UPST remediation.

Following consultation FDC Option 4 is the preferred remediation option.

5.2 Remediation Goals

SWE understands the remediation goals for this project are to:

- Render the site suitable for the proposed development from a contamination viewpoint.
- Reduce the human health risks posed by site contamination to an acceptable level.
- Achieve the above via the most efficient regulatory means available.
- Obtain a Validation Assessment Report detailing the successful remediation of the non-friable and friable asbestos impacted soils and the provide a statement that the site is suitable for the proposed development.

5.3 Extent of Remediation

5.3.1 Non-friable Asbestos Contamination

Asbestos contamination has been found to be present in the surface soil widespread throughout the site, with the SAC exceeded at 4 grids and 1 judgemental location across the site (Refer to **Figures B, C and D).** The full vertical extent has partially been delineated through quantification sampling at 0.0 – 0.3m for a number of test pit locations during the asbestos quantification assessment carried out by SWE, where the sampling at Grids 17, 22, 24 and 55, as well as Judgmental sampling location J07, have been found to have non-friable and friable asbestos contamination at above the SAC level.

Grids and judgmental sampling locations that have been deemed to contain asbestos contamination **below** the NEPM criteria, Orange, are considered suitable for the intended site use and hence do not require further remediation, other than being handled under asbestos controls to comply with WHS legislation. However, this soil should be managed for future reference under a long-term EMP for the site should any further work have the potential to disturb this asbestos impacted soil. The soil will also be required re-used and placed below the surface soil level, typically 0.2m below ground surface level of the completed site designs.

Grids and judgmental sampling locations that have been deemed to contain asbestos contamination **above** the NEPM criteria, Red, are not considered suitable for the intended site use, and require further remediation. As discussed in the prior section, the preferred remediation option for this soil is to excavate and dispose to landfill.

Due to the random and unpredictable distribution of asbestos contamination in the soil, the remaining sections of the site that have not been found to be contaminated with asbestos as part of the detailed assessment (SWE, 2022), will be managed under an unexpected finds protocol (UFP) as included in Appendix A, to ensure the correct management of any unexpected contaminated soils or hazardous materials unearthed during disturbance of soil in areas outside the red and orange grids and judgmental sampling locations.

Please note the UFP is not to be confused for a remediation option or asbestos remediation strategy.

The extent of remediation will also be dictated by on site visual clearances and ongoing validation of soil passed obvious surface/topsoil contamination.

5.3.2 Friable Asbestos Contamination

To be remediated as per the remediation of red zones discussed in the above section, however with additional friable asbestos controls such as dust suppression, wet decontamination unit and Class A contractor supervising the work.

5.3.3 UPST Contamination

A previously unidentified UPST has been unexpectedly encountered onsite during soil investigation works for asbestos in soil by SWE. Therefore, further investigation and remediation of the UPST and associated infrastructure such as filler pipes, supply pipes, breather pipes etc (if present), must be undertaken by a nominated suitability qualified and experienced UPST removal contactor who must to undertake all works in a safe manner and appropriately manage and remove the UPST and associated infrastructure (if present) and its contents from site. will include the removal of any UPST related infrastructure such as filler pipes, supply pipes, breather pipes etc (if present),

All works must be undertaken under the supervision of a SQEC who will screen and validate any contaminated soils encountered onsite and make recommendations to the nominated suitability qualified and experienced UPST removal contactor for further removal works. A summary of the UPST remediation works methodology is as follows:

- Notification of Blacktown Council of proposed UPST removal and remediation works,
- Unearth the UPST and any associated infrastructure its type and size,
- Confirming the contents and volume of the UPST,
- Making UPST safe from vapour ignition perspective,
- Removing the contents of the UPST and disposing it to a licenced facility,
- Remove the UPST and associated infrastructure (if present),
- SQEC to inspect the removed UPST and associated infrastructure (if present) for holes and its condition,
- Dispose the UPST and associated infrastructure to a licenced recycling facility,
- Recycling facility to confirm UPST receival and its destruction,
- Excavation and stockpiling of fill sands/soils immediately surrounding UPST,
- SQEC to screen surrounding soils for further contamination in soil,
- If required under the direction of a SQEC excavate and stockpile additional contaminated soils,
- SQEC to undertake validation sampling of the base and walls of UPST and associated infrastructure (if present),
- If initial validation sampling exceeds the SAC, then additional excavation, stockpiling, screening and validation sampling must be undertaken under the supervision of the SQEC,
- SQEC to sample resultant stockpiles,
- If the stockpiles in exceedance of the SAC, then the SQEC must prepare a waste classification report to facilitate offsite disposal to a licenced facility,
- No soil or material is the removed offsite without been first assessed for waste classification purposes and acceptance at the appropriate landfill facility that can accept the classification of the soil.
- All approved soils been transported to the appropriate landfill must be tracked for waste tracking purposes.
- Importation of VENM or other suitable material to backfill UPST excavation pit following successful validation of the UPST area,
- SQEC to prepare a UPST validation report to be submitted to FDC.

5.4 Preferred Approach

SWE propose that a combination of re-using volumes of soil that are found to be below the SAC and Option 4 (Excavate & Landfill Disposal) detailed in Section 5.1.2 would provide the best outcome for client in terms of the site remediation works such as confidence and completeness.

SWE recommends that the remediation of the identified soil contamination is carried out in two overall remediation strategies/options. **Strategy 1** will be the "remediation" of 'orange' soil and should be by excavation, stockpiling, re-use and relocation of the asbestos impacted soil to a predefined area below surface soil levels of the completed site design. **Strategy 2** will be the remediation of 'red' soil and UPST to the extent of contaminated fill and will be remediated by:

- **Strategy 2 (Option 4, as per Section 5.1.2)**; bulk excavation and landfill disposal.

All handling of soil to the nineteen positively identified asbestos contaminated sampling locations will be strictly under asbestos controls. We understand that the below overall staging of the work may be followed to suit site conditions and finished site design:

- Stage 1 - SYD09
  - I. Excavate and relocate orange grids (Table 3 and Figure D) to SYD08 pad.
  - II. Remediate red grids (Table 4 and Figure D) by excavation and disposal to landfill.
  - III. Remediate UFs identified in Preliminary Assessment and ongoing in accordance with Section 7.1.6.
- Stage 2 - SYD08
  - I. Remediate red grids (Table 4 and Figure D) by excavation and disposal to landfill.
  - II. Remediate UFs identified in Preliminary Assessment and ongoing in accordance with Section 7.1.6.
  - III. Excavate & stockpile orange grids (Table 3 and Figure D).
  - IV. Re-use orange grids for fill over the SYD08 pad (Table 3 and Figure D).
  - V. Topsoil to be filled on top of the orange material for completed levels. Orange soil to be placed a minimum 0.2m below finished ground level.

The depth of the asbestos impacted soil varies between 0.1 and 0.3m below existing surface and the grids are approximately 20x20m squares and judgmental locations are 20m diameter circular shaped. The extent of the minimum remediation of Asbestos Impacted and Contaminated Soils have been illustrated in the below **Tables 3 and 4**. The locations of the sampling locations are illustrated in **Figures B, C and D.**

Table 3 - Orange – Non-Friable Asbestos to 8 Grids and 6 Judgemental Sampling Locations:

Location Grid/Judgmental	Depth of Recommended Remediation	~M^2	~Volume M^3	Comment
Grid 13	0.3	400	120	
Grid 14	0.3	400	120	
Grid 15	0.3	400	120	
Grid 23	0.3	400	120	
Grid 30	0.3	400	120	
Grid 33	0.3	400	120	
Grid 48	0.3	400	120	
Grid 54	0.3	400	120	
J06	0.3	314	94	
J08	0.3	-	-	Inside RED Grid TP22/17 and remediated as red
J11	0.3	-	-	Inside Orange Grid 15.

Table 3 - Orange – Non-Friable Asbestos to 8 Grids and 6 Judgemental Sampling Locations:				
Location Grid/Judgmental	Depth of Recommended Remediation	~M^2	~Volume M^3	Comment
J12	0.3	50	5	Mostly inside Orange Grid 15.
J13	0.3	314	94	
J14	0.3	314	94	

Table 4 - Red – Non-Friable Asbestos to 2 Grids and Friable Asbestos to 2 Grids and 1 Judgemental Sampling Locations:				
Location Grid/Judgmental	Depth of Recommended Remediation	~M^2	~Volume M^3	Comment
Grid 17	0.3	400	120	
Grid 22	0.3	400	120	**Friable Controls**
Grid 24	0.3	400	120	
Grid 55	0.3	400	120	**Friable Controls**
J07	0.3	314	~9.42	**Friable Controls** Partly inside Grid 23

6 ROLES & RESPONSIBILITIES

Table 9 outlines the key roles, representatives and their responsibilities to be carried out in the implementation of this remediation action plan with respect to the selected combined remedial options of excavation and disposal to landfill and capping.

Table 9: Key Roles and Responsibilities for the Proposed Remedial Works

Role	Organisation	Responsibility
Site Custodian and Owner(Development proponent)	End Client	• Provide Project design, tender and award the project. • Main site and development decision maker. • Oversee & manage project with assistance of Principal Contactor (FDC) . • Accepts and implements any long-term EMPs (if required)
Principal Contractor and SWE Client	FDC Construction (NSW) Pty Ltd (FDC)	• Provision of access to worksite. • Engagement of appropriately licensed contractors to undertake the remedial works. • Responsible for site management decisions based on advice from Contractors / results of assessments. • Reports to site custodian and owner (MicroSoft) in accordance with contracted requirements.
Earth Works /Construction Contractor	Jeffsann	The earth work/construction contractor will report directly to the Principal Contractor and is responsible for coordination and implementation of this RAP on this project under its control which is as follows: • Has responsibility on site for work health safety and for ensuring compliance under section 274 of the Work Health Safety Act (WHS Act) and Work Health Safety Regulation (WHS Regulation). • Will ensure that the necessary health and safety-related equipment is made available for this project, • Monitors safety performance of the project's personnel in compliance with the RAP, • Identify work health safety training needs of management, supervisors and personnel on site and ensure appropriate training is carried out, • Provides an incident report for all safety and environmental incidents and follow-up of each incident to the Principal Contractor, • Has overall responsibility on site for Environmental Management and control, • Will ensure that the necessary environmental control and monitoring equipment is made available for this project, • Monitors environmental performance of this project personnel in compliance with the site-specific RAP, and • Identify work health safety training needs of management, supervisors and personnel on site and ensures appropriate training is carried out.

Nominated Suitability Qualified Environmental Consultant (SQEC) / Licensed Asbestos Assessor (LAA) contractor	Safe Work & Environments (SWE)	• Site assessment, asbestos classification and reporting. • Development and management of remediation action plan. • Designated site supervisor for remediation works. • Asbestos air monitoring and clearance, inspections, consulting and hygiene supervisions. • Supervise remediation contractors. • Verify that soil is free from contaminants as per the removal scope. • Provide Site Validation Report following the completion of remedial works. • Undertake validation sampling assessment works. • Review licensed asbestos removal contractor ARCP. • Guidance on methodology for the control of asbestos materials. • Provide advice to the client regarding status of site documentation, remedial works, incidents etc.
Nominated Licensed Asbestos Removal Contractor and Licensed Waste Transport Company	Jeffsann and Australasian Technical Service (ATS)	• Gain appropriate approvals for the scope of works. • Provision of required documentation including Asbestos Removal Control Plan (ARCP). • Control and establishment of asbestos working zones. • Ensuring PPE is worn correctly. • Control of potentially contaminated dust in the removal area. • Contaminated soil removal / relocation works. • Transport asbestos waste material to a licensed waste facility. • Decontaminating all plant and materials appropriately. • Provision of waste tracking receipts.
Nominated suitability qualified and experienced UPST removal contactor	EnviroPacific Pty Ltd	• Gain appropriate approvals for the scope of works. • Investigate size, type and contents of UPST. • Ensure that no explosive or ignition safety risks associated with vapors emitting from UPST, • Undertake all works in a safe manner and appropriately manage and remove the UPST and associated infrastructure (if present) and its contents from site.
Governing Regulatory Authority for Asbestos Removal & Disposal in NSW	SafeWork NSW & NSW EPA	• Regulates asbestos works under its asbestos works approval system. • All works undertaken on-site are subject to regulatory inspections. • Regulates that the Waste is appropriately classified and transported to a lawful place by the transporter and generator.

7 SCOPE OF REMEDIATION WORKS

The following sections provide a summary of management procedures and remediation methodologies for the proposed remediation works at the Site.

7.1 Remediation Strategy – Excavation and Landfill Disposal of Asbestos

7.1.1 Overview

Asbestos remediation works at the site will involve the following overall remediation methodology:

- Bulk excavation of asbestos contaminated (**red**) soils.
- Replacement of asbestos impacted (**orange**) soils.
- Immediate Controls.
- Long Term Controls, and
- Unexpected Finds as per Unexpected Finds Procedure (UFP).

A nominated SQEC and LAA may be engaged to further clarify the extent and distribution of the asbestos contaminated soils where (if) required. The nominated SQEC and LAA must document findings to a level suitable to the client and appropriate to determine/monitor the remediation strategy. The nominated SQEC and LAA must also document the remediation work and undertake sampling and analysis works, as required.

All the above work where non-friable asbestos contamination is found must be carried out in compliance with **Section 9.0 Environmental Controls** and **Section 10.0 Asbestos Removal Controls**. The remedial works will be undertaken in accordance with a detailed Safe Work Method Statement (SWMS) and overall Workplace Health and Safety (WH&S) Plan, and a long term Environmental Management Plan (EMP) is required to be prepared by the nominated SQEC and LAA.

The locations and extent of the required excavations and landfill disposal is demonstrated within **Figure D –. Positive Grids and Judgemental Soil Sampling Locations.**

7.1.2 Preferred Remediation Option – Strategy 1

Strategy 1 will be the "remediation" of '**orange**' asbestos impacted soil and will be carried out by excavation, stockpiling and replacement of the soil to a predefined area below surface soil levels of the completed site design. The work will be carried out following the below:

- Once the asbestos impacted area is delineated by assessment, access to the area must be restricted prior to commencement of excavation works.
- Engage a Class A licensed asbestos removal contractor to supervise all asbestos removal works, control the asbestos removal work area and implement the appropriate asbestos control measures.
- Where asbestos contamination is only identified as ACM fragments in the soil the safe work procedures implemented must adhere to **Section 9.0 Environmental Controls** and **Section 10.0 Asbestos Removal Controls** in this document.
- Carry out all remedial work under asbestos control conditions.
- All asbestos remediation work must be appropriately validated in compliance with requirements outlined within **Section 8.0** of this RAP, including documentation of the location of areas remediated and area(s) of stockpiling and replacement.
- Excavations will generally be to between 200mm and 300mm below existing level, depth of excavation and bottom of contaminated layers to be monitored closely to minimise over excavation into natural soil.
- Where remedial works are to ensure the complete removal of asbestos impacted soil, excavation is to be continued to a minimum depth of 50mm below the extent of asbestos impacted fill. Where further

asbestos contamination is evident in the walls (if any) and bases of remedial area this must be documented in the final site validation report, and

- A detailed surveyed plan should be developed to document the exact location and depth of the replaced asbestos contaminated soil to be included in a future asbestos management plan for the site.

7.1.3 Bulk Excavation and Landfill Disposal of Asbestos Contaminated Soils

Strategy 2 will be the "remediation" of '**red**' asbestos contaminated soil and will be carried out by excavation, stockpiling and landfill disposal of the contaminated soil. The work will be carried out following the below:

- Ensure that the subject work area has been satisfactorily assessed to establish the extent of the contamination and the appropriate controls to ensure the protection of health, safety and environment.
- Once the area of contamination is delineated by assessment or assumed contaminated for practical purpose, access to the area must be restricted prior to commencement of excavation works.
- Engage a Class A licensed asbestos removal contractor to supervise all work, control the asbestos removal work area and implement the appropriate asbestos control measures.
- Where asbestos contamination is only identified as ACM fragments in the soil the safe work procedures implemented must adhere to **Section 9.0 Environmental Controls** and **Section 10.0 Asbestos Removal Controls** in this document.
- Carry out all remedial work under asbestos control conditions.
- All asbestos remediation work must be appropriately validated in compliance with requirements outlined within **Section 8.0** of this RAP, including documentation of the location of areas remediated.
- Excavations will generally be between 200mm and 300mm below existing level, depth of excavation and bottom of contaminated layers to be monitored closely to minimise waste,
- Where remedial works are to ensure the complete removal of asbestos contamination, excavation is to be continued to a minimum depth of 50mm below the extent of asbestos impacted fill. Where further asbestos contamination is evident to the walls (if any) and bases of remedial area this must be documented in the validation report.
- No asbestos contamination must remain in the remedial excavation areas at levels above the SAC.
- All excavated material must be stockpiled onsite to be further assessed by the nominated SQEC and LAA for waste classification purposes in order to facilitate offsite disposal offsite to an appropriate landfill for the soil assessed classification.
- No soil or material is the removed offsite without been first assessed for waste classification purposes and acceptance at the appropriate landfill facility that can accept the classification of the soil.
- All approved soils been transported to the appropriate landfill must be tracked for waste tracking purposes.

7.1.4 Immediate Asbestos Controls

The following immediate controls are recommended to be implemented to manage the asbestos risk:

- Delineate the asbestos impacted areas, install warning signage and inform all site personnel of asbestos presence, controls and access limitations / requirements. The areas where intrusive earthworks and asbestos remediation will take place should be clearly signed and access restricted to avoid exposure to workers that are not part of the remediation work.
- Restrict work activities in asbestos affected areas to exclude intrusive earth works that is not carried out under this RAP and its remediation methodologies.
- The implementation of the RAP is recommended prior to other work being carried out to site, if possible, in order to alleviate any health risk to site workers and to avoid the risk of cross contamination and tracking across contaminated soils during other site work.

- In areas where excavation removal of asbestos contamination cannot occur, surface pick all asbestos impacted ground areas to remove ground surface contamination and carry out a visual surface clearance by a LAA.
- Air monitoring should also be conducted to ensure control measures are effective during removal works. Engage an LAA to undertake National Accredited Testing Authority (NATA)-accredited asbestos fibre air monitoring to document if any airborne fibres are being generated.
- Subject to no intrusive site work being carried out, there are no immediate health risk to workers on the site to carry out normal work activities in the areas deemed outside the asbestos exclusion zones.

Note: All works must be undertaken in accordance with SafeWork Australia (2018) *'How to Safely Remove Asbestos: Code of Practice'* and Chapter 8 of the Work Health and Safety Regulation (NSW, 2017).

7.2 Remediation Strategy – UPST Removal and Remediation

7.2.1 **UPST** Removal, Remediation and Validation of Contaminated **Soils**

A previously unidentified UPST has been unexpectedly encountered onsite during soil investigation works for asbestos in soil by SWE. Therefore, further investigation and remediation of the UPST and associated infrastructure such as filler pipes, supply pipes, breather pipes etc (if present), must be undertaken by a nominated suitability qualified and experienced UPST removal contactor who must undertake all works in a safe manner and appropriately manage and remove the UPST and associated infrastructure (if present) and its contents from site. will include the removal of any UPST related infrastructure such as filler pipes, supply pipes, breather pipes etc (if present),

All works must be undertaken under the supervision of a SQEC who will screen and validate any contaminated soils encountered onsite and make recommendations to the nominated suitability qualified and experienced UPST removal contactor for further removal works. The UPST remediation works methodology is as follows:

- The nominated suitability qualified, and experienced UPST removal contactor is responsible for unearthing the UPST and confirming its type, size, contents and volume of the UPST,
- The nominated suitability qualified, and experienced UPST removal contactor must ensure that during any disturbance of the UPST that the risk of vapour ignition is assessed and mitigated,
- The nominated suitability qualified, and experienced UPST removal contactor must remove the contents of the UPST and dispose it to an appropriate and licenced facility. Tracking and receival documents must then be forwarded to the nominated SQEC,
- Under the supervision of the SQEC the nominated suitability qualified, and experienced UPST removal contactor must remove the UPST and associated infrastructure (if present). The SQEC will then inspect the removed UPST and associated infrastructure (if present) for holes and its condition,
- Once removed and inspected the nominated suitability qualified, and experienced UPST removal contactor must ensure that the UPST and associated infrastructure be disposed to a licenced recycling facility. The recycling facility must then confirm and document the UPST receival and its destruction with a 'Certificate of destruction' which then must be forwarded to the SQEC,
- Under the supervision of the SQEC the nominated suitability qualified, and experienced UPST removal contactor must excavate and stockpile all fill sands/soils immediately surrounding UPST and the associated infrastructure (if present),
- Following initial excavation and stockpiling the SQEC will screen the remaining surrounding soils for further contamination in soil using a photo ionisation detector (PID) and visual observations,
- If required under the direction of a SQEC the nominated suitability qualified, and experienced UPST removal contactor must excavate and stockpile additional contaminated soils,

- The SQEC will then undertake validation sampling of the base and walls of UPST, and associated infrastructure (if present) as outlined further outlined in **Section 8**. If initial validation sampling exceeds the SAC, then additional excavation, stockpiling, screening and validation sampling must be undertaken under the supervision of the SQEC,
- The SQEC then will sample and analyse the resultant stockpile/s to determine ff the stockpile/s is/are in exceedance of the SAC as outlined further outlined in **Section 8**. If the resultant stockpile/s are below the SAC then they can be reused onsite subject to geotechnical/aesthetic suitability,
- However, if the resultant stockpile/s are in exceedance of the SAC, then the SQEC must prepare a waste classification report to facilitate offsite disposal to a licenced facility,
- No soil or material is the removed offsite without been first assessed for waste classification purposes and acceptance at the appropriately licenced landfill facility that can accept the classification of the soil,
- The nominated suitability qualified, and experienced UPST removal contactor must ensure all soils/fill material approved for waste classification purposes, is then transported and accepted at the approved appropriately licenced landfill facility in a safe manner. All soil/fill material must be tracked from the source site to the landfill for waste tracking purposes and a copy of the landfill weight bridge documents and waste tracking documents supplied to the SQEC,
- If required, the importation of VENM or other suitable material to backfill UPST excavation pit following successful validation of the UPST area. The SQEC must review and approve certification documents prior to importation to the site. Tracking documents are to be supplied to the SQEC,
- The SQEC to must prepare a UPST validation report to be submitted to FDC. Then FDC must submit a copy of the final UPST validation report to Blacktown Council within 30 days of completion of UPST removal works.

7.3 Other Remediation Controls

7.3.1 Long Term Controls

A long-term EMP will be required to manage any remaining contamination at the site. The EMP would manage the future use of the land and potential intrusive work past the topsoil and/or other encapsulating overlying layers at a later stage.

7.3.2 Unexpected Finds Procedure (Asbestos)

In situations where unexpected finds of asbestos are suspected or identified, including all situations identified and reported on in the Preliminary Asbestos Assessment (March 2022, SWE) beyond the exiting known extent:

- Cease work immediately and retire from the area and advise the PM/Safety Officer.
- Cordon off or otherwise isolate the area (with exclusion fencing if necessary).
- Lightly contaminated surface areas to be emu picked and validated as per Section 8.2.1 following removal work.
- Areas with more severe contamination (Refer UFP) definition to surface, such as northern end of footprint of L-shaped demolished building to northeaster end of site, should be chased by scraping the affected ground surface until no visible signs of AC fragments, followed by validation assessment to either clear area for further contamination as per Section 8.2.2. Should asbestos be identified in the validation process, then the results will be compared to SAC for determination of strategy for further remediation.
- Notify an appropriately qualified consultant of suspect material for assessment to confirm the presence (or absence) of asbestos.
- Determine “clean up” or other remedial action if necessary.

- Document the quantity and the location of impacted soils and define scope of required remedial activities.
- Engage and asbestos licensed contractor to carry out work in accordance with requirements in **Section 10.0 Asbestos Removal Controls** of this RAP.
- Obtain clearance certificates for re-occupancy if required.
- Apply the Unexpected Finds Protocol (**Appendix A**) to assist with the above.

7.3.3 Waste Management

All contaminated soils must be classified in accordance with the NSW EPA (2014) *'Waste Classification Guidelines'* . Material classified as waste must be removed from the site and disposed in accordance with EPA requirements.

All material leaving the site must be completely and securely covered to prevent loss of loose material from the vehicle and tracked appropriately. Only vehicles which are appropriately licensed, have clean exterior bodywork and which will not pollute the offsite transportation corridors shall be permitted to leave the site.

Any material removed from the Site shall be transported in accordance with government regulations and the requirements of the SafeWork NSW Authority. All offsite truck movements shall occur during normal working hours. All trucks carrying loads of impacted soil material off-site shall be licensed to transport the materials and tracked in accordance with EPA requirements and State Government regulations. All materials leaving the Site shall be tracked in accordance with the requirements of this RAP. Disposal of waste materials shall only be undertaken to the appropriate NSW EPA licensed facilities which have been approved by the principal contractor. .

Copies of waste disposal dockets and related transport logs (including vehicle registration, times & dates) must be retained, summarised, and included in the final validation report.

7.3.4 Unexpected Finds Procedure (UPST and Hydrocarbons)

In the event that unexpected find of chemical contaminants of concern and/or additional UPSTs are encountered during site work, then they must be managed as follows:

- Upon discovery of the unexpected find of contamination other than asbestos, the principal contractor is to be notified and the area barricaded and physically delineated to prevent access by unauthorised persons.
- Visual identification and assessment of the nature of the issue and the likely extent of the area of unexpected finds are to be undertaken by the nominated SQEC.
- Conduct appropriate testing with a view to verify the nature and extent of the contamination.
- If contamination is found and remediation action is considered necessary, advice as to the remediation approach will be provided by the nominated SQEC, and
- If necessary, remove and dispose of any relevant contaminated soils in accordance with the NSW EPA (2014) *'Waste Classification Guidelines'* .

A step-by-step unexpected finds procedure (UFP) is detailed within **Appendix A**.

7.3.5 Unknown Types of Materials

The presence of unknown materials would be highlighted during remedial works by the observation of any unusual physical/sensory characteristics of the "impacted" soils and/or validation sampling. In the event that any significant unknown type of material is identified at the site, an assessment of the influence of the material on the remedial works would be undertaken. If required, a variation to the RAP will be made. If evidence suggests that the level and extent of contamination is significantly greater than assumed, further investigations will be performed to determine its extent. Once it is identified, the impacted material shall be remediated.

8 VALIDATION PLAN

The objective of the validation plan is to assess and demonstrate that remedial measures described in this interim RAP are effective. The validation can be staged if required, depending on the sequence of excavation.

The validation assessment will be conducted in accordance with Data Quality Objectives (DQOs) and Quality Assurance/ Quality Control (QA/QC) procedures to ensure the repeatability and reliability of the results.

8.1 Data Quality and Project Quality Objectives

The validation assessment will be conducted in accordance with Data Quality Objectives (DQOs) and Quality Assurance/ Quality Control (QA/QC) procedures to ensure the repeatability and reliability of the results. They will be based broadly in accordance with the seven-step data quality objective process, as defined in Australian Standard (AS) "Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and Semi-volatile Compounds" (AS 4482.1 – 2005):

- State the Problem,
- Identify the Decision,
- Identify Inputs to the Decision,
- Define the Boundary of the Assessment,
- Develop a Decision Rule,
- Specify Acceptable Limits on Decision Errors, and
- Optimise the Design for Obtaining Data.

A checklist of Data Quality Indicators (DQI) in accordance with Appendix V of the NSW EPA *Contaminated Sites Guidelines for the NSW Site Auditor Scheme* (2nd edition) (2006) is to be completed as part of the validation assessment.

8.2 Validation of Remediation Footprints

Following the completion of remediation of '**red**' asbestos contaminated soil as outlined in the **Strategy 2** in **Section 7** the footprint of the designated asbestos removal work area must be visually cleared and validated.

8.2.1 Visual Asbestos Clearance Inspection

Designated asbestos removal work areas will be continuously inspected for the presence of asbestos during all remediation works by the SQEC and LAA. Following the completion of the remedial works under the supervision of the SQEC and LAA, the footprint of the designated asbestos removal area must be visually assessed for any remaining asbestos impacted soil and/or ACM. If any asbestos impacted soil and/or ACM are observed on the surface or suspected to be present below the surface of the designated asbestos removal work area, then further remedial works will be required to be undertaken by the nominated licenced asbestos removal contactor.

Once the LAA is confident that the remedial works have been completed adequately by the nominated licenced asbestos removal contactor then the LAA will issue an asbestos clearance certificate.

8.2.2 Validation Soil Sampling for Asbestos Design

Once the asbestos clearance certificate is issued then validation sampling of the footprint of the designated asbestos removal work area must be undertaken by the SQEC and LAA in accordance with Section 4.10, Schedule B1 and Section 11, Schedule B2 of the ASC NEPM (2013), and Section 5 of the WA Guidelines.

WA Guidelines and soil validation sample locations will be selected in accordance with ASC NEPM (2013) Schedule B2 Section 6, Sampling Design, as summarised **Table 9** below

Table 9. Proposed validation sampling schedule.

Location	Number of Samples	Action	Analytes

Location	Number of Samples	Action	Analytes
Footprint of the designated asbestos removal work area visually cleared by LAA	Minimum validation soil sampling of the footprint of the designated asbestos removal work area at a rate of one (1) sample per 25 square metres (m^2) or a minimum of two (2) samples per area	Grid sampling footprint of the designated asbestos removal work area with additional judgmental sampling if deemed necessary by SQEC .	Asbestos (WA Guidelines) Asbestos fines (AF) and friable asbestos (FA) and Bonded ACM

Soil analysis shall focus on the contaminants identified to be of potential concern on this site (Asbestos). Analysis shall be carried out by a NATA certified laboratory for the specified analytical method.

8.2.3 Validation Soil Sampling for UPST Design

Validation sampling shall be conducted in accordance with the UPSS Technical Note on Site Validation Reporting (DECCW;2010) and the principals described in AS4482.1-2005: Guide to sampling and investigation of potentially contaminated soil (Part 1: Non-volatile and semi volatile compounds) and AS4482.2-1999: Guide to sampling and investigation of potentially contaminated soil (Part 2: Volatile compounds). Soil validation sample locations shall be selected in accordance with NEPM (2013) Schedule B2 Section 6, Sampling Design as summarised in Table 10:

Location	Number of Samples	Action	Analyte
UST Pit	1 per pit wall and base or every 5m	Grid sampling from walls and base of excavations pits.	TRH, BTEX, Lead (add Phenol for waste oil tanks/sumps)
Bowsers, pipelines	1/item or every 5m	Sample from base of infrastructure.	TRH, BTEX, Lead
UPSS Stockpile Classification	1 per 25m3	Representative discrete sampling.	TRH, BTEX, Heavy metals (8), PAH's, Total Phenols.
Stockpile footprint if NOT hardstand or lined with plastic.	1 per 25m2	Discrete samples from ground surface.	TRH, BTEX, Lead
Groundwater	1 per well	1 round of sampling in existing Well/s with potential for installation of additional Wells pending results of testing.	TRH, BTEX, Heavy metals (8), PAH's, Total Phenols, and VHCs.

Chemical analysis shall focus on the contaminants identified to be of potential concern on this site (TRH/BTEX, PAHs, Heavy Metals and Total Phenols). Analysis shall be carried out by a NATA certified laboratory for the specified analytical method. QA/QC analysis is required at a rate of 1/10 samples.

8.2.4 General Validation Soil Sampling Procedure

Validation soil samples will be collected using the following sampling procedure:

- Determine the number and sampling design required for the validation area.
- Sampling using of reusable stainless steel or disposable sampling equipment.
- Washing of all re-usable sampling equipment, in contact with the sample, in a 3% solution of phosphate free detergent (Decon 90) then rinsing with distilled water prior to each sample being collected.

- Use of a clean pair of disposable nitrile gloves for the collection of each individual soil sample.
- Collection of soil and transfer of the sample into an appropriate sampling container, sealing of containers to eliminate cross contamination during transportation to the laboratory.
- Labelling of the sample containers with individual and unique identification including Project Number and Sample Number.
- Use of chain-of-custody documentation to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

8.2.5 Validation Soil Sampling for Asbestos Method

As the validation sampling is required to validate for asbestos in soil, once validation soil samples are collected a per **Section 8.2.3** above, then each validation soil sample will be further assessed as per the method described below:

- A 10 litre (L) soil sample will be collected from each validation soil sample location and placed into a 10 L bucket.
- The 10 L soil sample in the bucket must be weighted (on a calibratable scale) then screened through a 7 mm sieve onto black plastic sheet.
- Any potential ACM fragments found in the 7 mm sieve will be collected, weighed then placed within a zip-lock plastic bag then placed into another bag (that is, double bagged).
- The bag then will be labelled with individual and unique identification, including project number, sample location and sample depth, then sent to a NATA Accredited laboratory for material analysis, and the asbestos concentration in soil at each location was calculated using the formula:

  % Soil Asbestos = % Asbestos Content x ACM (kg) / Soil Volume (L) x Soil Density (kg/L)

- To assess for AF/FA, at each validation soil sample location, one (1) wetted 500 mL volume sample would be collected from the sieved soil material on the black plastic sheet and placed within a zip-lock plastic bag.
- This bag will then be placed into another bag (that is, double bagged). The bag then will be labelled with individual and unique identification, including project number, sample location and sample depth. These samples were then dispatched to NATA accredited laboratory for analysis for asbestos (AF/FA).

It should be noted that if visible ACM fragments are observed during the validation soil sampling process, then further remediation works will be required to be undertaken by the nominated licenced asbestos removalist contactor under the supervision of the SQEC and LAA and a new clearance certificate issued, and validation soil sampling undertaken again.

8.3 Validation Soil Sampling Results

All validation soil sample laboratory analytical results for asbestos must be below the adopted SAC with no visible ACM fragments present on the surface of the validation area.

If the any of the validation soil sampling locations are above the adopted SAC and/or any visible ACM fragments are observed, then further remediation works will be required to be undertaken by the nominated licenced asbestos removalist contactor under the supervision of the SQEC and LAA and a new clearance certificate issued, and validation soil sampling undertaken again.

8.4 Validation of Imported Materials

If any soil material is required to be imported to the site for backfilling purposes then it must be certified and documented as Virgin Excavated National Material (VENM) or Excavated Natural Material (ENM) prior to importation.

The Protection of the Environment Operations Act 1997 (POEO Act) defines VENM as:

'Natural material (such as clay, gravel, sand, soil or rock fines):

- *that has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities, and that does not contain any sulfidic ores or soils or any other waste.'*
- *No other criteria for VENM have been approved. By definition, VENM cannot be 'made' from processed soils. Excavated material that has been stored or processed in any way cannot be classified as VENM'.*

The procedure to be adopted for the validation of imported materials for backfilling purposes sourced from an external source is documented in **Table 10** below:

Table 10. Validation Requirements for Imported Materials.

Imported Fill Type	Sampling	Analytes	Requirements
VENM	None. Must meet the definition of VENM in POEO Act	None. The source site of the imported VENM must be free of contamination as per the POEO Act	**1.** Importing contractor to supply existing compliant VENM documentation. A hold point remains until the nominated SQEC reviews and approves the VENM for importation or advises on the next steps. **2.** VENM is to be inspected upon importation to the site by the nominated SQEC to confirm it must be free of visible/olfactory indicators of contamination and must be consistent with supplied VENM documentation. **3.** Photographic documentation, number of truck loads and a volume of imported VENM to the site must be maintained by the principal contactor.
Imported garden mix/topsoil and mulches	Nil	Analysis of mulch can be limited to visual observations to confirm there is limited anthropogenic material and no visible asbestos materials.	Material is to be inspected upon importation by the nominated to confirm it is free of visible/olfactory indicators of contamination.
Imported engineering materials such as recycled aggregate, road base etc. or ENM	Yes, as per the NSW EPA (2014) *'Excavated Natural Material Order'* '	Heavy metals (as above), TRHs, BTEX, PAHs, OCPs, PCBs and asbestos. Additional testing may be required for ENM (e.g., foreign materials, pH and electrical conductivity) depending on available documentation.	**1.** Importing contactor to provide product specification and documentation to nominated SQEC to confirm the material has been classified with reference to a relevant Resource Recovery order / Exemption. A hold point remains until the validation consultant approves the material for importation or advises on the next steps. **2.** ENM is to be inspected by the nominated SQEC upon importation to confirm it is free of visible/olfactory indicators of contamination and is consistent with ENM documentation. **3.** Review of the facility's Environment Protection License (EPL).
Imported engineering materials comprising	At the nominated SQEC discretion based on robustness of supplier	At the discretion based on robustness of supplier documentation.	**1.** Remediation contractor to provide documentation from the supplier confirming the material is a product comprising only VENM (i.e., natural quarried product). A hold point remains

only natural quarried products.	documentation.		until the validation consultant approves the material for importation or advises on the next steps. **2.** Material is to be inspected by the validation consultant upon importation to confirm it is free of anthropogenic materials, visible and olfactory indicators of contamination, and is consistent with documentation. **3.** Review of the quarry's EPL.

8.5 Validation Reporting

A SQEC will prepare a final Validation Report which will document the remediation works completed and validation assessment results in accordance with the NSW EPA (2020) '*Consultants Reporting on Contaminated Land, Contaminated Land Guidelines'.*

Whilst the primary remediation goal is the removal and / or appropriate containment of asbestos impacted soils, the site validation report is required to consider the wider site area beyond the areas of interest and provide an overall assessment of the site suitability for the proposed continued land use of commercial/industrial land use.

Any unexpected finds of contamination encountered must also be included and will detail how they were assessed, managed, remediated and validated.

9 ENVIRONMENTAL MANAGEMENT

The remediation works must be undertaken with all due regard to the minimisation of asbestos health risks, environmental effects and to meet all statutory requirements. The works will include the following items:

9.1 Installation of Controls

The principal contractor must ensure that all site workers understand their individual responsibilities in preventing pollution and environmental effects on the site. A recommended sequence for setting up controls can include:

- Establish a single stabilised entry/exit point to the site,
- Divert upslope water around the area of interest,
- Put up barriers to fence off areas where no disturbance is required, and if necessary,
- Stabilise any exposed earth works progressively.

9.2 Maintenance of Controls

Best practice includes anticipation of the likely risks and being prepared for unusual circumstances, e.g., having spare sediment fence material on the site. All erosion and sediment control works should be checked after each rainfall event to ensure they are working properly. Maintenance might include:

- Topping up the gravel on the stabilised access; and
- Repairing any erosion of drainage channels.

9.3 Pre-Work Site Protection

Prior to works commencing, the nominated Class A asbestos removal contractor is responsible for the safe and adequate removal and disturbance of all asbestos impacted soils onsite. Barricades (including safety tape) shall be erected to control access to the Designated Asbestos Removal Area. Warning signs must be erected indicating “No unauthorised access, Asbestos Removal Works in Progress”.

The asbestos removal area must be segregated from the remaining areas of the site with safety tape placed at a minimum distance of 10m from the work face (where required).

Before the commencement of the remedial activities, all services such as power, water, gas sewerage and telecommunications cables should be identified and, where possible, be disconnected by the principal contractor. Water will be required for dust control purposes by the nominated Class A asbestos removal contractor.

9.4 Erosion & Sediment Control

Erosion and run-off control measures may be required during the remediation works to prevent stormwater and/or surface water runoff entering or leaving the works area. At no stage shall run-off from the works area be permitted to enter stormwater drains or the surrounding environment without the appropriate regulatory authority. Controls shall be established in accordance with the *Erosion and Sediment Control – A Field Guide for Construction Site Managers* (Witheridge 2012).

In summary the four (4) basic principles for sediment and erosion control are:

- Make sure everyone working on the site understands how important it is to not pollute stormwater,
- Do not disturb more of the site than required,
- Install erosion and sediment controls before starting work, and
- Maintain your erosion and sediment control works throughout the remedial works phase.

9.5 Noise Control

Noise control methods may vary dependent upon the equipment being used for particular remedial activities. Recommended methods include:

- Site work will be restricted to the hours specified in this RAP,
- The use of construction vehicles on-site will be kept to a minimum,
- All equipment in operation in open areas on-site shall comply with the requirements of AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites, and
- NSW EPA Interim Construction Noise Guidelines (SMGS 2009).

9.6 Dust Control

Site personnel, the public, adjacent neighbours and the environment shall be protected from the effects of dust created during the works. The nominated Asbestos dust suppression techniques shall be employed, such that there shall be minimal to no visible generation of dust. The site and open working areas used by machinery will be dampened down periodically to reduce dust generation. The factors that contribute to dust generation include:

- Wind blowing across a cleared surface of the ground,
- Loose stockpiled material, and
- The movement of machinery over the loose unsealed surface of the working site,

During the remediation works, the following methods will be employed to manage dust generation and distribution:

- Dampening the surface of the site and working area,
- Wetting down the surface of the stockpiles,
- Ceasing work in strong winds; and
- Undertaking the loading or unloading of dry soil as close as possible to the stockpiles to prevent the spread of loose material around the site.

9.7 Finalisation of Works

Ensure that the site is stabilised, and no exposed soil remains before removing the erosion and sediment controls. If backfilling and landscaping is not completed before handing over the site to the owners, ensure they are aware of their responsibilities to prevent pollution.

10 ASBESTOS REMOVAL CONTROLS

The following safety procedures must be implemented and adhered to during the removal of identified asbestos contaminated soils. The excavation of asbestos contaminated soils is to be conducted in a safe manner, however only licenced asbestos removalists, personnel inspecting soils and affected by dust generated from stockpiles are to adhere to the full scope of asbestos removal procedures described within this RAP.

The nominate asbestos removal contractor must develop an Asbestos Removal Control Plan (ARCP) specific for the works which are to be undertaken, previously briefed above.

10.1 Asbestos Removal

This section of the Plan outlines the general WH&S procedures, which must be implemented during the remediation works regarding the remediation of the asbestos impacted soils on the site.

The following procedures are an outline of the methodology to be used for any asbestos removal work to be undertaken inside remedial zone including the potential disturbance and removal of asbestos impacted soils at the site. These procedures are a guide only and do not override the requirements of legislation and accepted minimum standards, which apply for work involving removal of hazardous materials. The Procedure must be read in conjunction with the most recent version of the Safe Work Method Statement (SWMS) and ARCP provided by the nominated licenced asbestos removal contractor. The WMS will be adopted by all workgroups involved in the remediation work and will be updated daily if needed by the asbestos contractor in conjunction with PM for the remediation works.

10.2 General Requirements

The general requirement of asbestos removal works and contents of the ARCP should cover the following:

- The nominated licenced asbestos removalist contractor coordinating the asbestos removal works shall be required to hold a Class A asbestos removal work licence for friable and non-friable asbestos works.
- The nominated licenced asbestos removalist contractor coordinating the asbestos removal works shall have acquired an Asbestos Removal Permit for the specific site works through the regulator as is required by their licence.
- Personnel handling the asbestos impacted soil or material must have the appropriate training and experience for handling asbestos materials and of the required decontamination procedures. Only the licensed asbestos removal contractor will physically (by hand) remove fragments of asbestos containing materials to the ground surface.
- Personnel operating machinery involved in excavations, stockpiling and transferral of fill must adhere to requirements within this RAP and follow instructions from nominated asbestos removal contractor and nominated SQEC and LAA.
- Access to asbestos removal area for inspections or similar by other work parties will only be allowed during ‘tools down’ periods under the direct supervision and control of the licensed asbestos removal supervisor.
- Access to asbestos removal area will only be allowed by personnel at completion of asbestos removal by excavation in the designated work area. This access restriction will be lifted once the validation consultant has carried out a visual inspection and given a clearance certificate for the specific area.
- If air monitoring results all returning results of <0.01 fibres/mL, access to work area can be granted without the use of asbestos respiratory equipment given that no intrusive work will break the physical barrier.
- Decontamination facilities are to be provided and maintained by the asbestos contractor for all personnel working at the site.

10.3 Decontamination Procedures and Facilities

10.3.1 Decontamination Area

All personnel working within the designated asbestos removal areas with or in any other way being affected by asbestos contaminated material will be required to decontaminate at the end of each work shift and at the end of the workday. A decontamination area should be established on site for the use of the personnel conducting the asbestos works. The decontamination area will also comprise a segregated area where the contaminated work clothing and respirators are removed and discarded.

Prior to any work commencing on any of the designated asbestos removal work areas, suitable barricades are to be erected around the boundary of the work site. Asbestos warning signage will be provided at suitable intervals and at all entrances detailing the restriction of access to the site.

The decontamination area is the area in which potentially contaminated PPE must be removed prior to leaving the designated asbestos removal work area. It is to be located at the entry to the work Designated Work Area. It must not be used for purposes other than decontamination. All personnel leaving the designated asbestos removal work area must use the decontamination area prior to leaving the site. Personnel will remove disposable protective clothing prior and will be required to ensure that no asbestos soiled clothes or PPE leave the decontamination area to the 'clean end' of the area.

Personal protective equipment (PPE) is to be provided to all personnel working in the Designated Work Areas and must be available within the decontamination area. The PPE which is required will be to the standards required for the asbestos removal work detailed in this RAP.

10.3.2 Decontamination of Equipment

Asbestos impacted soil from the site is to be wet down and covered during transport to a licenced waste facility. Trucks should not be tracking over exposed, contaminated soil. If contact with contaminated soil occurs, the tires of impacted trucks should be washed down in the designated decontamination area (wheel-wash bay) prior to leaving site. The decontamination must be carried out such that cross contamination to site soils does not occur. The wash down area must become part of the asbestos removal and validation process once the wash bay has no further use.

Once the excavator has loaded the final truck, the excavator bucket and tracks are to be decontaminated in the designated decontamination area. The decontamination will involve washing and removing soil from the tracks and bucket as best as practical. The loads on all trucks are to be covered with tarpaulins prior to leaving site, to minimise loss of contaminated materials and the generation of dust during transport.

10.3.3 Restricted Access to Asbestos Work Area

Access to asbestos removal work areas will be determined by the licensed asbestos removal contractor supervisor for the work site. The asbestos removal work area shall be deemed not accessible to non-employees or personnel not inducted for work within the contaminated areas until a final clearance has been given by the asbestos assessor / validation consultant.

10.3.4 Personal Protective Equipment (PPE)

Where personnel are working on the ground within the designated asbestos areas and are required to handle, or are likely to come into direct contact with asbestos material:

- High visibility disposable coveralls,
- Safety boots with rubber soles,
- Boot covers (asbestos grade),
- Safety glasses,
- Gloves,

- Respirators - half face P2 or P3 respirator.

The protective clothing will be provided daily to employees at the commencement of their work shift at the change area. Protective clothing is only for use in the designated asbestos removal work area and will not be used outside of this area.

Once workers are inside the Designated Work Area, they are not permitted outside of that area without proceeding through the appropriate decontamination procedures. No employee is permitted to remove any disposable protective clothing from the site. Contaminated overalls and PPE are to be disposed of with the asbestos contaminated waste materials in appropriately labelled waste bins or bags.

These requirements are specified as a minimum standard and may be modified at the discretion of the licensed asbestos removal contractor during the course of the remediation works.

10.3.5 Disposal of Asbestos Materials & Contamination

After asbestos fragments and asbestos contaminated soils have been removed, all asbestos waste including soiled PPE, shall be placed into 0.2mm polyethylene plastic bags marked with “Asbestos Waste” which, are to be sealed by wire ties or tape and transported in leak-proof vehicles for disposal at an approved regional asbestos waste disposal depot.

Bags or primary containers which have held asbestos material shall not be re-used, and containers marked as above shall not be used for any other purpose.

Transport of asbestos waste material shall be done so in plastic lined leak-proof vehicles or in air leak proof vehicles that are covered so that no spillage or dispersal of the waste to the atmosphere occurs.

Care must be taken to ensure that the integrity of the plastic bags is not damaged during handling or transportation. In particular, bags of asbestos waste shall not be thrown or dropped from a height, (which may rupture the bag). Vehicles may be checked for cleanliness prior to leaving the site.

Controlled wetting of waste shall be employed, where practicable, to reduce dust emission during bag sealing and in cases of accidental bag rupture, during transportation. Excessive water logging shall be avoided as the excess of contaminated water may leak out of the bags.

The asbestos waste shall be disposed of at a site and in a manner as approved by the Local and State authorities. Documentary evidence of the disposal shall be collected and provided. This will include name of the authorised tip, weighbridge docket and registration number of vehicles for every disposal.

10.3.6 Personal Hygiene Requirements

During the site induction programme, the project personnel will be briefed on the requirements for personal site hygiene. All personnel entering the site, including workers, supervisors and visitors, will observe the following personal hygiene regulations:

- No eating, drinking or smoking will be permitted in the working area. Eating, drinking and smoking will only be permitted in designated areas after decontamination has been completed,
- The required personal protective equipment is to be worn prior to entry to the work site. Disposal of personal protective equipment and disposable overalls will be the responsibility of the contractor. No soiled protective clothing is to be disposed of as general waste or be allowed to lease the site,
- Fresh protective clothing will be available at all times for anyone who requires it. Clothing that has come into any contact with contaminated material shall not be re-worn,
- Hand to mouth and hand to face contact should be avoided on site, and
- All site personnel working with asbestos impacted soils are to decontaminate at the end of the day prior to leaving the site.

10.4 On Site Management of Asbestos Impacted Stockpiles

The movement and stockpiling of asbestos contaminated materials must be carefully managed and monitored to prevent cross contamination of soils (if required). The management and tracking of stockpiled materials on site shall be the responsibility of the SQEC and LAA. If stockpiles need to be relocated prior to loading onto trucks, they must be relocated onto a hardstand area or at least onto plastic sheeting to reduce the potential for cross contamination and enhancement of waste volumes. The movement of asbestos impacted soil must be undertaken under the supervision of the licenced asbestos removalist contractor.

The management and tracking of stockpiled materials should be recorded on a site diagram and daily site logs. These documents should be updated daily and kept in the site office. The daily site log should record the area in which work was conducted for that day, general description of the works completed, movement of materials onsite, movement of materials offsite, etc. The site diagram will record the locations and types of the stockpiled materials.

10.5 Airborne Asbestos Air Monitoring Program

Due to the nature of the work process and the potential risk of asbestos fibres being present within the soil and in dust generated during works, it is recommended that an asbestos air monitoring program is implemented for the period of the asbestos contaminated soil bulk earth works to ascertain that no asbestos fibres escape the designated work area(s). The air monitoring also works as a hold point for daily review of risk and potential cease work.

During the course of the asbestos removal works, air monitoring devices are generally placed on the boundaries of the designated work areas or additional areas deemed by the occupational hygienist necessary to assess the airborne fibre risk.

The sample collection and analysis must be conducted in accordance with the National Occupational Health and Safety Commission (NOHSC) *'Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust'* [NOHSC: 3003 (2005)].

The concentration of fibres at the site boundaries should be <0.01fibres/mL of air. Concentrations of asbestos fibres shall be dealt with as follows:

Table 11. Actions Triggered by the Concentration of Asbestos Fibres.

Concentrations of asbestos fibres:	Action:
<0.01 fibres/mL	Continue with control measures
Between 0.01 fibres/mL and 0.02fibres/mL	Review control measures
≥ 0.02 fibres/mL	Stop work until the cause of the elevated results is remedied

The necessity of continuing the air monitoring programme will be assessed ongoing by the nominated LAA in conjunction with the designated site representatives of the principal contactor with respect the required level of monitoring for the remainder of the project. Results will be made available to employees daily.

11 SITE MANAGEMENT

11.1 Hours of Operation

The timing of various stages of the works needs to be agreed in advance with the designated site representatives of the principal contactor so that appropriate traffic operating plans can be put in place for the duration of the works. All Works, including the arrival and departure of heavy vehicles, shall be restricted to the following working hours:

- Monday to Friday, 7:00 am to 6:00 pm
- Saturdays, 8:00 am to 1:00 pm
- Sunday and Public Holidays, no works pending prior approval.

Should any contractor wishes to work outside the above working hours, the contractor shall obtain written approval from the designated site representatives of the principal contactor and their client prior to the work occurring.

11.2 Traffic Control

Movement of excavation equipment, trucks and other vehicles involved in the remediation works, to and from the site will be strictly controlled by the nominated earthworks/construction contractor and restricted to a minimum and only take place during appropriate working hours.

All trucks carting soil material are to have their loads covered. No trucks will be allowed to leave the site without covers on. Trucks without load covers are not to be admitted to the site during the removal of waste materials from the site.

All vehicles will be visually free of soil before permission to leave a remediation area is granted.

11.3 Community Relations

All community and/or media enquiries regarding the project and/or site are to be directed to the designated site representatives of the principal contactor onsite . No contact or communication regarding information about the project and/or site is to be made with the community and/or media without the prior written permission of the principal contactor.

12 EMERGENCY PROCEDURES

In the event that an emergency arises, a potentially dangerous situation is encountered or of any suspect / unknown material is identified, site work is to cease immediately, and the matter reported to the site supervisor for immediate assessment and action.

An emergency will include, but not be limited to:

- Any site personnel involved in an accident or experiences adverse symptoms of exposure while onsite,
- A condition is discovered that suggests the existence of a situation more hazardous than anticipated and that the appropriate safety equipment is not available, or
- A breach of the exclusion zone (Designated Work Area) by non-approved personnel.

The following procedures will be employed by contractor/consultant personnel in potentially hazardous areas:

- In the event that any site personnel experience any adverse symptoms of exposure whilst onsite, work will be halted, and instruction or assistance sought from the site supervisor,
- In the event of an accident, the site supervisor and the injured person will compile an incident report, which will be submitted to management within 24 hours of the incident. Follow-up actions will be carried out to correct situation.

In the event of fire or explosion, if the situation is readily controllable with available resources, take immediate action to do so. This may include:

- Assessment to determine whether the situation is controllable,
- If the situation is controllable, dispatch fire-fighting equipment to the site of the fire and take immediate action,
- Attempting to put out the fire using methods compatible with the burning materials,
- Isolating the fire to prevent spreading, if possible, and
- If the situation is not immediately controllable, notify the local fire department (000) and evacuate all non-essential personnel from site.

In the event that an emergency situation arises, the site supervisor must address the problem and notify the ambulance, fire brigade and police if necessary. In addition, the relevant management personnel (as distinguished via site inductions) must be notified immediately.

To minimise the impact of an emergency situation, at least one of the contractor's site personnel working onsite will be trained in basic First Aid procedures and all field personnel will have immediate access to a First Aid kit.

Emergency phone numbers should be made available at the commencement of the Project. All these services can be called on 000 in a life-threatening emergency. In addition, the mobile phone numbers of the Site Supervisor and the PM will be made available.

In the event of an emergency, it is ideal that the decontamination procedures are adhered to. However, depending on the emergency and the concentration of asbestos in the work area, these decontamination procedures may be altered by the site supervisor (in consultation with the licenced asbestos removal contractor).

13 REPORTING REQUIREMENTS

13.1 Soil & Waste Management

The following points summarise the key reporting requirements for documenting the waste management and classification during the remediation process:

- All soil and waste must be assessed in accordance with the NSW EPA (2014) *Waste Classification* Guidelines' or if applicable the NSW EPA (2014) '*Excavated Natural Material Order'*.
- Waste classification reports must be undertaken and provided prior to soils and/or waste materials leaving site for offsite disposal to an appropriate landfill for that classification.
- WasteLocate tracking will be undertaken in accordance with NSW EPA requirements and arrangements with the licenced waste facility will be undertaken prior to transporting asbestos impacted soil.
- Copies of waste disposal dockets from landfill facility to be maintained with site records and incorporated within the final validation report.

13.2 Clearance Certificates

Asbestos Clearance Certificates are required after all asbestos removal works are completed onsite. All Asbestos Clearance Certificates must detail the following:

- the scope of asbestos removal works,
- the remedial, sampling and assessment methodologies,
- results of all sample analysis, and
- detail the successful removal of asbestos materials as per the outlined scope of removal for the remediation works.

The Asbestos Clearance Certificate must be issued by the nominated LAA prior to any personnel onsite entering the designated asbestos removal work area without appropriate asbestos PPE or any validation soil sampling undertaken.

13.3 Air Monitoring

Where air monitoring for airborne asbestos fibres is undertaken, results of air monitoring must be reported upon receipt of laboratory results and made readily available to site personnel if requested.

13.4 Site Validation Report

The nominated SQEC and LAA must prepare a final site validation report which will document the remediation works completed and validation assessment results in accordance with the NSW EPA (2020) '*Consultants Reporting on Contaminated Land, Contaminated Land Guidelines'.*

Whilst the primary remediation goal is the removal and / or appropriate containment of asbestos impacts soils, the site validation report is required to consider the wider site area beyond the areas of interest and provide an overall assessment of the site suitability for the proposed continued land use of commercial/industrial land use.

Any unexpected finds of contamination encountered must also be included and will detail how they were assessed, managed, remediated and validated.

14 CONCLUSION

The purpose of this interim RAP is to provide a framework to manage, remediate and validate identified non-friable and friable asbestos contaminated and impacted soils at the Site via excavation and disposal to a licenced landfill facility, for soil above the SAC, and on-site relocation and reuse of soil below the SAC.

Successful remediation of the identified asbestos impacted soil in accordance with this interim RAP will remediate the site from an asbestos in soil contamination perspective only. Therefore, due to the unexpected finds of hydrocarbon impacted soils and an unidentified USPT encountered onsite further assessment, management, remediation and validation of these finds will be required in order to make the site suitable for the proposed development. The proposed remedial works for the unexpected finds must be drafted into an updated site RAP that will supersede this interim RAP.

It is considered that conformance with this interim RAP and the updated RAP will minimize the potential for environmental and human health impacts during the remedial works at the site and successfully make the site suitable for the proposed development land use

Once all remedial works are completed onsite a final validation assessment report for the remediation of the site will be prepared by a SQEC and LAA. It will be prepared in general accordance with the NSW EPA (2020) '*Consultants Reporting on Contaminated Land, Contaminated Land Guidelines'* and other appropriate NSW EPA endorsed guidance documentation.

15 STATEMENT OF LIMITATIONS

This report and the associated services performed by Safe Work and Environments Pty Ltd (SWE) are in accordance with the scope of services set out in the contract between SWE and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the Subject Site.

SWE derived the data in this report primarily from research, visual inspections, examination of available records, interviews with individuals with information about the site, and if requested, limited sample collection and analysis made on the dates indicated. In preparing this report, SWE has relied upon, and presumed accurate, certain information provided by government authorities, the Client and others identified herein. Except as otherwise stated in the report, SWE has not attempted to verify the accuracy or completeness of any such information.

No warranty, undertaking, or guarantee, whether expressed or implied, is made with respect to the data reported or to the findings, observation, conclusions and recommendations expressed in this report. Furthermore, such data, findings, observations, conclusions and recommendations are based solely upon the existence at the time of the investigation. The passage of time, manifestation of latent conditions or impacts of future events (e.g., changes in legislation, scientific knowledge, land uses, etc.) may require further investigation at the site with subsequent data analysis and re-evaluation of the findings, observation, conclusions and recommendations expressed in this report.

Although normal standards of professional practice have been applied, the absence of any identified hazardous or toxic materials on the subject property should not be interpreted as a guarantee that such materials do not exist on the site.

This report has been prepared on behalf of and for the exclusive use of the Client and is subject to and issued in connection with the provisions of the agreement between SWE and the Client. SWE accepts no liability or responsibility whatsoever and expressly disclaims any responsibility for or in respect of any use of or reliance upon this report by any third party or parties.

It is the responsibility of the Client to accept if the Client so chooses any recommendations contained within and implement them in an appropriate, suitable and timely manner.

16 REFERENCES

- National Environmental Protection Council (NEPC) (1999) *'National Environment Protection (Assessment of Site Contamination) Measure 1999'* (amended 2013), and herein referred to as (ASC NEPM (2013)).
- National Occupational Health and Safety Commission (NOHSC) *'Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Dust'* [NOHSC: 3003 (2005)].
- NSW Department of Environment and Climate Change (2009a) *'Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997'.*
- NSW Department of Environment and Conservation (2006) *'Guidelines for the NSW Site Auditor Scheme, 2nd ed'.*
- NSW Department of Environment and Conservation (1997) *'Guidelines for the Assessment and Management of Groundwater Contamination'*.
- NSW EPA (2014) *'Waste Classification Guidelines'*.
- NSW EPA (2006) *'Guidelines for the NSW site Auditor Scheme. 2nd edition'.*
- NSW EPA (1995) '*Sampling Design Guidelines. ISBN 0-7310-3756-1'*.
- NSW EPA (2020) '*Consultants Reporting on Contaminated Land, Contaminated Land Guidelines'*.
- Safe Work Australia (2015) *'Excavation Work Code of Practice'.*
- Safe Work Australia (2016) *'How to Manage and Control Asbestos in the Workplace Code of Practice'.*
- Safe Work Australia (2018) 'How to Safely Remove Asbestos Code of Practice'.
- Safe Work Australia (2018) *'Code of Practice on How to Safely Remove Asbestos'*.
- WorkCover NSW (2014) *'Guidelines for Managing Asbestos in or on Soil'.*
- WA Department of Health (DOH) (2021) '*Guidelines for the Assessment Remediation and Management of Asbestos Contaminated Site in Western Australia'*, and herein referred to as the (WA Guidelines).

Figures

Figure A: Site Location

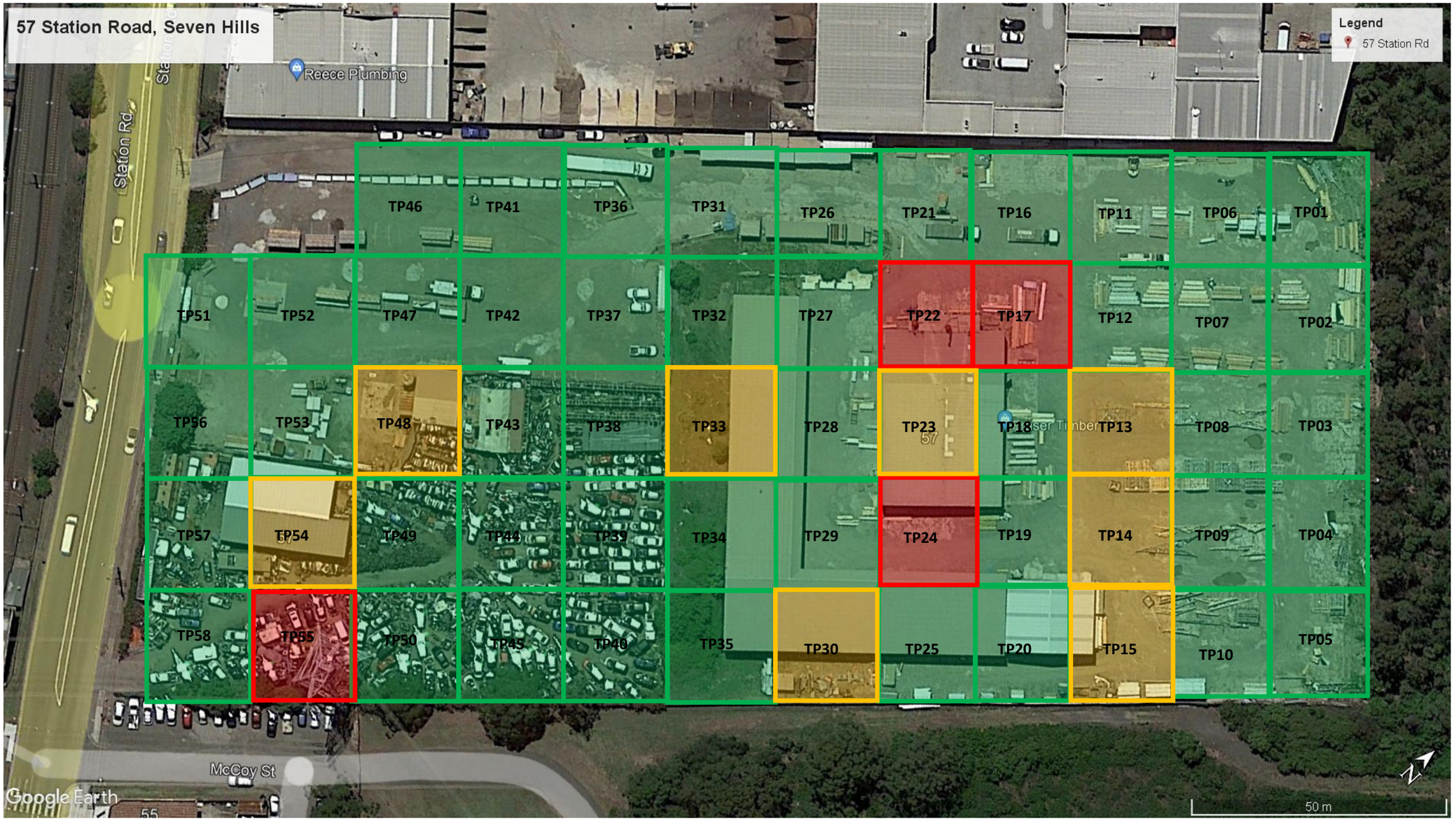
Figure B: Grid Soil Sampling Locations

Figure C: Judgemental Soil Sampling Locations

Figure D: Positive Grids and Judgemental Soil Sampling Locations

57 Station Road, Seven Hills, NSW 2147

Scale: as shown	**Source:** Google Earth Pro, SixMaps NSW	**Client:** FDC Construction Pty Ltd **Project Code:** S110506 **Date Drawn:** 30/03/2022 **Drawn by:** Alexandar Mitevski	**Remediation Action Plan** 57 Station Road, Seven Hills, NSW, 2147 **Figure A – Site Location**	***Disclaimer:*** *This figure may be based on third party data or data which has not been verified by SWE and it may not be to scale. As such, unless expressly agreed otherwise, this figure is intended as a guide online and SWE does not warrant its accuracy*	SAFE WORK & ENVIRONMENTS ENVIRONMENTAL & WHS CONSULTANTS



Legend:

- Test pit samples with no visual asbestos observed
- Test pit samples with visual asbestos below the NEPM criteria
- Test pit samples with asbestos % above the NEPM Criteria

Scale: as shown	**Source:** Google Earth Pro	**Client:** FDC Construction Pty Ltd **Project Code:** S110506 **Date Drawn:** 29/03/2022 **Drawn by:** Alexandar Mitevski	**Soil Validation Assessment** 57 Station Road, Seven Hills, NSW, 2147 **Figure B – Grid Soil Sampling Locations**	***Disclaimer:*** *This figure may be based on third party data or data which has not been verified by SWE and it may not be to scale. As such, unless expressly agreed otherwise, this figure is intended as a guide online and SWE does not warrant its accuracy*

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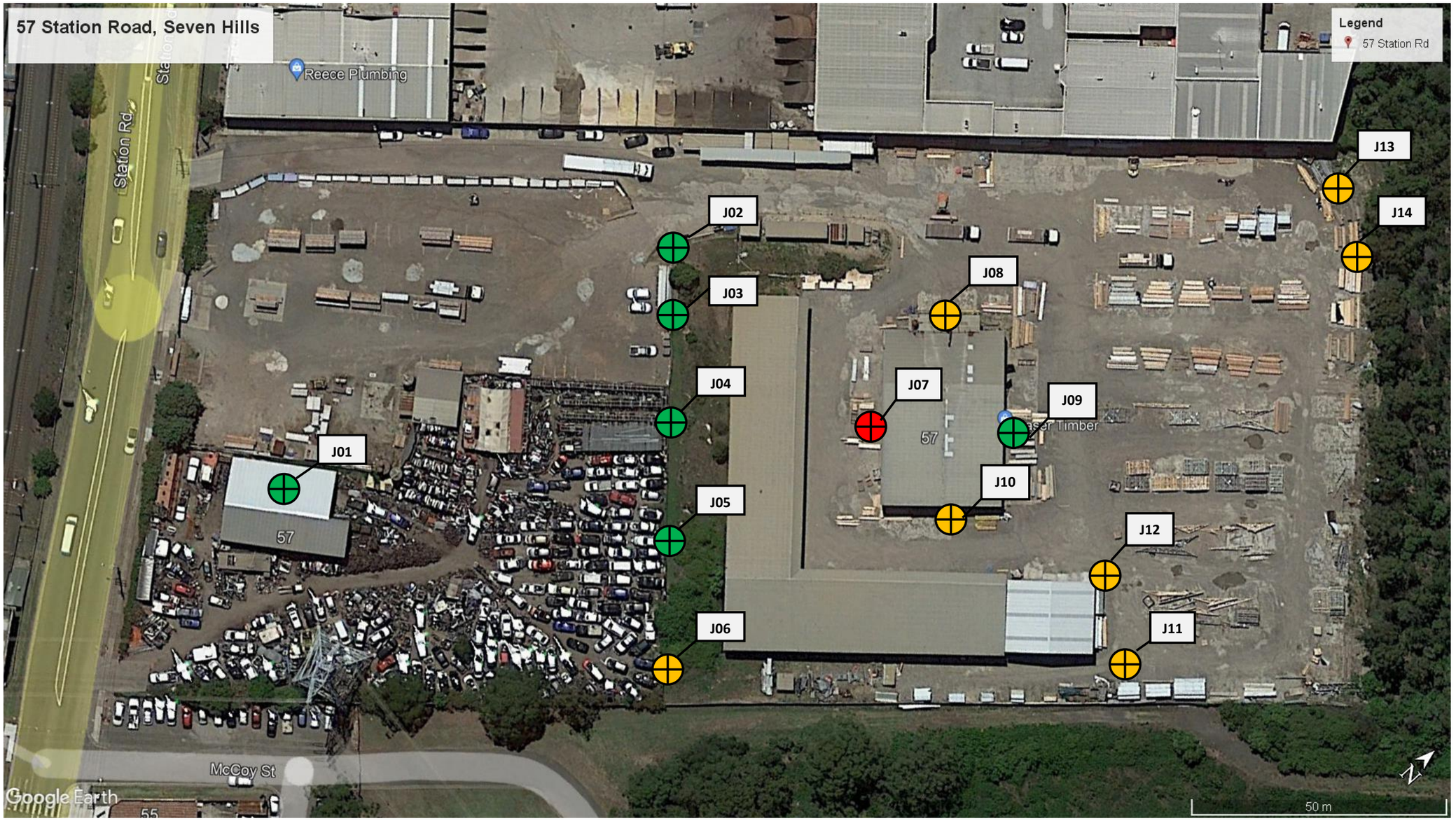

Legend:

- Judgemental samples with no visual asbestos
- Judgemental samples with visual asbestos below the NEPM criteria
- Judgemental samples with asbestos above the NEPM criteria

Scale: as shown	**Source:** Google Earth Pro	**Client:** FDC Construction Pty Ltd **Project Code:** S110506 **Date Drawn:** 29/03/2022 **Drawn by:** Alexandar Mitevski	**Soil Validation Assessment** 57 Station Road, Seven Hills, NSW, 2147 **Figure C - Judgemental Soil Sampling Locations**	***Disclaimer:*** *This figure may be based on third party data or data which has not been verified by SWE and it may not be to scale. As such, unless expressly agreed otherwise, this figure is intended as a guide online and SWE does not warrant its accuracy*

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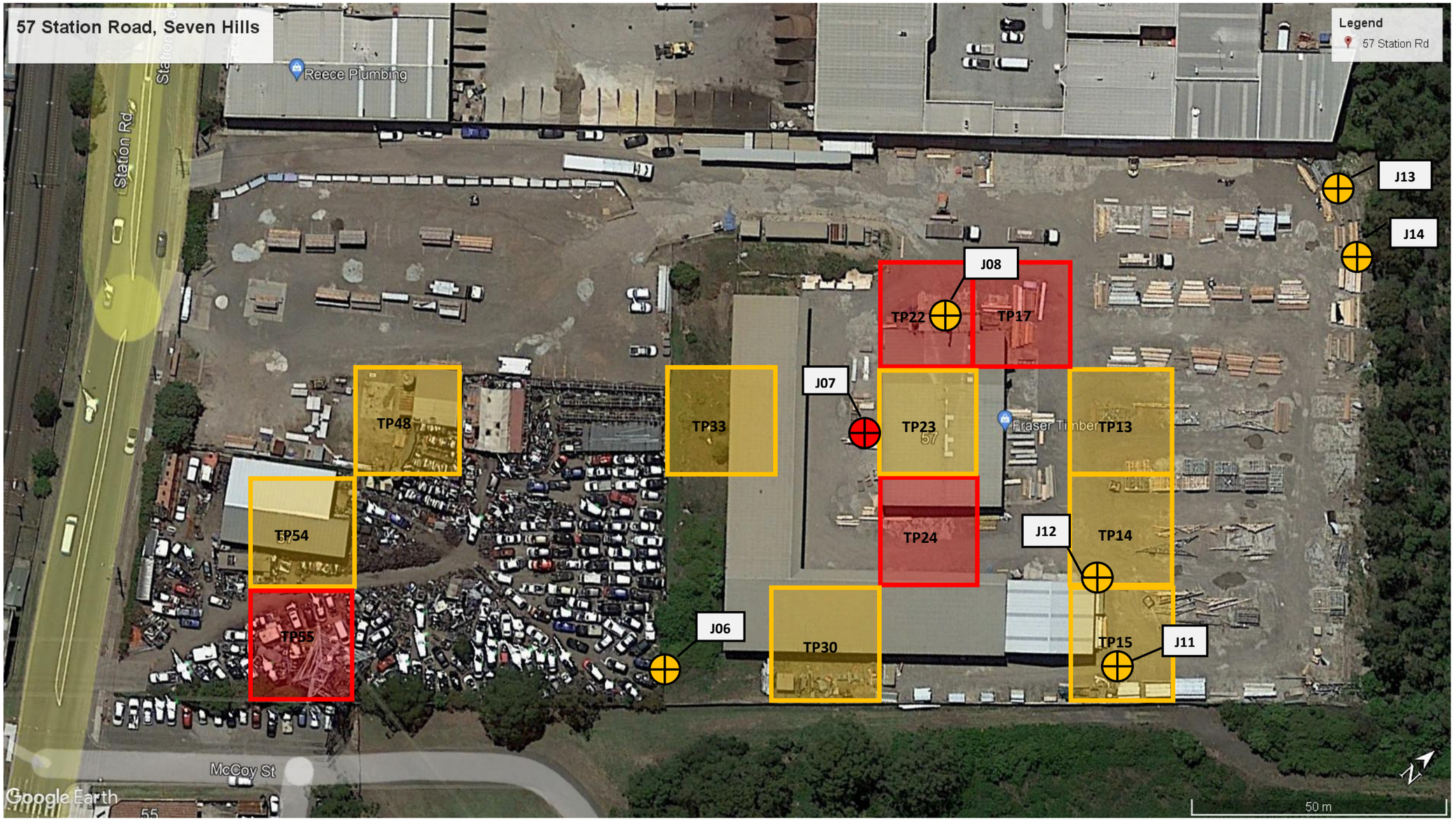

Legend:

- Test pit samples with no visual asbestos observed
- Test pit samples with visual asbestos below the NEPM criteria
- Test pit samples with asbestos above the NEPM criteria
- Judgemental samples with visual asbestos below the NEPM criteria
- Judgemental samples with asbestos above the NEPM criteria

Scale: as shown	**Source:** Google Earth Pro	**Client:** FDC Construction Pty Ltd **Project Code:** S110506 **Date Drawn:** 29/03/2022 **Drawn by:** Alexandar Mitevski	**Soil Validation Assessment** 57 Station Road, Seven Hills, NSW, 2147 **Figure D - Positive Grids and Judgemental Soil Sampling Locations**	***Disclaimer:*** *This figure may be based on third party data or data which has not been verified by SWE and it may not be to scale. As such, unless expressly agreed otherwise, this figure is intended as a guide online and SWE does not warrant its accuracy*

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Appendix A –

Unexpected Finds Protocol

UNEXPECTED FINDS PROTOCOL

57 Station Road, Seven Hills NSW

1.0 Introduction

Safe Work and Environments Pty Ltd (SWE) was engaged by FDC Construction (NSW) Pty Ltd (FDC) to prepare an Unexpected Finds Protocol (UFP). This protocol is developed to assist with any potentially new identified asbestos in soil contamination during work to the 57 Station Road, Seven Hill NSW site (herein referred to as "the site").

2.0 Unexpected Finds Protocol

This Unexpected Finds Protocol (UFP) applies to intrusive earthworks planned to the site.

An **unexpected find** under this UFP is defined as:

"Any identification of visible or laboratory detected non-friable (bonded) or friable asbestos containing materials (ACM) to the surface, within in situ soil or stockpiled soil other than already identified asbestos contaminated soils documented in SWE, March 2022, Asbestos Quantification Assessment report".

FDC or subcontractor will use an asbestos awareness trained spotter that is aware of the appearance of most well-known asbestos materials, such as asbestos cement products, insulation materials, vinyl tiles, bituminous membranes and boards, etc. The spotter will be:

1. observing/inspecting the ground surface of work areas for unexpected finds prior to intrusive work; and
2. observing the work areas during intrusive earthworks to examine the exposed soils for any evidence of unexpected finds such as asbestos materials or suspected/unknown materials that may contain asbestos.

2.1 Procedure for Non-Friable ACM

In situations where non-friable asbestos is suspected uncovered/identified:

Step 1 Cease work immediately and retire from the area and advise Site Management and Client Representative.

Step 2 The subject area is to be corded off by the use of barrier tape and warning signs. Warning signs shall be specific to Asbestos Hazards and shall comply with the Australian Standard 1319-1994 – Safety Signs for the Occupational Environment. The exposed soil suspected to contain non-friable asbestos contamination will be covered with black builder's plastic or a geotechnical membrane ('bidim') material, to control any potential airborne asbestos fibre release.

Step 3 Notify SWE of the suspect material for sampling and analysis to confirm the presence (or absence) of asbestos. Provide an asbestos assessment report to document findings and extent of contamination. As part of the assessment, airborne monitoring for asbestos fibres should be carried out to assess for any potential airborne exposure. Determine if ACM can be classified non-friable or friable. If friable, skip **Steps 4 through to 7** and continue at Section 2.2 from **Step 8.**

Safe Work and Environments Pty Ltd ABN 88127010995
7/103 Majors Bay Road, Concord, NSW 2137
Phone: 02 8757 3611 Fax: 02 8757 3612
Email: enquiries@swe.com.au

Step 4 Determine, in consultation with client and Principal Contractor, whether soil/waste/fill will be retained on site or disposed off-site.

Step 5.1 If soil is to be reused on site, then carry out quantification assessment for comparison with NEPM criteria for asbestos in soil.

Step 5.2 If off-site disposal is considered, then carry out waste classification (WC) assessment of soil prior to disposal or apply existing WC applicable to the volume of soil.

Step 6 Carry out remediation of asbestos impacted soil as per recommendations by SWE and in line with NSW Safe Work *2016 Code of Practice How to Safely Remove Asbestos* and SWE's Remedial Action Plan (RAP).

Step 7 Carry out visual clearance inspection at completion of work, document with a clearance certificate and include in overall validation report at completion of site work or stage. (If friable contamination, then also carry out soil validation sampling and reporting to requirements in RAP).

2.2 Procedure for Friable ACM

If asbestos hotspots (> 10 visual identifiable asbestos fragments per excavator bucket), or any friable material, other than buried asbestos cement fragments are identified, all personnel are to cease work until materials are assessed and a comprehensive full friable asbestos removal procedure can be developed and implemented. The soil area should be covered with plastic sheeting and the work area closed until further advice can be obtained. Air monitoring for asbestos fibres should be carried out at the boundaries of the identified area to ascertain that no asbestos fibres are dispersed from the area.

Step 8 Carry out detailed assessment as per Step 3 and also include an Asbestos in Soil quantification assessment in line with NEPM 2013 Guidelines and the WA DoH 2009 Guidelines and provide recommendations for remediation work.

Step 9 Carry out background asbestos air monitoring to establish baseline data and to assess potential health risk associated with the exposed friable asbestos.

Step 10 Confirm if site documentation and procedures in RAP are appropriate for the identified friable asbestos removal.

Step 11 Engage appropriate licensed Class A removalist to supervise and control asbestos removal site.

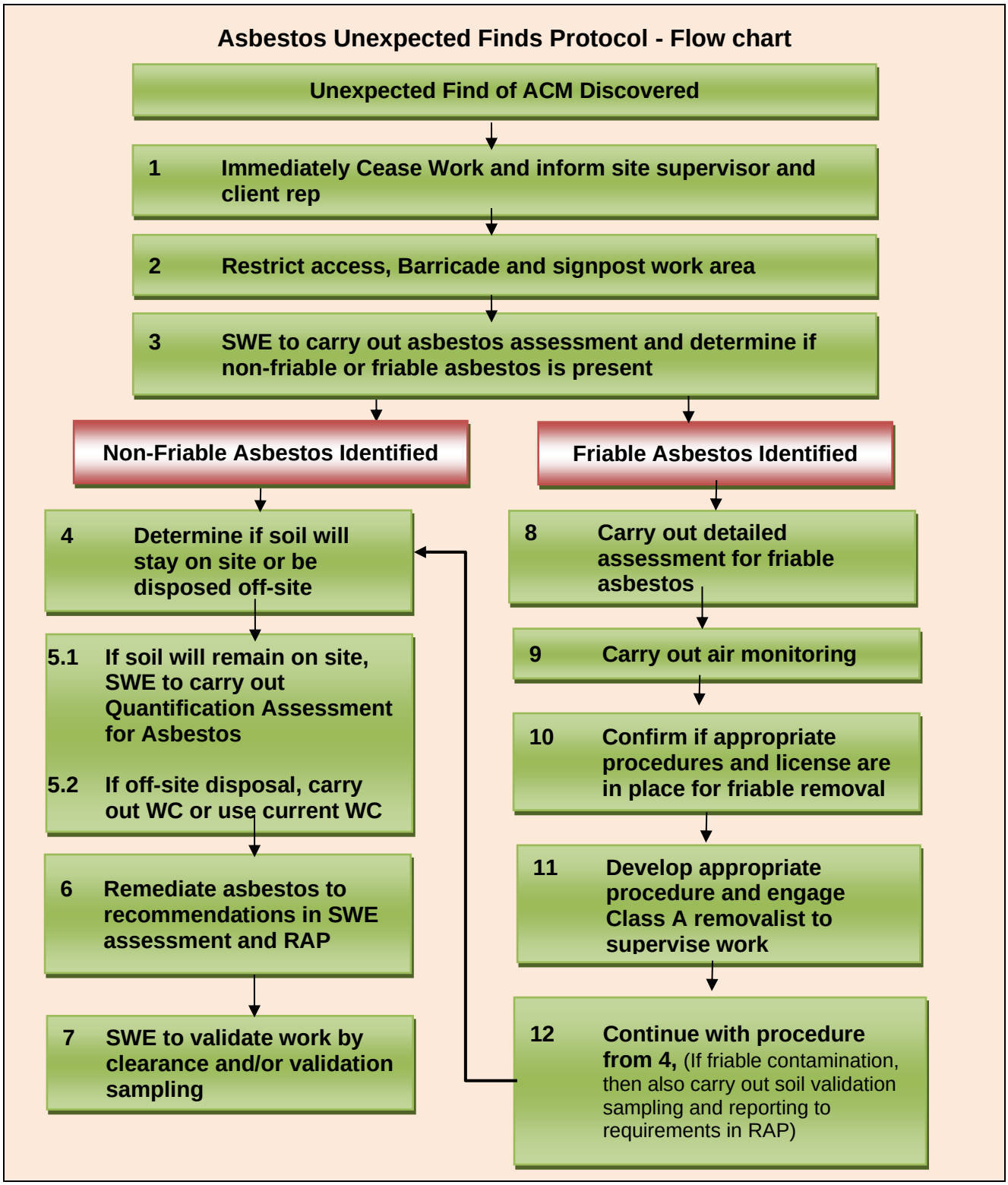
Step 12 Continue at **Step 4** of UFP.

Step 13 In addition to requirement in Step 7, also carry out soil validation sampling and reporting to requirements in RAP.

Safe Work and Environments Pty Ltd ABN 88127010995
7/103 Majors Bay Road, Concord, NSW 2137
Phone: 02 87573611Fax: 02 87573611
Email: **enquiries@swe.com.au**

ATTACHMENT A – UFP Flow Chart

Safe Work and Environments Pty Ltd ABN 88127010995
7/103 Majors Bay Road, Concord, NSW 2137
Phone: 02 87573611Fax: 02 87573611
Email: **enquiries@swe.com.au**



Safe Work and Environments Pty Ltd ABN 88127010995
7/103 Majors Bay Road, Concord, NSW 2137
Phone: 02 87573611Fax: 02 87573611
Email: **enquiries@swe.com.au**