Aqualand Projects Pty Ltd

Asbestos in Soil Management Plan

Central Barangaroo, Early Works DA-02

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Aqualand Projects Pty Ltd

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1. INTRODUCTION

EDP Consultants Pty Ltd (EDP) was engaged by Aqualand Projects Pty Ltd (Aqualand) to prepare an Asbestos Management Plan (AMP) to facilitate the Early Works Development Application 02 (EWDA-02) submission and works associated with EWDA-02. The site located at Hickson Road, Millers Point NSW (the site) as depicted in **Figure 1 - Appendix A.** The proposed SSDA will seek approval for early works associated with the future mixed-use development of Central Barangaroo (set out under MP06_0162). The proposal sees to undertake bulk excavation and site establishment works for the installation of the perimeter retention wall, and conduct remediation and archaeological investigations within the site.

These works will facilitate the provision of future basements, consistent with the parameters set out under the approved Concept Plan for Barangaroo under MP06_0162.

Asbestos contaminated soils will be disturbed / excavated as part of the SSDA proposal which include the following:

- Establish the site and installation of temporary plant and machinery, including dewatering and bentonite slurry plant and ancillary services,
- Construction of perimeter retention wall, including any required excavation, associated rock anchors and PRW capping beam construction,
- Associated remediation and Archaeological investigations in the area of excavation and works;
- Provision for future services,
- Associated "tie-in" works to Metro Interface Wall and the secant pile wall proposed by the applicant under SSD-39587022,
- De-stressing and removal of existing anchors supporting Sydney Metro pile wall,
- Bulk excavation for the provision of a future basement and associated rock anchors (including anchors to support the secant pile wall approved inSSD-39587022 ,
- Construction of foundation piling,
- Installation of waterproofing membrane,
- Construction of hydrostatic slab, and
- Structure and waterproofing for the Barangaroo Metro station southern entrance interface next to the existing Sydney Metro pile wall

2. BACKGROUND

Asbestos contamination has been identified within soils at the site, historically imported as part of reclamation activities between the 1950s – 1970s. To support Aqualand's development plan, a detailed intrusive investigation was undertaken by EDP in 2023 across the site to characterise and waste classify in-situ soils. Refer to **Section 4** for summary of the *Waste Classification of In-Situ Material, Central Barangaroo, Hickson Road, Millers Point NSW* report (EDP, 2023).

The findings from EDP, 2023 confirmed the presence of asbestos throughout the majority of fill material which require management during excavation and soil disturbance works.

This AMP is a supporting document to the EDP Consultants, *EWDA-02 Remedial Works Plan, Central Barangaroo, 2024* report (herein referred to as RWP). The RWP was developed to provide additional remediation detail to the existing JBS Environmental Pty Ltd (JBS) Remediation Action Plan (RAP) (JBS 2013, herein referred to as the JBS RAP). The JBS RAP was subject to NSW EPA Site Auditor Review and considered appropriate to render the site suitable for the proposed use in the Site Audit Statement (SAS) (GN 439B-5) and Site Audit Report (herein referred as SAR) prepared by ENVIRON Australia Pty Ltd (AS121473, ENVIRON 2013), providing updated supporting documents (including this AMP) were prepared.

3. OBJECTIVE AND SCOPE

The objective of this AMP was to detail management strategies to mitigate risks posed by asbestos contaminated soils identified at the site which will be excavated for off-site disposal (or potential re-use) as part of the planned EWDA-02 works.

To achieve the above objective and to address legal obligations for managing asbestos in the workplace, EDP has prepared this AMP consistent with the requirements as outlined in the NSW *Work Health and Safety Regulation 2017* and Code of Practice: *How to Manage and Control Asbestos in the Workplace 2019*. The AMP specifies work practices and procedures to:

- Ensure the implementation of control strategies for the management of potential asbestos-impacted fill materials during the site works, with provision of safe work procedures and control measures;
- Identify asbestos-containing materials (ACM) at the site;
- Undertake emergency response for incidents relating to asbestos during the earthworks;
- Satisfy the expected Development Consent requirements for the site; and

4. PREVIOUS INVESTIGATIONS

4.1 EDP, 2023 In-Situ Waste Classification

Details of the *Waste Classification of In-Situ Material, Central Barangaroo, Hickson Road, Millers Point NSW* report (EDP, 2023) is summarised in the RWP. With regards to asbestos, the field sieving assessment undertaken in accordance with NEPM on test pits TP01 – TP08 did not identify ACM fragments within any of the 10 L samples. Only asbestos in TP03_2.4 (2.4 m depth) was observed in the AF/FA soil analysis.

Amosite, chrysotile and crocidolite asbestos was detected in 30 of the 1,232 presence/absence (AS4964-2004) soil samples collected using the sonic drilling rig. A total of 56 soil samples detected asbestos either above or below the laboratory detection limit of 0.1 g/kg. The detection of asbestos in soil was unable to be correlated with fibre cement fragments observed in fill across the site. Identified asbestos was found at depths from 1.0 m (GD18_1.0) to 15.0 m (WV24_15.0)

Laboratory comments on the nature of asbestos detected in the soil samples generally reported asbestos in the form of fibre bundles, fibrous mass, fibre cement sheets and bituminous materials.

Seven presumed ACM fragments were observed during the borehole advancement and were submitted for analysis as per AS4964-2004. Chrysotile and crocidolite asbestos were identified in six of the seven ACM fragments analysed from within the fill.

4.2 EDP, 2024 In-Situ VENM Assessment

Details of the *VENM Classification of In-Situ Material, Central Barangaroo, Hickson Road, Millers Point NSW* report (EDP, 2024) is summarised in the RWP. With regard to ASS, EDP, 2024 cross references the investigated material and draws correlations back to the original imported VENM during the Block 4 and Block 5 remediation. As VENM by nature must be free of sulfidic ores, no further ASS assessment of the imported material was undertaken as part of EDP, 2024 investigations.

5. SITE INFORMATION

5.1 Site Identification

Table 2 summarises the details of the work area associated with the requirements of this AMP. The site location and EWDA-02 Area is also illustrated in **Appendix A.**

Table 1: Site Details

Site Identification	
Site Address:	Hickson Road Millers Point NSW
Legal Identification:	Lot 52 in DP 1213772
Local Government Area:	City of Sydney
Site Description:	The site is located in Central Barangaroo, which forms part of the wider Barangaroo Precinct comprising a total area of 22ha. It is located in the north-western edge of Sydney CBD and falls within City of Sydney Local Government Area (LGA). Barangaroo Precinct interfaces with Hickson Road in the east, the foreshore in the west, Walsh Bay to the north and Darling Harbour in the south. ▪ **Barangaroo South (approx. 7.5ha)** – Located at the southernmost end of Barangaroo Precinct. Progressively built over the last six years and includes mixed-use neighbourhood comprising commercial office buildings, mixed use buildings, shops, cafes, hotel and community uses. ▪ **Central Barangaroo (approx. 5.2ha and area subject of SSDA)** – Located between Barangaroo South and Barangaroo Reserve. Currently vacant and undergoing site preparation works to facilitate a mixed-use area with a focus on retail activation, residential and community uses. ▪ **Barangaroo Reserve (approve 6.1ha)** – Located in the northern end of the Precinct featuring Barangaroo Reserve. Featuring open space and lookout points to Sydney Harbour, Nawi Cove and Marrinawi Cove. Barangaroo Reserve features the Cutaway – a future arts and cultural entertainment space. The above results in a total area of 18.8ha. The residual 3.2ha is represented by the reshaping of the former industrial headland into Barangaroo Reserve and the creation of Nawi Cove as a substantial water body within the Barangaroo site, forming the original 22ha.
Site Area	5.2ha (approx.) of the 22ha Barangaroo Precinct
Current Zoning:	B4 Mixed Use and RE1 Public Recreation
Site Elevation:	Approximately 2 to 4 m Australian Height Datum (AHD)

5.2 Site Description and Surrounding Land Use

The area currently features a large concrete hardstand area/construction site that is occupied by temporary structures for site preparation works, machinery, materials and vehicle parking for site workers. Hoarding is currently erected around the Central Barangaroo site.

The site is also subject to current improvements such as remediation works, works to facilitate the Barangaroo Metro Station and a temporary road which runs off Hickson Road around the southern portion of the site. Tunnelling and excavation activities for the Barangaroo Metro Station have been completed.

5.3 Site History

Based on a review of the JBS RAP, the wider Barangaroo precinct was occupied by shipping and related merchants during the 1900s. Between 1840 and 1921, a gasworks operated by Australian Gas Light Company (AGL) was located within the southern end of site and extended east to what is currently Hickson Road. During this time, the original shoreline was altered to enable the construction of wharves which commenced from the mid-1920s. Over the past 20 years, the wider Barangaroo precinct was used primarily for stevedoring purposes until the majority of buildings were demolished and the land was prepared for redevelopment in the five years prior to the JBS RAP.

Priority was set to understand the conditions associated with the former gasworks area, referred to as the "Declaration Area" located within the southern end of the site. The gasworks were decommissioned between 1922 and 1925 and included the demolition of the surface of the gas holders, purifiers and other facilities and backfilling of holding tanks. No evidence was provided to suggest that operational gasworks waste or rubble generated during decommissioning were placed within the boundaries of the Barangaroo Central Site. Investigations within the Barangaroo Central site did not identify gasworks structures of waste materials.

Based on the timing of the gasworks decommissioning (between 1922 and 1925) and the commencement of site filling (between 1951 and 1972), JBS considered it highly unlikely that locally sourced gasworks waste or demolition material was used as fill during the reclamation works at Barangaroo Central.

6. TECHNICAL FRAMEWORK

The following legislation and Codes of Practice have been utilised (but not limited to) in preparation of this AMP:

- NSW *Work Health and Safety Act 2011*;
- NSW *Work Health and Safety Regulation 2017;*
- *Protection of the Environment Operations Act, 1997;*
- *Protection of the Environment Operations (Waste) Regulation 2014;*
- Code of Practice: *How to Manage and Control Asbestos in the Workplace 2019*;
- Code of Practice: *How to Safely Remove Asbestos 2019*;
- *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)];
- Australian Standard (AS) 4964-2004 *Method for the qualitative identification of asbestos in bulk samples* (AS4964-2004);
- *NSW EPA Waste Classification Guidelines: Part 1 – Classifying Waste 2014;*
- AS 2985-2009 Workplace atmospheres – *Method for sampling and gravimetric determination of respirable dust*;
- AS 3640-2009 Workplace atmospheres – *Method for sampling and gravimetric determination of inhalable dust*;
- AS 1319-1994 *Safety signs for the Occupational Environment*;
- AS/NZS 1716 2012 *Respiratory Protective Devices*; and
- AS/NZS 1715 2009 *Selection, use and maintenance of respiratory equipment.*

7. ASBESTOS CHARACTERISATION

EDP conducted a review of the data, photographs and field logging sheets around GD18_1.0 to determine if any characteristic differences between this location and other surrounding locations could explain the occurrence of asbestos at 1.0 m. Borehole data reviewed included GD03, GD17, GD19, GD34 and GD35, and the review could not conclude on distinguishing characteristics of GD18_1.0. Fill materials in shallower soils and are generally comprised an in-tact concrete blinding slab (surface), engineered fills, bitumen and aggregate, crushed concrete or sandstone. A summary of the borehole data review is included in **Appendix F** of this report.

Given the general material composition in soils shallower than 1.0 m, and that no other data from the boreholes or test pits (which involved NEPM %w/w sieving) presented evidence of asbestos contamination up to 1.0 mbgl, the asbestos at GD18_1.0 may be considered isolated to this location. With exception of the hardstand concrete slab which is ~0.3 m thick at GD18, all underlying soils at GD18 to the extent of the next clean sample (laterally) are considered asbestos impacted.

Across the site, there is some uncertainty around the nature of the fill materials at depths of approximately 1.0 m and deeper given the variability in the soil type, and other indication of contamination such as building and demolition wastes and hydrocarbon odours. Although not part of the basement excavation, asbestos was also identified in KS04_1.0 located immediately west with a similar soil profile. Other instances of asbestos are identified at 2.0 m and 3.0 m in soils with similar profiles to those at and immediately below 1.0 m. Based on this, soils across the site deeper than 1.0 mbgl are considered asbestos impacted with exception of former Block 4 and 5 remediation zones within the former ribbon wall as explained below and descripted in **Section 4.1**.

Soils to be excavated soils within the former remediation area (ribbon zone only) of Block 4 and Block 5 to the approximate surveyed depth of remediation are not considered asbestos impacted, on the provision that supervision by an environmental consultant will be undertaken where excavation within the ribbon zone is:

- within 2 m of the surveyed remediation depth; and

- within 3 m of the surveyed remediation boundary (ribbon wall).

As there may be some ambiguity of precise former ribbon wall location and exact depth of remediation (which was variable), supervision is required to minimise risks of inadvertently excavating original reclamation fill materials (deemed as asbestos contaminated) with the formerly imported VENM.

Based on the data and findings from EDP, 2023, the nature of asbestos contamination is considered to be non-friable.

8. ROLES AND RESPONSIBILITIES

Table 3 outlines the roles and responsibilities required as part of this AMP.

Table 3: Roles and Responsibilities

Role	Description of Responsibilities:
Asbestos Management Plan Controller (AMPC)	The AMPC is to be a representative of or nominated by Aqualand. Duties of the AMPC include: • Informing employees, contractors and subcontractors of the location of ACM at the site through the implementation of awareness training, as part of the induction process, etc.; • Providing or delegating supervision as required to ensure that the procedures documented in this AMP are implemented; • Ensuring asbestos related health and safety procedures, including permits to work are completed and safe work method statements (SWMS) are developed and updated on a regular basis; • Establishing a platform for consultation for all relevant site personnel to ensure responsibilities are understood and feedback can be provided; • Notifying workers or occupants of air monitoring results during asbestos remedial works; and • Ensure asbestos related records are maintained with this AMP. Documentation must be archived for an indefinite period and be accessible to any NSW Regulator if requested.
Person Conducting a Business or Undertaking (PCBU)	The PCBU is Aqualand organisation conducting business and undertaking works within Central Barangaroo. A general duty is imposed on any PCBU at a workplace to eliminate, as far as is reasonably practicable, a person's exposure to airborne asbestos, or if not reasonably practicable, to minimise so far as is reasonably practicable. A PCBU must ensure that the exposure standard for asbestos is not exceeded at the workplace. A PCBU has a responsibility in relation to asbestos to: • Provide and maintain, so far as practicable, safe and healthy work environments and practices generally, and have written policies on the control of asbestos; • Ensure, so far as is reasonably practicable, that all asbestos or ACM at the workplace is identified by a competent person; • Comply with legislative provisions; and • Liaise where appropriate on a continuous basis so that the existence and condition of asbestos in the working environment is known.

Role	Description of Responsibilities:
Principal Contractor	The Principal Contractor is to be appointed by Aqualand Projects Pty Ltd. Without negating the PCBU duties, the Principal Contractor assumes management or control of the site for the duration of the project. The Principal Contractor must: • Ensure, so far as is reasonably practicable, that all asbestos or ACM at the workplace is identified by a competent person; • Arrange for sampling, analysis and verification; • Engage a Class-A and Class-B licensed asbestos removal contractor (LARC),dependant on type of material being removed, for asbestos remedial works; • Engage suitably qualified and experienced hygienists to conduct asbestos hygiene services including air monitoring and clearances (as required); • Provide adequate instruction and training for employees and supervision of health and safety measures; • Consult with employees, their representatives and organisations and the NSW Regulator on the control of exposure to airborne asbestos; • Anticipate the need for the control of asbestos risks to be initiated in any particular case; • Provide appropriate protective clothing and equipment, hygiene procedures and personal decontamination facilities; • Prepare, complete, and submit documents for obtaining necessary approvals; and • Ensure a copy of the AMP is made readily accessible for all relevant personnel.
Principal Contractor Hygienist	The Principal Contractor Hygienist will be engaged by Aqualand and will be required to undertake a number of high level hygienist tasks on behalf of Aqualand, including: • Development, review and update of this AMP; • Providing advice on all matters related to occupational hygiene across all work packages and delivery stages; • Liaising directly with Aqualand, but also a number of stakeholders (for example, Project Management team, Sub-Contractor Hygienist, Site Safety Committee, INSW, SafeWork NSW); • Review and provide feedback on health and hygiene matters proposed by the Sub-Contractor Hygienist; and • Undertake regular due diligence reviews to ensure that the works are being undertaken in accordance with the relevant plans, procedures and legislation.
Sub-Contractor Hygienist	Each sub-contractor undertaking works at the site will be required to supply their own Sub-Contractor Hygienist. The Sub-Contractor Hygienist will be responsible for: • Undertaking air monitoring during excavation works; • Providing on-site visual inspection, identification of asbestos impacted material and validation sampling of non-asbestos impacted materials; and • Supervising works to ensure compliance with this AMP and NSW regulatory requirements for asbestos management and disposal.
All Hygienists	Hygienists referred to in this AMP should hold an asbestos assessor's licence to provide asbestos hygiene services for the works, including air monitoring clearance inspections. Additionally, all hygienists must be suitably qualified and experienced Competent Person with knowledge and experience in conducting asbestos in soil risk assessments, including sampling and validation.

Role	Description of Responsibilities:
Licensed Asbestos Removal Contractors	The licensed asbestos removal contractor (LARC) will be engaged to conduct asbestos remedial works (as required). The LARC must perform all works in accordance with licensing requirements and standard industry practice for asbestos removal. The LARC must: • Hold either a Class A (friable) or Class B (non-friable) Asbestos Removal Licence (as required). • Develop a SWMS for the removal work. • Develop an Asbestos Removal Control Plan (ARCP). • Submit an Asbestos Permit to Work Permit (APW) issued and approved by the AMPC. • Submit a 5-day asbestos removal notification to Safe Work NSW prior to remediation works. • Ensure all workers have been inducted into the site. • Ensure the appropriate licences and training/competencies of the workers undertaking the removal works are up to date. • Ensure asbestos work area is established. • Set up decontamination area. • Decontaminate machinery and equipment as required.
Sub-contractors	Aqualand will engage other sub-contractors during the works, including (but not limited to) plant and machinery operators and waste haulage contractors. These contractors must ensure their responsibilities are met in accordance with this AMP, including: • Completion of induction and training requirements in accordance with this AMP, including asbestos awareness training program for those entering the asbestos work area. • Working under supervision of LARC (as required). • Ensuring plant and machinery entering asbestos work areas have cabins with closed loop air conditioning system fitted with HEPA filter. • Ensuring minimum asbestos PPE is available and worn when entering and exiting asbestos work area.
Employers	Employers have a responsibility, in relation to asbestos for: • Ensure staff have attended an asbestos awareness training program. • Consulting on health and safety matters generally and on measures that may need to be taken on asbestos in occupied areas, on machinery and equipment. • Keeping themselves informed of advice given by competent persons in relation to inspections and meeting health and safety commitments. • Co-operating on any reasonable request for the variation to work hours and hours of work. • Advising members of their obligations and responsibilities under occupational health legislation.
Workers	Any person entering or conducting work at the site, including workers involved in off-site processes such at transportation, haulage and materials delivery have a responsibility in relation to asbestos that includes: • Taking reasonable care for his or her own health and safety. • Taking reasonable care that his or her acts or omissions do not adversely affect the health and safety of other persons. • Complying with instructions given for their own safety and health and that of others generally. • Complying with all work procedures and instructions related to asbestos. • Co-operating with supervisors and managers in their fulfilment of legislative obligations. • Reporting immediately to their supervisor any perceived safety or health risk. • Wearing and maintain in good order all protective clothing and apparatus provided by the manager or supervisor for personal protection and maintain same in good order. • Ensuring all equipment is in good working order.

Role	Description of Responsibilities:
Visitors	Visitors have a responsibility in relation to asbestos that includes: • Entering the site under the permission and escort of the Principal Contractor and PCBU. • Taking reasonable care for his or her own health and safety. • Taking reasonable care that his or her acts or omissions do not adversely affect the health and safety of other persons. • Complying with instructions given for their own safety and health and that of others generally; • Complying with all work procedures and instructions related to asbestos. • Co-operating with site staff in their fulfilment of legislative obligations. • Complying, so far as the person is reasonably able, with any reasonable instruction that is given by the person conducting the business or undertaking to allow the person conducting the business or undertaking to comply with all legislative requirements and this AMP. • Reporting immediately (as applicable) to Aqualand, any perceived safety or health risk.
SafeWork NSW / Regulator	NSW Work Health and Safety Regulator. Focuses on harm prevention and improving the safety culture in NSW workplaces. They provide the following: • Offers advice on improving work health and safety. • Provide licenses and registrations for potentially dangerous work. • Investigate workplace incidents. • Enforce WHS laws in NSW.

9. INDUCTIONS, TRAINING & HEALTH MONITORING

All workers who may impact on potential asbestos in soil while working at the site should be made aware of the presence of asbestos through inductions to this AMP, toolbox talks and awareness training package.

9.1 Toolbox Talks

While conducting any works at the site with the potential for soil disturbance, all relevant site personnel should undertake a toolbox talk session to ensure that employees and contractors are adequately trained to recognise environmental and work, health and safety issues on a regular basis. The toolbox talk should incorporate details and instructions on how to manage asbestos-impacted soils that may be encountered whilst undertaking works at the site, in accordance with this AMP.

9.2 Inductions

The AMPC will provide (or delegate) an induction into this AMP for new employees and contractors whose involvement has the potential for asbestos to be encountered at the site. As part of the induction, the AMPC (or delegate) must examine the works to be performed, determine whether the works will impact on asbestos-impacted soils and advise what can and cannot be done. The induction should include information such as (but not limited to):

- The known asbestos-impacted areas;
- Type of asbestos that may be/have been encountered within the soil;
- The necessary permits to be completed (i.e. permit to work/SWMS), with the control measures to be adopted and appropriate personal/respiratory protective equipment (PPE/RPE) and decontamination procedures to be conducted; and
- Unexpected finds and expected finds protocol, including reporting ACM finds to the AMPC (or delegate) as soon as possible so that the appropriate corrective action can be initiated.

This AMP must be made available onsite to all contractors for reference, particularly for the direction on how to manage asbestos-impacted soils during earthworks or if encountered at the site, refer to **Section 12**.

Record of contractors or other personnel who have attended the induction must be maintained in **Appendix B** of this AMP.

9.3 Asbestos Awareness Training

As per the Code of Practice: *How to Manage and Control Asbestos in the Workplace 2019,* the training program should include the following topics:

- Health risks of asbestos;
- Types, uses and likely presence of asbestos at the site;
- Roles and responsibilities of the AMPC and workers under the AMP;
- Where to find the AMP and how to understand the information contained;
- Safe work procedures to be followed with examples to prevent exposure;
- The correct use of PPE/RPE;
- How to implement of control measures and safe work procedures;
- When a Class-A or Class-B LARC are required for asbestos remedial works; and
- Air monitoring requirements and exposure standard for airborne asbestos.

The objective of the training is to create changes in behaviour and asbestos management through improved awareness of workers at the site. The purpose of the training is also to provide understanding to workers of the health implications with of exposure to asbestos, the appropriate control measures and their responsibilities legislative obligations.

It should be considered that all workers at the site undergo an asbestos awareness training session to advise of the presence of potential asbestos in soil whilst conducting works associated with the site.

9.4 Health Monitoring

As per Clause 435 of the *WHS Regulation 2017*, the PCBU has a duty to provide health monitoring to a worker carrying out ongoing asbestos-related work and is at risk of exposure to asbestos when carrying out the work.

Based on the available information relating to asbestos contamination reported within the other stages of the project, the risk of exposure to asbestos during the earthworks is considered to be low based on the asbestos contamination considered to be non-friable in nature with limited ability to become airborne.

It is understood that the results of the air monitoring conducted during the previous stages of the project were all less than the reporting limit of <0.01 fibres/ml, indicating a low risk of exposure during soil disturbance. As such, health monitoring is not deemed to be a mandatory requirement for workers conducting general earthworks at the site. Confirmation of potential asbestos exposure levels will be monitored throughout the works with background and exposure asbestos-fibre air monitoring conducted for the duration of the works. Airborne asbestos-fibre concentrations must be maintained less than 0.01 fibres/ml, otherwise health monitoring requirements will be triggered.

As per legislative requirements, health monitoring is still required for personnel routinely engaged in asbestos removal and asbestos associated works outside this particular project. This is expected to include the asbestos supervisor and hygienists as a minimum.

9.5 Respirator Fit Testing

Any respirators used during works undertaken at the site must be face fitted to the individual with evidence of the quantitative face fit provided with the contractor's safety documentation. All operatives required to wear respirators must be cleanly shaven to ensure a suitable seal.

9.6 Permit to Work

For any asbestos remedial work, an asbestos permit to work (APW) will need to be issued to, and signed by, the LARC. The APW may only be issued by the AMPC. Before being issued with an APW, the LARC are required to read and understand the AMP.

The APW should detail the nature of the work to be performed and document the removalist/contractor agreement to:

- Abide with the requirements for working with ACM as detailed in the NSW Codes of Practice;
- Isolate/restrict access to the work area;
- Provide and erect appropriate warning signs;
- The use of safe work procedures;
- Appropriate use of PPE/RPE;
- Appropriate decontamination and clearance inspections of the work area; and
- Remove and dispose of any ACM (including PPE/RPE) in accordance with WHS legislation.

The APW formally transfers the responsibility for compliance with this AMP and the NSW *Work Health and Safety Regulation 2017* to the signatories.

An example APW is provided in **Appendix C.**

10. COMMUNICATION AND CONSULTATION

Consultation through an agreed and documented mechanism where workers consult on a regular basis to express their views on health and safety matters at the site should be established.

The procedure should provide a framework for:

- Workers to communicate health and safety matters associated with asbestos at the site;
- Resolving workplace health and safety risks;
- Ensuring management personnel are aware of hazards and health and safety issues experienced by employees, contractors and visitors to site;
- Decision-making about health and safety by gathering a wider source of health and safety ideas and knowledge;
- Supporting commitment to health and safety;
- Reducing the number and severity of health and safety risks and hazards; and
- Strengthening the health and safety culture at the site.

11. RECORD KEEPING

The AMP is to be a dynamic document that is revised where necessary to reflect any changes to the site that may result in a change to asbestos exposure risk factors and associated asbestos controls. As soon as reasonably practicable, after such a change is identified, the AMP shall be revised by the Principal Contractor's Hygienist. Whenever the AMP is amended, all site personnel including sub-contractors shall be inducted to the revisions of the AMP and any associated revisions relating to their responsibilities. Documentation of the changes / updates to the AMP and communication of the changes must be recorded within this AMP.

The AMP shall be maintained by the AMPC and PCBU with input from other stakeholders.

Relevant documentation regarding the implementation of this AMP should be maintained by the AMPC and PCBU. The documentation may include (but not be limited to):

- Site plans, identifying the location of asbestos-impacted soil at the site;
- Revisions of the AMP for the site;
- Asbestos related incident reports;
- Employee and contractor inductions and training records;
- Health monitoring records or statement of subcontractors regarding compliance with health monitoring requirements; and
- Relevant environmental reports.

It will be the responsibility of AMPC and PCBU to review and update the records as required and to implement corrective actions where necessary.

Relevant records should be maintained with this AMP. And example of an AMP review and change register is included in **Appendix E**.

12. ASBESTOS REMEDIATION SPECIFICATION

Remedial works procedures and sequencing which this AMP relates are described in the RWP. Details of the specific controls and mitigations to manage asbestos are detailed in the following sections.

12.1 General Requirements

Any works proposed to disturb the soils at the site will require management in accordance with this AMP. If earthworks are to be completed in an area of confirmed asbestos contamination the works must be supervised by a contactor holding a Class A (friable) or Class B (non-friable) asbestos removal licence issued by SafeWork NSW under all applicable controls and procedures in accordance with this AMP. In addition, air monitoring and clearance inspections are required for all earthworks by a nominated hygienist/LAA, independent from the LARC.

12.2 Safe Work Method Statement

Responsible Party: Aqualand, Licensed Asbestos Removal Contractor, Hygienist and Sub-Contractors

Prior to the commencement of earthworks at the site, all employees or nominated sub-contractors are required to have completed a detailed SWMS for the works. The SWMS should include task-specific health and safety protocols for the works, including the management of asbestos contamination.

12.3 Regulator Notification

Responsible Party: Licensed Asbestos Removal Contractor

The appointed LARC must submit a five-day notification and Asbestos Removal Control Plan prior to the commencement of asbestos in soil removal works to SafeWork NSW.

12.4 Neighbour Notification

Responsible Party: Aqualand and Licensed Asbestos Removal Contractor

The LARC will draft the required notification for adjacent properties and will submit this to PCBU for review and approval. The LARC is to notify neighbouring properties of the removal of asbestos. This will be undertaken at least two weeks in advance of the works to ensure adjacent properties are aware of the upcoming works.

12.5 Control Measures for Asbestos Remedial Works

Responsible Party: Aqualand, Licensed Asbestos Removal Contractor, Hygienists and Sub-Contractors

The following procedure must be followed during the asbestos remedial works, which are deemed to include the excavation, stockpiling, transport and disposal of confirmed asbestos-impacted soil at the site.

- Prior to the commencement of the works, all relevant site personnel must be appropriately trained and inducted into the requirements of this AMP and undertake a toolbox talk as detailed in **Section 9.1** to ensure that workers are adequately trained to recognise environmental and health-related issues associated with potential asbestos in soil contamination at the site.
- LARC to delineate the asbestos work area(s). The asbestos work area(s) is where the asbestos-impacted soils will be excavated and stockpiled and will also include vehicle transit routes and decontamination area(s).
- The asbestos work area must be established by the LARC with suitable exclusion zones with signs and barricades to clearly delineate and isolate the area. Signs must be placed in positions that clearly indicate the location of

the asbestos work area(s). The work area(s) must remain in place until the works are completed within an area, with all air monitoring results satisfactory and clearance certificate issued by hygienist.

- LARC must set-up dry decontamination area at the entrance/exit to the asbestos work area(s), as detailed in **Section 12.8.1.**
- LARC to establish a suitable stockpiling area within the asbestos work area. The stockpile footprint is to be lined with high-density polyethylene (HDPE) sheeting and should be located away from drainage lines and waterways.
- The hygienist shall undertake control asbestos fibre air monitoring for the duration of the earthworks in accordance with the NOHSC *Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition 2005* [NOHSC:3003(2005)]. Monitoring must be NATA accredited, including sampling and analytical methods, as detailed in **Section 12.10.2.**
- Minimum PPE must be worn at all times by workers within the asbestos work area including P2 half face respirator, Type 5/6 coveralls, disposable booties and gloves. Further details on PPE requirements are provided in **Section 12.7.**
- Truck drivers and plant/machinery operators will operate and be supervised in the asbestos work area by the LARC. Operators may be exempt from some asbestos PPE requirements if it can be shown that their cab can be sealed during works and closed loop air conditioning can be engaged with HEPA filter attached. As a minimum a P2 half face respirator must be worn when entering the asbestos work area and traveling to and from the excavator cab.
- Transport routes must be planned prior to commencing transport across the site to minimise driving over fill materials with minimal obstacles.
- All drains that may be affected by the asbestos remedial works (including contaminated water from decontamination area(s) should be capable of capturing particles down to 5µm to prevent asbestos residue entering the drainage system. Filter material shall be inspected and replaced regularly. Soiled filter media is to be disposed offsite as Special Waste (asbestos waste).
- Care should be taken to ensure dust generation is kept to a minimum, with dust suppression techniques to be employed throughout each stage of works. Dust suppression should be in the form of a fine mist water spray. This can be achieved with a mains-supplied hose fitted with a pistol grip or water cart. Excessive use of water causing pooling and run-off should be avoided, further dust suppression techniques are provided in **Section 12.6.3**.
- During the excavation process, all earthworks must be undertaken systematically with observations of all soil being extracted, stored, moved, and disposed offsite recorded.
- Surface concrete should be carefully separated from soil and visually inspected and cleared by hygienist prior to offsite disposal.
- Stockpiles generated during the works must be carefully placed within the stockpiling area and covered and secured with weighted HDPE sheeting or geofabric as detailed in **Section 12.6.4.**
- Hygienist must conduct soil sampling of stockpiles for waste classification purposes to facilitate offsite disposal of the material to a licensed landfill facility in accordance with *the NSW EPA Waste Classification Guidelines: Part 1 – Classifying Waste, 2014.*
- All plant and machinery must be decontaminated and visually cleared by hygienist prior to leaving the site, as per **Section 12.8.3.**
- Decontamination of all workers, PPE and tools used during the asbestos earthworks is required when exiting the asbestos work area. All waste generated during the works must be disposed offsite as Special Waste (asbestos). Further details of decontamination and waste procedures in outlined in **Section 12.8.**
- The hygienist must provide clearance inspections at various stages of the earthworks as detailed in **Section 12.10.3.**

12.6 Site Set-Up

12.6.1 Fencing and Signage

Responsible Party: Principal Contractor and Licensed Asbestos Removal Contractor

The asbestos work area shall be established for the duration of the earthworks and must be made secure and signed appropriately (e.g. 'Authorised Persons Only' or 'Specialised Work Zone'). The asbestos work area shall include the establishment of a physical barrier and an exclusion zone surrounding the site.

For the purposes of this AMP the asbestos work area should be designated as the zone where soil disturbance is being undertaken, including the decontamination area. The asbestos work area should be established prior to earthworks commencing. This boundary shall be maintained throughout the duration of the works.

12.6.2 Erosion and Sediment Control

Responsible Party: Principal Contractor and Licensed Asbestos Removal Contractor

Erosion and sediment controls must be in place prior to commencement of work, especially in areas of highly erodible soil. Suitable containment and (where applicable) filtration is to be used at the asbestos work area boundaries to prevent run-off to adjoining property or to the adjacent water body particularly at vehicle wash points.

12.6.3 Dust Suppression

Responsible Party: Principal Contractor and Licensed Asbestos Removal Contractor

Dust suppression techniques must be adopted to minimise the generation and dispersal of dusts during excavation works. Note that care must be taken to prevent and control water run-off.

These techniques may include:

- Fine water spraying;
- Use of gravel or fabric barriers to the surface of trafficked areas;
- Minimising the degree of traffic;
- Covering stockpiles with HDPE sheeting or geofabric at the conclusion of each shift; and
- Ceasing works if environmental conditions result in visible dust being generated from the site.

12.6.4 Stockpile Management

Responsible Party: Licensed Asbestos Removal Contractor

The following is required for stockpiles generated during the works:

- Stockpiles shall be established on HDPE sheeting or geofabric on the ground surface;
- Dust suppression shall be in place as discussed above;
- Stockpiles shall not exceed 2 m in height and shall be of the lowest height practicable;
- Stockpiles shall have asbestos signage displayed where present;
- Stockpiles are to be wetted down with water;
- Stockpiles to be stored for more than one day, or where adverse weather conditions are expected (e.g. high winds) shall be covered with weighted HDPE or geofabric; and
- Stockpiles shall be suitably barricaded or otherwise fenced off to prevent access.

12.7 Personal and Respiratory Protective Equipment

Responsible Party: All Workers Entering and Exiting the Asbestos Work Area

All contractors undertaking asbestos remedial work at the site shall be responsible for providing their workers with appropriate PPE/RPE to minimise the risk of exposure to asbestos. The level of PPE/RPE required for asbestos

remedial work detailed in this AMP has been based on the asbestos contamination previously identified within Stage 1A (non-friable ACM). Minimum asbestos PPE should include the following:

- Half face respirator with P2 particulate filter;
- Disposable nitrile or latex gloves;
- Type 5/6 disposable coveralls; and
- Disposable boot covers or footwear that can be easily decontaminated (i.e. gumboots).

Plant and machinery operators may be exempt from asbestos PPE requirements if it can be shown that the cab can be sealed during works and closed loop air conditioning can be engaged with HEPA filter attached. As a minimum a half face respirator with P2 particulate filter must be worn when entering the asbestos work area and traveling to and from the excavator cab.

See the below sections and **Appendix D** for further information/specifications on asbestos PPE.

12.7.1 Respirators

The selection of suitable RPE depends on the nature of the asbestos work, the probable maximum concentrations of asbestos fibres encountered and any personal characteristics of the wearer that may affect the facial fit of the respirator (facial hair and glasses etc.). Workers must be clean shaven to maintain a sufficient seal and respirators must be fit-tested for the individual on annual basis. If the wearer cannot be clean shaven, a powered air purifying respirator (PAPR) with hood may be worn.

Based on the non-friable asbestos contamination previously identified at the site a half face P2 respirator is deemed to provide suitable protection for the asbestos remedial works. If friable ACM is uncovered during the works, a risk assessment must be conducted by the hygienist to determine the most appropriate form of RPE to be worn, alternatively a P3 full face respirator must be worn.

12.7.2 Coveralls and Boot Covers

Disposable coveralls should be utilised to minimise the risk of asbestos fibres contaminating clothing or under garments during asbestos remedial works. Coveralls rated Type 5/6 or Category 3 (EN ISO 13982–1) are of a suitable standard and should be fitted with elastic hoods, cuffs and anklets to reduce the risk of penetration of asbestos fibres.

If laced boots with eyelets are worn by workers, it is advisable that protective boot covers are worn in tandem with coveralls. Boot covers help ensure asbestos fibres do not contaminate footwear which cannot be easily decontaminated.

Coveralls and boot covers should be used for single use only. Once coveralls and boot covers have been used, they should be treated as asbestos contaminated waste.

12.7.3 Gloves

Disposable latex or nitrile gloves should be worn when handling asbestos or working around asbestos. Gloves should be single use only and disposed of as asbestos waste one used.

12.8 Decontamination

Decontamination of the work area, workers, PPE/RPE and tools used in asbestos remedial work is an important requirement in the process of minimising exposure to airborne asbestos fibres. Decontamination not only reduces the exposure risk to workers exiting an asbestos work area but also to persons outside the asbestos removal work area.

To determine the appropriate decontamination procedure, the risks of the remedial works should be assessed. Either wet decontamination, dry decontamination methods (or a combination of both) should be utilised each time persons or equipment enter/exit an asbestos work area and at the completion of the asbestos work.

The selection of decontamination methods and procedures including how to set up an effective decontamination area/s is outlined in the *Code of Practice: How to Safely Remove Asbestos 2019*. The following decontamination procedure has been developed as part of this AMP which is based on the nature of potential asbestos contamination at the site (non-friable ACM).

12.8.1 Decontamination Area Set-Up

Responsible Party: Licensed Asbestos Removal Contractor

The LARC must provide a dry decontamination area(s) set up at the entrance/exit to the asbestos work area for site workers to personally decontaminate when entering and exiting the asbestos work area.

This decontamination area shall include:

- A dirty decontamination area that includes:
  - Equipment for hosing down (by use of a fine mist) contaminated clothing and footwear;
  - Storage for contaminated clothing and footwear;
  - Asbestos waste bags and duct tape; and
  - Geofabric lining to capture water.
- A clean decontamination area that includes:
  - Storage for individual RPE in containers.
  - Spray bottle of water or wet wipes; and
  - Asbestos waste bags and duct tape.
- A clean change area that includes:
  - Storage for clean clothing and PPE.

12.8.2 Decontamination of Personnel and Hand Tools

Responsible Party: All Workers Entering and Exiting the Asbestos Work Area

The procedure for entry to the asbestos work area for all workers is to be as follows:

- Enter via the clean changing area, where personnel will change into the required PPE. Any clothes removed here shall be stored.
- Move to the clean decontamination area and put on respirators. Check for good fit and seal before progressing.
- Proceed to asbestos work area.

The procedure for leaving the asbestos work area for all workers is to be as follows:

- Proceed into the dirty decontamination area. Decontaminate all tools and equipment used during the works using wet wipes and/or fresh water before they are removed from the asbestos work area.
- Spray down PPE and RPE using fine mist water spray. Do not remove respirators at this stage. Booties, coveralls and gloves can be removed and placed in labelled asbestos waste bags.
- Proceed to clean decontamination area: Wash hands, fingernails, face, head and respirator using wet wipes or spray bottle of water. Respirator can be removed at this point. Store respirator in a suitable container within the clean decontamination area.
- Move to the clean change area and change into clean clothing.

Disposable PPE and all waste generated during decontamination procedure must be placed in double asbestos waste bags, tied in a goose-neck position with duct tape and disposed offsite as Special Waste (asbestos). Note that asbestos waste bags must be filled to 50% capacity only.

12.8.3 Decontamination of Plant and Equipment

Responsible Party: Licensed Asbestos Removal Contractor

A plant decontamination area must be designated and maintained at the site during asbestos remedial works which is to remain until completion of the works. Additional decontamination procedures include:

- Placing geofabric on the surface of the designated plant and equipment wash bay prior to commencing decontamination.
- Installing silt fencing or bunding if necessary, to prevent water and/or contaminated soil from leaving the site.
- Using a water truck or hose pipe, and hand tools for the purpose of decontaminating plant such as excavators, paying particular attention to the excavator track and bucket.
- Installing wheel wash bay at the exit of the asbestos work area for all plant and machinery to exit through.

12.9 Exempt Tools and Equipment

Tools and equipment that generate dust must not be used on asbestos impacted soils during the project. These include:

- High-speed abrasive power and pneumatic tools, for example angle grinders, sanders, saws and highspeed drills.
- Brooms and brushes.
- High-pressure water spray, jets, power or similar tools and instruments.
- Compressed air.

12.10 Asbestos Hygiene

12.10.1 Visual Inspection of Site-Set-Up

Responsible Party: Hygienist

A visual inspection will be undertaken by the hygienist / LAA to assess the completion of the establishment of the asbestos work area and decontamination facilities prior to commencement of the asbestos remedial works. Access to the asbestos work area will only be permitted following satisfactory completion of the visual inspection.

12.10.2 Asbestos-Fibre Air Monitoring

Responsible Party: Hygienist

NATA accredited asbestos fibre air monitoring must be undertaken during the asbestos removal works by a the hygienist / LAA. Air monitoring must be undertaken in accordance with NOHSC: 3003(2005) and ISO/IEC 17025 *General requirements for the competence of testing and calibration laboratories 2017*.

Air monitoring results must be daily. Works shall cease if the air monitoring results are found to be above the reporting limit of 0.01 fibres per millilitre of air (f/ml). Emergency procedures shall be followed when air monitoring control levels are exceeded as outlined in **Section 15.2.**

12.10.3 Visual Clearances Inspections and Certificates

Responsible Party: Hygienist

Following the completion of daily works, a site walkover must be undertaken by the nominated hygienist to confirm that no visible asbestos materials are present outside the asbestos work area(s). Clearance certificates should be provided and issued for the site following clearance inspections and at appropriate milestones throughout the removal works, including:

- Following concrete removal to facilitate offsite disposal as construction and demolition waste. This is also a hold point to verify exposed soils (except around GH18) are clear of asbestos.
- Once excavation has occurred to the required design depths and new concrete has been satisfactorily installed.
- Dismantling of stockpile staging areas or stockpile bays.
- Plant and machinery prior to exiting the asbestos work area.

Any stockpiles generated during excavation works shall be wetted down and covered with weighted HDPE sheeting or geofabric as detailed above.

At the conclusion of works in a specific area, the hygienist must also undertake a walkover of the area to confirm that visible asbestos materials in the area have been sufficiently removed and the area has been sufficiently stabilised.

As air monitoring certificates are issued for the site, an accompanying daily update summarising the asbestos-related activities undertaken at the site should be provided to Aqualand.

12.11 Transport and Waste Disposal

Responsible Party: Licensed Asbestos Removal Contractor and Waste Haulage Contractors

For the offsite disposal of asbestos-impacts soils generated at the site, the material will be pre-classified as Special Waste (asbestos waste) with soil chemical characterisation required in accordance with the *NSW EPA Waste Classification Guidelines: Part 1 – Classifying Waste 2014* prior to disposal offsite to an appropriately licensed landfill facility. Hygienists or environmental consultants must conduct soil chemical characterisation for waste classification to facilitate appropriate offsite disposal to a NSW landfill facility.

Asbestos materials need to be double bagged in asbestos waste bags and tied in a goose-neck position prior to disposal. Soils should be directly placed into awaiting trucks lined and covered with tarpaulin. Asbestos waste must be tracked for quantities greater than 10 m^2 or volumes greater than 100 kg using NSW EPA's Waste Locate https://wastelocate.epa.nsw.gov.au/.

13. SAMPLE COLLECTION OF SUSPECTED ASBESTOS

If suspected ACM requires identification during the works, the nominated hygienist shall sample the suspected material in accordance with AS4964-2004.

Sample/s collected must be delivered to and analysed by a NATA accredited laboratory for the presence of asbestos using polarised light microscopy and dispersion staining techniques. Once the NATA accredited laboratory report has been received, Aqualand is to engage the Principal Contractor Hygienist to conduct a risk assessment of the material if found to contain asbestos and determine whether the existing control measures are adequate or whether additional control measures need to be adopted.

If ACM is identified, details should be recorded and actioned within the ACM Find Checklist provided in **Appendix E.**

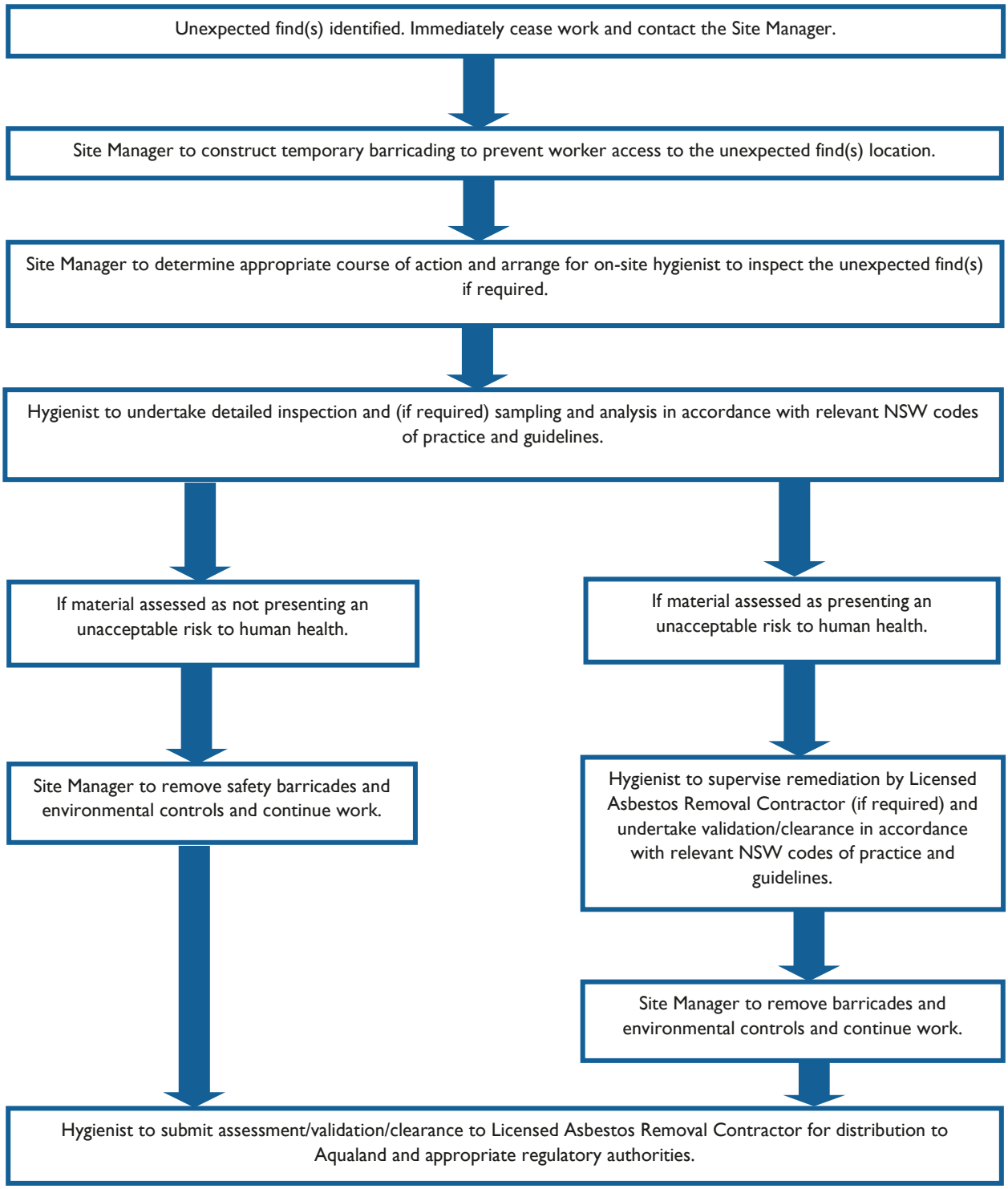
14. UNEXPECTED FINDS PROTOCOL

If one or more of the following situations is identified, the AMPC and PCBU must be notified, works shall cease within the area, the excavation covered with soil and the area made secure until such time as an assessment of the area can be undertaken by the hygienist and an appropriate course of action determined:

- Friable ACM is uncovered;
- Any form of asbestos within areas not considered to be asbestos contaminated per **Section 7**; and/or
- Other potential contaminants are identified including stained or malodourous soil in some instances. Refer to the Remedial Works Plan for the site for a greater detail on unexpected finds.

The flow-chart overleaf details the unexpected finds protocol to be adopted.

FLOW CHART – UNEXPECTED FINDS PROTOCOL



15. INCIDENTS AND EMERGENCY PROCEDURES

The following sections outline the emergency procedures to follow should there be an uncontrolled release of asbestos fibres at the site, or if air monitoring detects an exceedance of respirable airborne fibres above the action levels.

15.1 Asbestos Disturbance

In the event that an activity causes the accidental disturbance of ACM resulting in the potential uncontrolled release of airborne fibres, the following outlines the steps which should be followed.

Table 4: Emergency Response Procedure

Step:	Responsible Person:	Action:
1	Occupant / Worker / Contractor	• Stop work and immediately notify the AMPC.
2	AMPC	• Remove personnel from the area who are potentially at risk of exposure.
3	AMPC	• Restrict access to the area, dampen and contain. • Erect signage and barricades to restrict access to the area.
4	AMPC / Hygienist	• Contact hygienist to provide advice on additional controls.
5	AMPC	• If asbestos confirmed, hygienist to conduct air monitoring within the area. • All air monitoring results must be below the lowest reporting limit for the method of <0.01 fibres/ml. • Engage LARC (as required) to undertake asbestos remedial work.
6	LARC / Hygienist	• LARC (as required) to perform asbestos remedial works. • Hygienist to perform control asbestos air monitoring during removal works
7	Hygienist	• Hygienist to perform clearance asbestos air monitoring within removal works area (if required), to ensure the area is suitable for reoccupation. • Provide clearance certificate based on successful clearance inspection and/or clearance air monitoring. All air monitoring results must be below the lowest detectable limit for the method of <0.01 fibres/ml.

15.2 Elevated Asbestos Fibre Air Monitoring Results

If during asbestos remedial work, air monitoring results exceed the method reporting limit of 0.01 fibres/ml of air, the existing controls will need to be reviewed and improved before works may continue.

The following table provides the procedure to be followed depending on the air monitoring result.

Table 5: Emergency Response Procedure

Action Level	Responsible Person:	Control / Action:
>0.02 fibres/mL	Hygienist	• Notify LARC and AMPC of results as soon as practicable.
	LARC	• Stop work immediately. • Notify the regulator by phone or in writing with air monitoring result and that removal works have ceased.
	AMPC / LARC	• Erect signage and barricades around asbestos work area to restrict access.
	AMPC / Hygienist / LARC	• Conduct an investigation into the cause for the exceedance. This is to be performed by thorough visual inspection of the work area and equipment in consultation with workers. • Once suspected cause is identified existing controls to be reviewed and new and/or improved controls to be implemented.
	Occupational Hygienist	• Conduct additional air monitoring around the asbestos work area once new controls have been implemented. • Works must not recommence until air monitoring results are <0.01 fibres/ml.
≥0.01 fibres/mL BUT ≤0.02 fibres/mL	Hygienist	• Notify LARC and AMPC of results as soon as practicable.
	AMPC / Hygienist / LARC	• Investigate potential cause for the exceedance. • Existing controls to be reviewed and new and/or improved controls to be implemented where applicable.
<0.01 fibres/mL	LARC	• Continue with existing control measures.

16. PROJECT LIMITATIONS

This Asbestos Management Plan (AMP) has been prepared by EDP Consultants Pty Ltd (EDP) solely for the client listed in **Section 1 (Client)**. This report may only be used and relied upon by the Client and must not be copied to, used by, or relied upon by any person other than the Client or altered, amended or abbreviated, issued in part or issued incomplete without the prior written consent of EDP. This report relates only to the site as detailed within **Section 3** and as described in this report and must not be used in relation to any other work area or site.

EDP, its employees, agents and contractors expressly disclaim responsibility to any person other than the Client arising from or in connection with the report. Other than as stated in this report, to the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by EDP and the report are excluded.

The services undertaken by EDP in connection with preparing the report were limited to those expressly detailed in **Section 2**. The opinions, conclusions and any recommendations in the report are based on the conditions encountered, inspection findings and reviewed information and documentation only.

Please note that subsequent to the date of this report, works or site conditions may have resulted in changes to the status of any identified materials. All changes should be documented and provided to EDP as a supplement to this report.

The data and advice provided herein relate only to the project and structures described in the report. EDP accepts no responsibility for any other use of the data or advice.

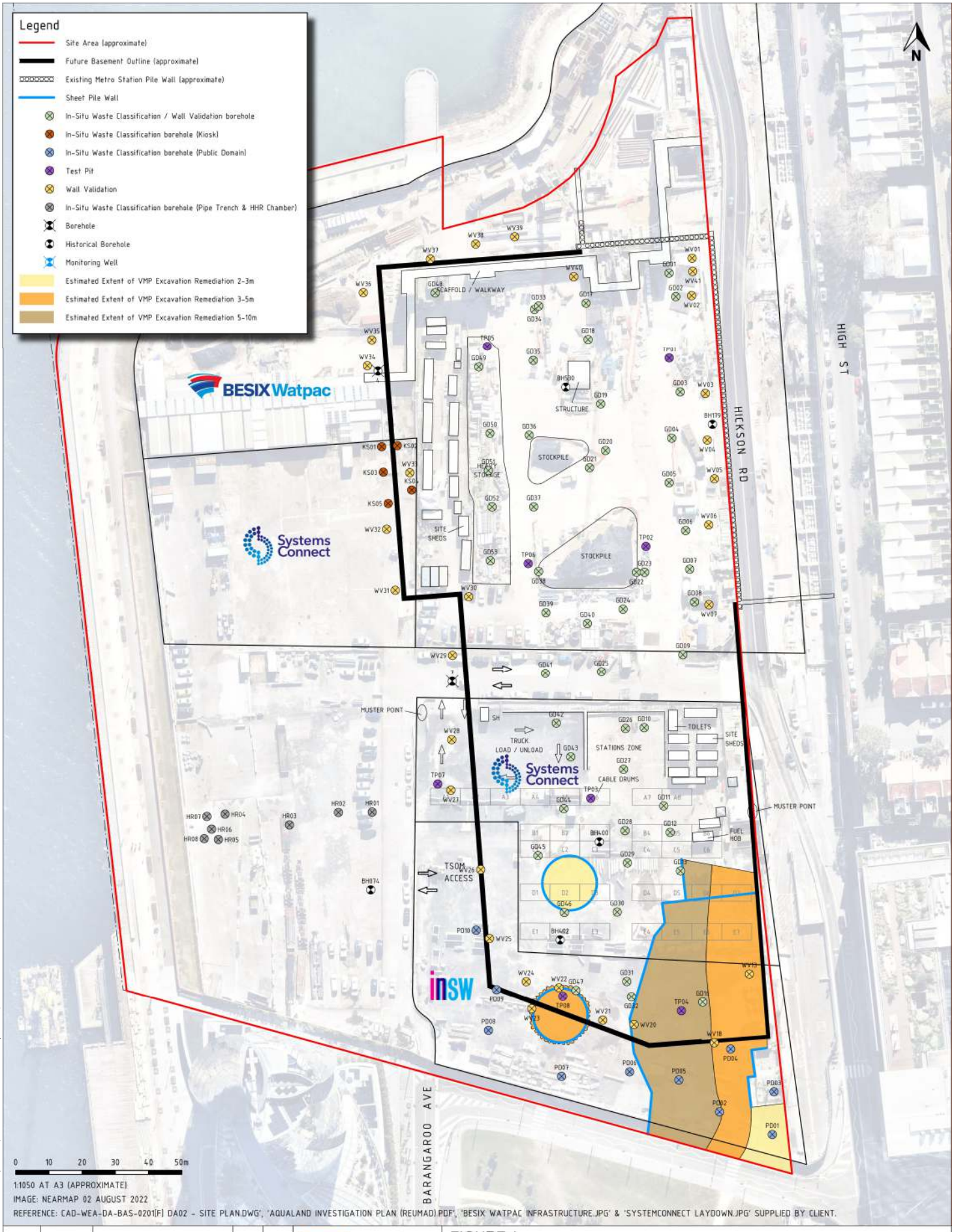
Where applicable, if a third party conducted survey work, reports (such as laboratory reports) or provided verbal information that has been relied upon by EDP the responsibility for the accuracy of such data remains with the original entity and not with EDP.

EDP expressly disclaims responsibility for any error in, or omission from, the report arising from or in connection with any of the assumptions above being incorrect.

This report must be read in conjunction with all of the attached appendices and should be kept in its entirety without separation of individual pages or sections. EDP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

EDP is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Appendix A: Site Plan



1:1050 AT A3 (APPROXIMATE)
IMAGE: NEARMAP 02 AUGUST 2022
REFERENCE: CAD-WEA-DA-BAS-0201[F] DA02 - SITE PLAN.DWG', 'AQUALAND INVESTIGATION PLAN (REUMAD).PDF', 'BESIX WATPAC INFRASTRUCTURE.JPG' & 'SYSTEMCONNECT LAYDOWN.JPG' SUPPLIED BY CLIENT.

VER	DATE	AMENDMENTS	DRW	CKD
V1	22/12/2022	initial draft	LDW	

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COMMERCIAL IN CONFIDENCE

FIGURE 1
SITE LAYOUT, INVESTIGATION AND LENDLEASE REMEDIATION

Project Ref:	S-04478.AQL.RWP_EWDA-02		
Project:	Aqualand Barangaroo		
Location:	Central Barangaroo, Hickson Road, Barangaroo NSW		
Client:	Aqualand Projects Pty Ltd		
Easting: 333637	Northing: 6251819	Datum mAHD; UTM MGA2020 56H	PRINT: A3 (L)

CENTRAL BARANGAROO WASTE CLASSIFICATION DEC 2022 V1.vwx | Thursday, 22 December 2022 5:18:48 PM | drawn by laurie white at www.reumad.com.au

Appendix B: AMP Induction Record

AMP Induction Record

Name:	Company:	Signed:	Date:

Appendix C: Example Asbestos Permit to Work

ASBESTOS PERMIT TO WORK PERMIT (EXAMPLE)

WORK REQUEST FORM REFERENCE:	
VALID UNTIL (Insert Date)	
Description of asbestos materials:	
Will an asbestos consultant be required?	YES ❑ NO ❑
Will a licensed removal contractor be required?	YES ❑ NO ❑
Company Name:	
Supervisor:	
Contact Number:	
SPECIFIC PERMIT REQUIREMENTS (TICK AS REQUIRED):	
Scope of works/technical specification for ACM removal?	YES ❑ NO ❑
Contractor Safe Work Method Statement (SWMS) issued for review and approval prior to commencement of work?	YES ❑ NO ❑
Other Items (list details):	
CONTRACTOR ACCEPTANCE STATEMENT:	
I have read and understood the permit requirements and will undertake the work in accordance with all necessary procedures and specifications.	
Signed:	
Print Name and Position:	
Date:	

The contractor must retain a copy of the work permit and work request form on site for the duration of works.

WORK PERMIT COMPLETION

(To be completed by the Management Plan Controller & Contractor)

Date Work Completed:	
Clearance certificate & air monitoring results (if applicable) received (list reference numbers):	
I am satisfied that the works have been completed in accordance with the work permit and the area has been cleaned to the required standard. Inspections and air monitoring (if applicable) confirm that the area can be safely re-occupied.	
Management Plan Controller Signature:	
Date:	
Contractor Signature:	
Date:	

Original to be retained by the **Management Plan Controller.**

Copy to be retained by **instigator of the work request.**

Appendix D: Asbestos Personal Protective Equipment

ASBESTOS MATERIALS PERSONAL PROTECTIVE EQUIPMENT

During asbestos remedial works, PPE must be worn by the LARC, the hygienist and all other personnel that may have come into contact or handled the soils onsite or uncovered asbestos materials.

The following PPE should be used as required:

PPE	Picture
Half faced disposable P2 respirator may be used for non-friable asbestos remedial works. Respirators must comply with AS/NZS 1715-2009 Selection, use and maintenance of respiratory equipment.	
Half faced respirator with a P2 particulate filter cartridge to be used for non-friable (bonded) asbestos remedial works or entry into asbestos work area at the completion of the works. Respirators must comply with AS/NZS 1715-2009 Selection, use and maintenance of respiratory equipment.	
Full faced respirator with a P3 particulate filter cartridge to be used for friable asbestos remedial works within the asbestos work area during the remedial works. Respirators must comply with AS/NZS 1715-2009 Selection, use and maintenance of respiratory equipment.	
Disposable coveralls rated Type 5/6 or equivalent e.g. Tyvek To be used for intrusive works.	
Appropriate glasses or goggles. To be used for intrusive works.	
Appropriate gloves i.e. cut resistant gloves for working with soil and disposable nitrile gloves to be worn over the cut resistant gloves, where required. Occupational protective gloves shall comply with EN 420-1994(AS/NZS2161.2-1998) Occupational Protective Gloves, Part 2 General Requirements.	
Disposable booties or safety gum boots/non-laced safety boots. To be used for intrusive works.	

It is important to note that the disposable coveralls and gloves are single use only and must be disposed of as asbestos waste after each use. Non-disposable respirators must be decontaminated prior to leaving the asbestos work area. Cartridges must be inspected and replaced as required dependent upon the type and duration of usage. Good personal hygiene practices must be carried out following any contact with asbestos materials, with particular attention paid to washing hands, fingernails and head prior to removing respirator.

Appendix E: AMP Review and Change Register

AMP Review and Change Register					
Date	AMP Reviewer (Name/Position)	All AMP content / controls adequate?	Change/Update Require?	Section and Description of update	Sign off:

Appendix F: GD18_1.0 and Surrounding Logs

Job Number: S-04478
Client Number:
Job Name:
Sampling Location: GD02
Sampling Method: Auger (5m), Sonic
Date: 19/07/22
Logged by: HS
PID Calibration (ppm)_____ Time_____
Calibration Gas: Isobutylene ☐ Other_____

From	To	Fill/Natural	Sample Depth	PID (ppm)	Soil Type	Consistency	Moisture	Plasticity	Colour	Comments
0.0	0.25				CONCRETE					ABS Sample 50, 9.0 QC14 / QC12 8.0 GW encountered
0.25	0.5	F	0.3	15.4	SAND	loose	SL	—	Brown	fine grained, with gravel.
0.5	1.2	F	1.0	0.7	SAND	dense	SL	—	Brown	moderate to slight hydrocarbon odour

Job Number: S-04478
Client Number:
Job Name:
Sampling Location: GD18
Sampling Method: Auger (5m), Sonic
Date: 19.10.22
Logged by: HS
PID Calibration (ppm)_____ Time_____
Calibration Gas: Isobutylene ☐ Other_____

From	To	Fill/Natural	Sample Depth	PID (ppm)	Soil Type	Consistency	Moisture	Plasticity	Colour	Comments
0.0	0.3				CONCRETE					GW at 2.5m? 830am CRS at 12.5
0.3	1.3	F	1.0	31.2 15.9	GS	loose	silty	—	brown	FC at 4.0 QC103 / QC104 13.0
1.3	2.1	P	2.0	12.4	CS	—	SL	—	brown	Asbestos

Job Number: S-04478
Client Number:
Job Name:
Sampling Location: GD17
Sampling Method: Auger (5m), Sonic
Date: 19.10.2022
Logged by: HS
PID Calibration (ppm)_____ Time_____
Calibration Gas: Isobutylene ☐ Other_____

From	To	Fill/Natural	Sample Depth	PID (ppm)	Soil Type	Consistency	Moisture	Plasticity	Colour	Comments
0.0	0.2				CONCRETE					GW at 3.0m 11am CRS at 10.0 - bit sinking, trouble 12.0
0.2	1.6	F	0.3	44.1 38.9	GS	loose	SL	—	brown	FM - blue metal,
1.6	2.8		2.0	55.8	S	L	SL	—	yellow	w/ gravels.

Job Number: S-04478
Client Number:
Job Name:
Sampling Location: GD19
Sampling Method: Auger (5m), Sonic
Date: 21.10.2022
Logged by: HS
PID Calibration (ppm)_____ Time_____
Calibration Gas: Isobutylene ☐ Other_____

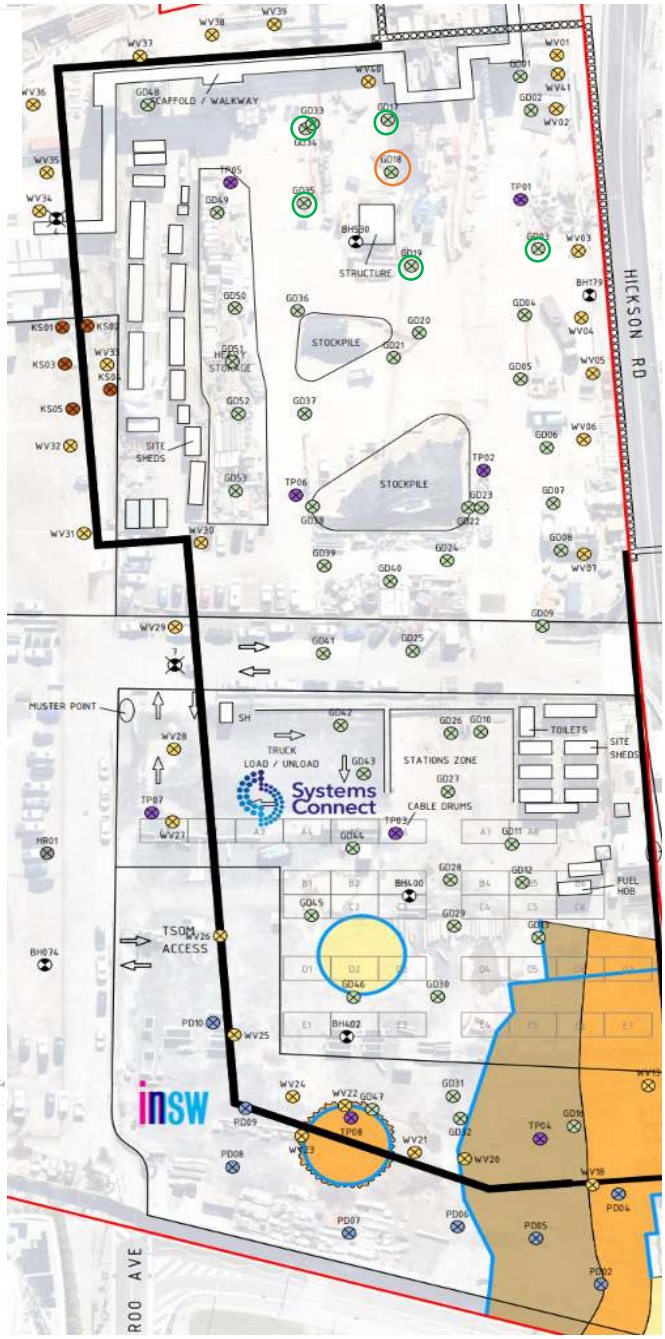
From	To	Fill/Natural	Sample Depth	PID (ppm)	Soil Type	Consistency	Moisture	Plasticity	Colour	Comments
0.0	0.2				CONCRETE					
0.2	0.5	F	0.3	50.8	CS	—	M	—	brown	FM - blue metal, asphalt pebbles
0.5	2.4	F	1.0 2.0	15.6 23.1	CS	—	M	—	yellow	ss pebbles, asphalt pebbles

Job Number: S-04478
Client Number:
Job Name:
Sampling Location: GD34
Sampling Method: Auger (5m), Sonic
Date: 20.10.2022
Logged by: HS
PID Calibration (ppm)_____ Time_____
Calibration Gas: Isobutylene ☐ Other_____

From	To	Fill/Natural	Sample Depth	PID (ppm)	Soil Type	Consistency	Moisture	Plasticity	Colour	Comments
0.0	0.1	F			CONCRETE					GW at 3.0m N 900am
0.1	2.8	F	0.3 1.0 2.0	35.9 10.8 9.2	GS	loose	SL	—	brown	FM - concrete, asphalt pebbles, sandstone, blue metal, ceramic

Job Number: S-04478
Client Number:
Job Name:
Sampling Location: GD35
Sampling Method: Auger
Date: 26.10.2022
Logged by:
PID Calibration (ppm)_____ Time_____
Calibration Gas: Isobutylene ☐ Other_____

From	To	Fill/Natural	Sample Depth	PID (ppm)	Soil Type	Consistency	Moisture	Plasticity	Colour	Comments
0.0	0.2				CONCRETE					QC107 / QC108 10.0
0.2	2.2	F	0.5 1.0 2.0	8.8 5.2 1.3	GS	loose	M	—	brown	FM - blue metal, asphalt





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