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Remediation Action Plan

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J164169

Network Strata Services (C/O: Willow Frank)

280-298 Railway Parade, Carlton NSW 2218

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Remediation Action Plan

Network Strata Services (C/O: Willow Frank)

280-298 Railway Parade, Carlton NSW 2218

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1 Introduction

Greencap Pty Ltd (Greencap) was engaged by Network Strata Services (C/O: Willow Frank) (the client) to develop this Remediation Action Plan for the remediation of asbestos identified in soil at 280-298 Railway Parade, Carlton NSW 2218 (hereafter referred to as the site). The site boundary is indicated on *Figure 1*. General site information is provided in *Table 1* below.

Table 1: Site Information		
Site Address:	280-298 Railway Parade, Carlton NSW 2218	
Local Government Area	Georges River Council	
Approximate Site Area:	3,512m^2	
Current Zoning:	B2 - Local Centre	
Current Site Use:	Mixed commercial, office space and residential	
Proposed Site Use:	Mixed Commercial/Residential	
Potential Site Users:	Workers, customers, residential tenants and workers involved in redevelopment works	
Surrounding Site Use:	North	- Railway Parade, directly adjacent the site; - Carlton Train Station commuter carpark (20m); and - Carlton Train Station (30m).
	East	- Buchanan Street, directly adjacent site; and - Low density residential (20m).
	South	- Medium density residential, directly adjacent site.
	West	- Commercial properties & Jubilee Avenue, directly adjacent site; and - Commercial properties (20m).

2 Project Background

This RAP has been developed based on the findings of the Detailed Site Investigation (DSI) undertaken for the site by Greencap in December 2019 (ref: J158211 - 280-298 Railway Parade - DSI Report - V2). Asbestos Containing Materials (ACM), in the form of fibre cement sheeting fragments (non-friable) and Asbestos Fines/Fibrous Asbestos (AF/FA) (friable) in the form of loose fibre bundles was observed in fill material at one location (BH03 - Refer *Figure 2*). As the sampling methodology utilised during the investigation was limited in nature (borehole drilling), the full extent of asbestos contamination present in fill material could not be assessed. The DSI also identified that throughout the site's history, extensive demolition/redevelopment had been undertaken, further indicating the presence of ACM within fill material on the site.

The presence of fill material on the site was identified at all borehole locations, with varying thicknesses up to 0.6 metres Below Ground Level (mBGL) (refer *Figure 2*). Fill was observed to be thickest towards the eastern portions of the site. A preliminary waste classification was developed as part of the DSI and has inferred that the fill material may be classified as "Special Waste Asbestos - General Solid Waste (GSW) (non-putrescible)".

Due to the presence of asbestos identified in fill material, the site requires remediation to be made suitable for its intended future redevelopment use mixed use commercial/residential.

This RAP is to be implemented during the future proposed site redevelopment works. As per the site Construction Management Plan (CMP) (*Willow Frank, December 2019*), redevelopment works involve a "two stage" process for demolition/construction activities. This process will allow the Development Applicant to relocate their existing offices from part of the site, into the first completed portion of the site. The two stages are further detailed below:

Stage 1:

- Demolition of existing buildings and structures;
- Removal of contaminated fill materials;
- Bulk excavation for the installation of a three-level basement carpark;
- Construction of a "mixed use" structure (commercial floorspace, rooftop open space, ground floor retail and three level basement parking); and
- Relocation of development applicants existing offices into the new office space.

Refer to *Figure 2* for Stage 1 boundary.

Stage 2:

- Demolition of existing buildings and structures;
- Post-demolition data gap assessment;
- Preparation of a Data Gap Assessment Report;
- Bulk excavation for the installation of a three-level basement carpark;
- Construction of a "mixed use" structure (56 affordable housing residential apartments, ground floor retail and three level basement parking); and
- Upon completion, Stage 1 and 2 will become continuous, operating as one building.

Refer to *Figure 2* for Stage 2 boundary.

During the earthworks stage of the redevelopment (for both stages 1 & 2), excavated materials will be surplus to redevelopment requirements. Excavated fill is to be classified in accordance with the *NSW EPA Waste Classification Guidelines,* then exported off-site. Upon confirmation that fill is removed, natural materials are to be assessed for their suitability as Virgin Excavated Natural Materials (VENM).

3 Project Objectives

The objectives of this RAP are to:

- Specify the adopted remediation strategy and its rationale;
- Set staged remediation goals (adopted site criteria) to ensure that the site is suitable for the ongoing land-use and will pose no ongoing unacceptable risk to human health or the environment;
- Document the plans and procedures to be implemented to reduce the risk to site users and workers/ecologists undertaking works on the site; and
- Establish the environmental safeguards required to be upheld during and following the remediation process.

4 Technical Framework

This RAP has been prepared with reference to the following:

- NSW EPA Contaminated Land Management Act 1997 (CLM Act);
- NSW EPA Protection of the Environment Operations Act 1997 (POEO Act);
- NSW Department of Urban Affairs and Planning (DUAP) (1998) - State Environmental Planning Policy (SEPP) No.55 – *Managing Land Contamination: Planning Guidelines – Remediation of Land* (SEPP55);
- NEPC 2013, *National Environment Protection (Assessment of Site Contamination) Measure 1999*, (NEPC amended 2013) (ASC NEPM);
- WA Department of Health 2009 'Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia';
- NSW OEH 2011, 'Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites';

- *Work Health and Safety Act 2011* NSW*;*
- *Work Health and Safety Regulation 2011* NSW;
- WorkCover NSW 2014, 'Managing Asbestos in or on Soil';
- SafeWork NSW 2016, Code of practice – 'How to manage and control asbestos in the workplace'; and
- SafeWork NSW 2016, 'How to Safely Remove Asbestos'.

4.1 Remediation Planning Requirements

Proposed remediation at the site will be classified as a Category 2 remediation (without consent) in accordance with SEPP55 (Clause 14(a)). Remediation needs development consent (i.e. Category 1) when at least one on the following points apply:

- If it is considered designated development under Schedule 3 of the NSW Environmental Planning and Assessment (EP&A) Regulation or under a planning instrument—*not the case for this site*.
- If remediation is proposed on land identified as critical habitat under the *Threatened Species Conservation Act 1995—not the case for this site*.
- Where consideration of S.5A of the *Environmental Planning and Assessment Act 1979* indicates the remediation work is likely to have a significant effect on threatened species, populations, ecological communities or their habitats—*not the case for this site*.
- If remediation is proposed in an area or zone identified in a planning instrument as being an area of environmental significance such as scenic areas, wetlands. These are listed in the SEPP—*not the case for this site*.
- If the remediation will require consent under another SEPP or a regional environmental plan—*not the case for this site*.

As none of the abovementioned points applies to the proposed remediation, development without consent can proceed as long as the following points are satisfied:

- **Local authority notified more than 30-days prior to the anticipated 'Category 2' remediation start date;**
- Proposal documentation prepared, including RAP if proponent considers it necessary;
- RAP carried-out in accordance with submitted information;
- Validation obtained from qualified expert at completion of remediation work; and
- **Local authority is notified of validation within 30-days of completion of work.**

4.2 Licensing and Permits for Asbestos Removal

The source of the contamination at the site is bonded asbestos cement and friable asbestos. As such, the relevant WHS Act and Regulations 2011 and SafeWork NSW Authority require asbestos remediation works to be undertaken by a Licensed Asbestos Removal Contractor (LARC). Accordingly, the contractor will be required to hold a Class-A (Asbestos) asbestos removal work licence. The contractor will also be required to notify SafeWork NSW of the intention to conduct asbestos remediation works.

5 Proposed Remediation Strategy

The remediation will be undertaken in conjunction with the redevelopment works on the site. This will consist of "excavation and disposal" of fill material, following the removal of concrete hardstand/building footprints across the site. This strategy will be implemented during both stage 1 and 2 of the redevelopment works.

This is the preferred method of remediation, as the project has material surplus (to be disposed during bulk excavation regardless of contamination status) due to the planned underground carpark. As a result of this remediation method, after all contaminated soils are disposed off-site and following successful validation by

the environmental consultant, long-term management under an Environmental Management Plan (EMP) would not be required.

5.1 Future management following remediation

As the contaminated fill materials identified in the DSI are to be removed from the site under the methodology provided in this RAP, an ongoing EMP would not be required for the site.

6 Remediation Strategy

The remediation strategy for each stage of the proposed redevelopment works are detailed below:

6.1 Stage 1

6.1.1 Final Classification of Fill Material

An indicative waste classification was undertaken in the DSI (Greencap 2018). The chemical data presented in this report indicated that the material was classified as Special Waste Asbestos – GSW (non-putrescible) – *This is to be confirmed with the final waste classification assessment*.

Upon completion of works to remove the concrete hardstand/building footprints from the Stage 1 redevelopment area, a suitably qualitied environmental consultant is to attend site and undertake final waste classification sampling/assessment of the fill material to be excavated in accordance with the *NSW EPA Waste Classification Guidelines.* The sampling requirements for waste classification are in line with the *NSW EPA Waste Classification Guidelines* and are presented as follows:

- 3 samples for stockpiles < 75 m^3;
- 1 sample per 25 m^3 for stockpile/in-situ material < 200 m^3;
- A minimum of 10 samples stockpile/in-situ material > 200 m^3; and
- 1 sample per 250 m^3 for stockpile/in-situ material >3000 m^3.

The chemical data presented in the DSI (Greencap 2018) is to also be incorporated into the final Waste Classification Report.

The waste classification is to encompass the approximate extent of the stage 1 redevelopment zone excavation boundary and encompass all fill material (*Figure 2*). The waste assessment is to also delineate the full extent of potential asbestos contamination (if practical), as identified in the DSI at sampling point BH03.

6.1.2 Removal of Fill Material

Upon completion of waste classification assessment for the material, as explained in *Section 6.1.1,* fill materials are then to be "excavated & disposed" off-site to an appropriately licensed landfill. Excavation/removal works are to be undertaken in conjunction with supervision by a suitably qualified environmental consultant to document/confirm the removal of all fill material to natural soils (approximately a maximum depot of 0.6 mBGL). As asbestos has been identified in the fill material, any works involving the disturbance of fill material on the site will be required to be managed under this RAP and the AMP developed for the site (ref: *J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*). This also includes supervision by a "Class A" LARC.

6.2 Stage 2

6.2.1 Data Gap Assessment and Final Classification of Fill Material

Due to access restraints during the DSI (i.e. existing buildings, drilling point limitations etc) data gaps are present within the stage 2 redevelopment area. This section covers an approximate area of 1,700m^2 (refer to *Figure 2).* Further investigation is required with this area following the removal of concrete hardstand and demolition of the buildings as part of the stage 2 redevelopment.

The primary purpose of this assessment will be to close out the data gaps identified during the DSI and in addition, provide a final waste classification for the fill material within the stage 2 boundary.

Data Gap Assessment

The western portion of the site was inaccessible during intrusive investigations. This area is within the stage 2 redevelopment area. Following completion of the demolition of all site structures and removal of hardstand, an assessment involving test pitting and soil sampling within this area is to be undertaken.

The *WA Department of Health (2009) Guidelines* details the sampling density to determine the minimum sampling requirements required for site characterisation based on detection of circular hotspots. The above-mentioned investigation area is approximately 1,700m^2, therefore the minimum recommended sampling density is seven points.

The locations would be arranged on a square grid pattern. Sampling depths at each location includes:

- Excavation of test pits using an excavator for sampling/assessment of the fill layer, including bulk field screening of bonded ACM on 10 litre soil samples plus laboratory analysis of Contaminants of Potential Concern (CoPC) including asbestos fines / fibrous asbestos (AF/FA on 500 ml samples), at all seven locations.

The fieldwork and laboratory testing component of this Data Gap Assessment can be incorporated into final a waste classification sampling exercise defined in *Section 6.2.2*.

Results of this data gap assessment are to be presented in a Data Gap Assessment Report. Should this assessment reveal contamination other than asbestos (friable or bonded), additional management requirements are to be defined in a RAP Addendum.

6.2.2 Waste Classification of Fill Material

As a result of data gaps in the Stage 2 redevelopment area (Refer *Section 6.2.1*), waste classification sampling is to be conducted during the Data Gap Assessment fieldwork. A suitably qualitied environmental consultant is to conduct waste classification sampling/assessment of the fill material to be excavated in accordance with the *NSW EPA Waste Classification Guidelines.* The sampling requirements for waste classification are in line with the *NSW EPA Waste Classification Guidelines* and are presented as follows:

- 3 samples for stockpiles < 75 m^3;
- 1 sample per 25 m^3 for stockpile/in-situ material < 200 m^3;
- A minimum of 10 samples stockpile/in-situ material > 200 m^3; and
- 1 sample per 250 m^3 for stockpile/in-situ material >3000 m^3.

The waste classification is to encompass the approximate extent of the stage 2 redevelopment zone excavation boundary and encompass all fill material (*Figure 2*).

6.2.3 Removal of Fill Material

Following completion of the data gap assessment and classification of the material *as per Section 6.2.2,* fill materials are then to be "excavated & disposed" off-site to an appropriately licensed landfill. Excavation/ removal works are to be undertaken in conjunction with supervision by a suitably qualified environmental consultant to document/confirm the removal of all fill material to natural soils (approximately a maximum depot of 0.6 mBGL). As asbestos has been identified in the fill material in the eastern portion of the site (Stage 1), asbestos is likely to be encountered in stage 2 (this will be confirmed upon completion of the Data Gap Assessment (refer *Section 6.2.1*). If asbestos is confirmed, any works involving the disturbance of fill material on the site will be required to be managed under this RAP and the AMP developed for the site (ref: *J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*).

6.3 Clearance/Validation Following Fill Removal

Photographic evidence is to be documented during the removal of fill material as described in *Sections 6.1 and 6.2.3*. Upon completion of the removal works, an asbestos clearance certificate and validation report is to be prepared for each stage, to confirm the removal of asbestos contaminated fill material from the site. Refer to *Section 13* for detailed description of the site validation requirements.

6.4 Natural Material

Based on the DSI, the potential for contamination stems from the impacted fill material on the site. Contamination has not been identified in the natural material at the site to date.

Prior to natural materials being exported from the site, the natural materials are to be assessed by a suitably qualified environmental for its suitability as VENM. Following assessment, a VENM certification may be issued. Refer to *Section 7.4* for details on controlling excavated materials.

7 Remediation Action Plan

7.1 Remediation Extent and Considerations

Remediation works will involve the off-site disposal of ACM contaminated fill as mentioned in *Section 6*. Fill material is inferred to extend across the entirety of the site (including both stages 1 and 2), with an approximate horizontal extent of up to 0.6m BGL. Indicative depths of fill are presented on *Figure 2*.

Natural soils beneath fill materials on the site were identified in the DSI to be free of Contaminants of Potential Concern (CoPC).

7.2 Preliminaries

A site-specific Asbestos Management Plan (AMP) has been prepared for the two redevelopment stages of the site (ref: *J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*). This AMP details the roles, responsibilities and requirements for management planning of excavation works involving asbestos containing soils. The AMP also describes and implements systems to ensure that works involving disturbance or the removal of the ACM is performed to a high standard and that precautions are maintained throughout the work to protect workers (both construction & ecological), occupants of adjacent areas, and visitors to site, from exposure to asbestos.

The AMP document is prepared as a guidance for the LARC. The LARC should review the AMP and the RAP, prior to the work. The LARC shall make full provision for all project related works, including management of excavations, waste removal, disposal and any other works to be conducted involving asbestos in accordance with the AMP and relevant NSW legislation.

Specific requirements detailed in the AMP which require implementation prior to remediation works occurring, include but are not limited to the following:

- A dedicated, Class A LARC must be present at all times to direct the works;
- Notification to SafeWork NSW to undertake the remediation, which must be submitted by the nominated Licenced Asbestos Removal Contractor (LARC);
- A qualified Asbestos Consultant will attend the site during the works to implement daily air monitoring and carry out inspections of the exclusion zone excavated materials for presence of asbestos, when requested;
- Personnel entering the exclusion zone must be competent and appropriately trained, with training records available on site. The personnel are to use all required Personal Protective Equipment (PPE) and follow decontamination procedures. This applies to people entering the asbestos affected area during excavation works and particularly to workers excavating and relocating soils;
- Continual moistening of the soil for dust suppression is required;
- In addition to notifying the relevant regulatory authorities and in accordance with current legislation, any neighbouring properties and persons within and surrounding an area that may be affected by the asbestos works, must be informed of the works prior to their commencement;
- Sufficient and appropriate warning signs (e.g. “caution: asbestos removal”) are to be erected at regular intervals around the boundaries and at entry points to the work area exclusion zone during the works (the exclusion zone is required in areas where there is known ACM contamination);

- Fencing or barricading must be in place around the boundaries of the exclusion zone and its integrity maintained for the duration of the works;
- An inspection by the supervising qualified consultant is to be undertaken prior to the commencement of any works to confirm that the asbestos work area has been adequately set up;
- A site induction must inform workers of the presence of ACM, the related risks and controls in place to manage the risks and any other general information relating to asbestos as seen appropriate. A more detailed induction / training process must be implemented for all workers expected to come in direct contact with and/or disturbance of asbestos; and
- As per SEPP55, Georges River Council (the Council) will be notified more than 30-days prior to the remediation start date.

7.3 Removal Works

The following controls are to be maintained throughout the removal works:

- The asbestos removal contractors must ensure that entry gates into the remediation areas are always closed (other than to allow entry and exit of trucks) and that truck wheels are adequately clean if required before leaving the asbestos work areas;
- It is to be communicated and maintained that plant operators working within the exclusion zone must keep their windows closed and must not leave their truck cabins whilst within the asbestos removal work area;
- The works should be carried out in accordance with the SafeWork NSW (former WorkCover) Codes of Practice list above (i.e. How to Manage and Control Asbestos in the Workplace (SWA 2011b) and Code of Practice How to Safely Remove Asbestos (SWA 2011a), SafeWork NSW requirements and the AMP prepared for the site;
- A suitably qualified environmental consultant should be on site during the earthworks to obtain a photographic record of the excavation works, monitor the environmental and health and safety controls implemented by the LARC and provide air monitoring and general advice as required. A clearance report on the asbestos remediation works should be provided;
- Barricade the area from the remaining work site and attach warning signs;
- Dust suppression (water spraying) is to be undertaken during all works to minimise dust emissions and exposure to the site workers and the surrounding community; and
- Any asbestos and/or asbestos contaminated material removed from site must be classified as Special Waste-asbestos (as detailed in the Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*) developed for the site).

7.4 Control of Excavated Materials

- The fill soil (existing fill or any type of unverified fill) at the site is not to be reused in any area on the site, due to potential presence of asbestos;
- **Fill material will be neatly separated from the natural soils on site to maximise resource recovery;**
- **Virgin excavated natural material (VENM) is to be stockpiled separately from fill material;**
- All excavated fill material will be stockpiled and surrounded by a silt fence or bund;
- For natural/ uncontaminated soils, classified as VENM or ENM, maximum practical resource recovery will be ensured by the contractor with the following order:
  - 1st Priority (most preferable): On or off-site re-use.
  - 2nd Priority: Re-cycling.
  - 3rd priority (least preferable): Last resort - landfill disposal.

- Imported landscaping soils and aggregates, sand or topsoil are to be certified as free of asbestos and classified as virgin excavated natural material (VENM) or excavated natural material (ENM). Blended and manufactured soils imported for use should be validated prior to importing due to potential asbestos contamination in these materials. It is recommended that imported soil materials are validated prior to importing them onto the site by a qualified consultant. This includes either VENM classification or sample analysis for asbestos if use of non-VENM material is proposed;
- No unverified fill/ aggregate material will be imported to the site; and
- NSW EPA waste exemption order documentation is required for imported recycled materials including excavated natural material (ENM), gravel aggregates and sands.

Further general details on site management for asbestos remediation are included below.

7.5 Stockpiling

If contaminated soils are to be temporarily stockpiled outside the remediation area, the stockpile must first be underlain with geofabric or 200µm builder's plastic to minimise potential cross contamination of the ground surface. The stockpile must be wetted and securely covered with geofabric or plastic sheet until moved.

7.6 Asbestos Fibre Air Monitoring

Refer to Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2)* for asbestos fibre air monitoring requirements for the site.

7.7 Clearance Inspection

At the conclusion of the earthworks involving asbestos contaminated material removal, the asbestos consultant will conduct inspections for the presence of visible asbestos within the work areas. Requirements are detailed in the Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2).*

7.8 Roles and Responsibilities

As a mechanism for ensuring compliance, surveillance must be implemented at the site. This may include the following components:

- Appointment of a specific representative (e.g. project manager or site manager) who has responsibility for controlling works at the site (preferably experienced with working on asbestos impacted construction sites);
- Responsibility for the approval of a Safe Work Method Statement (SWMS);
- Responsibility for notifying site workers, sub-contractors, etc. of when excavation works are scheduled in known asbestos-contaminated areas, the exclusion zone and restricted access requirements;
- Maintaining a record of remediation works carried out, which includes confirmation that the requirements outlined in this plan have been met;
- Maintaining a log that records any non-compliance with the requirements of the plan and outlines action taken to prevent recurrence of the breach;
- Site inspections to confirm compliance with the requirements of the AMP and RAP by site workers;
- Ensuring that no un-planned site works that have a potential to disturb ACM in areas where they have been identified are undertaken without the contractor being advised of the requirements of this plan; and
- Retaining results of asbestos monitoring and other relevant reports.

7.9 Unexpected Finds

The asbestos finds to date have been identified through the DSI. Due to limitations in sampling techniques (boreholes), there is potential for unexpected finds of asbestos and other potential contaminants. In the event of such finds, the Unexpected Finds Protocol (UFP) attached in *Appendix A* should be implemented.

8 Soil Assessment Criteria

Guidance on management of asbestos contaminated soil has been prepared by the Western Australian Department of Health in the 2009, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (DOH 2009). This has been adopted nationally in the 2013 National Environment Protection Measure Schedule B1 (NEPM 2013). Soil Investigation Levels (SILs) provided in DOH2009/NEPM 2013 are used to assess the significance of the concentrations of asbestos in soil. The following soil asbestos investigation levels are adopted as criteria for the proposed land use (HIL-D) and are applicable to the site:

- 0.001 % w/w fibrous asbestos (FA)and asbestos fines (AF); and
- 0.05% for bonded ACM.

If these criteria are met by soil sample analysis results obtained by detailed assessment of the affected area, the guidelines also recommend that the surface 100 mm thick layer soil which be made entirely free of asbestos and the capping layer is to ensure this is achieved.

Asbestos in soil at the site has been identified as bonded and FA/FA. The ACM criteria are compared to bulk soil sample analysis results according to the methods in NEPM 2013 (Schedule B(1) Section 4.10 and WA Dept. of Health 2009 Guideline (Section 4.1.7 WA Dept. of Health 2009).

The method by which % bonded soil asbestos is calculated is as follows:

$$\% \text{ Soil Asbestos} = \frac{\% \text{ Asbestos Content x ACM (kg)}}{\text{Soil Volume (L) x Soil Density (kg/L)}}$$

Where it was assumed that:

- % Asbestos Content (within asbestos cement materials identified during raking) = 15%
- Soil Density (sandy soils) = 1.65 kg/L

Assessment of potential fibrous asbestos (FA) and asbestos fines (AF) is also required. This involves laboratory analysis of minimum 500 ml samples for AF/FA at a NATA-accredited laboratory (NEPM 2013 / WA Dept. of Health 2009).

9 Site Management

The Principal Contractor shall be responsible for all necessary management controls that need to be implemented on the site, with common management controls described in the following sections.

Note that this RAP and the following sections are not designed to act in place of a formal Construction Site Environmental Management Plan (CEMP) for the works.

9.1 Site Access and Security

The Principal Contractor shall be responsible for ensuring that site access is limited to required personnel, that security of the work area is maintained and that all equipment and plant is maintained through the project. As a minimum the following is required:

- A visual barrier / signage and warning labels are to be erected around the boundaries of the accessible work area; and

- A site induction and sign in/out register to familiarise personnel with site conditions and remediation requirements.

9.2 Traffic Control

The Principal Contractor shall be responsible for adequate levels of traffic control for the roadway entrance to the site. As a minimum the following needs to be implemented:

- Traffic Management for vehicles entering and leaving the site;
- A log in/out vehicle checklist for heavy vehicle movements on/off the site;
- Traffic management shall also be controlled internally on the site. Designated haul roads and exclusion areas shall be marked to ensure trucks do not enter restricted areas of the site. Where haul roads are bare earth appropriate dust suppression shall take place; and
- At no time are trucks to drive over the fill material or drive anywhere but on the management trail when working on-site.

9.3 Hours of Operation

The Principal Contractor shall be responsible for ensuring all works are conducted during the hours of 07:00 through 18:00 Monday to Friday, and 08:00 to 12:00 on Saturdays. No work will be carried out on Sundays and Public Holidays.

10 Environmental Control Measures

This section outlines the necessary steps which need to be implemented to ensure the protection of the site and surrounding environment during remediation projects. The key issues which, as a minimum, must be addressed by the Principal Contractor, associated with any remediation project, are listed in the following sections. The control measures discussed in this section are general and need to be considered on a site-specific basis.

10.1 Dust Control

Site personnel, the public, neighbours and the environment need to be protected from dust generated during remediation works. All works must be conducted with dust suppression in place such that no significant visible dust is generated. As a minimum the following needs to be implemented:

- Regular dampening of areas where heavy machinery will be utilised, where excavations are occurring and where spreading/compaction is being undertaken;
- Protecting stockpiled material with tarps, consolidation, erection of wind breaks and if these measures cannot be reached, then wetting down of the material;
- Ceasing work in heavy wind events;
- Loading of materials into trucks as close to stockpile or *in-situ* location as possible; and
- Trucks should have their loads covered when not being loaded, including movement on the site.

Dust control measures for the management of ACM soils are detailed in the Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*) for the site.

10.2 Sediment and Contaminated Runoff

The management of all stormwater and surface water runoff is critical in remediation projects to limit the potential for contamination spread and impact to waterways during exposure of soils. As a minimum the following is to be implemented:

- Storm and surface water diversion and detention system if required;
- Silt control fencing should be erected around the entire boundary of the works area;

- Silt control fencing should be placed around all stockpiles; and
- Regular inspections of fences should be conducted to ensure their ongoing effectiveness.

All works should be undertaken with reference to the NSW DECC (2008) *Managing Urban Stormwater, Soils and Construction Guidelines, Volume 2A* Installation of services.

10.3 Materials Handling and Transportation

The appropriate management of materials during remediation and transport is critical in remediation projects. As a minimum, the following needs to be implemented if contaminated material is to be removed from the site:

- The trucks or bins used to transport waste from the site are to be lined with one layer of 200-micron polythene sheeting or are to be thoroughly cleaned at the completion of the project to facilitate decontamination after tipping of the waste;
- Trucks are required to have their loads covered prior to leaving site;
- Vehicles should stay to designated haul roads at all times to prevent the potential spreading of impacted material;
- All trucks used for the transport of asbestos materials must have functional tarpaulins suitable for this work. The asbestos removal contractor must ensure that all loads are completely covered before leaving the work area. Spillage of soil during transport is to be prevented;
- Equipment, trucks, etc. are to be decontaminated prior to leaving the site to prevent the inadvertent transport of contaminated material off-site (e.g. materials tracked off-site on truck tyres etc.). If required a shaker grid should be installed at the exit point;
- Trucks and other machinery transporting material around site or working in contaminated areas should remain on contaminated material until wheels/tracks and vehicle undercarriage can be cleaned;
- It is the asbestos removal contractors' responsibility to ensure that all measures are in place to prevent potential cross contamination of 'clean' areas of the site as a result of excavator tracking or truck movements; and
- Any waste being disposed off-site must go to an EPA licensed landfill facility and must be accompanied by appropriate waste classification documentation. Tipping receipts and tracking documentation must be retained and provided to the environmental consultant.

Note: Any contaminated soils requiring off-site disposal will need to be classified for waste disposal prior to leaving site. Contaminated soils will need to be disposed of at a landfill facility licensed to accept that waste and all disposal dockets will need to be retained. Validation sampling across the footprint from where the contaminated soils were removed will be required unless the stockpiled material is placed on hardstand such as concrete, asphalt or on a plastic sheeting (200 µm thick as a minimum).

10.4 Noise Control

Due to the use of heavy machinery required during remediation, excess noise will be generated. To help minimise excess noise the following needs to be implemented:

- Strict adherence to hours of operation as prescribed for the site; and
- Australian Standard (AS) 2436-1981 Guide to noise control on construction, maintenance and demolition sites outlines guidelines for the minimisation of noise on construction sites and should be implemented to minimise noise generation.

10.5 Maintenance of Environmental Controls

Regular inspections of the environmental controls to confirm their presence and validity should be routinely conducted by the Principal Contractor. This should be undertaken on a daily basis, and more frequently if conditions require, such as rain or high winds.

11 Occupational Health and Safety

The DSI carried out by Greencap noted that the most significant human health risk associated with asbestos in soil on the site was likely during disturbance of the material. As a result, the most significant human health receptors would most likely be workers potentially exposed to asbestos fibres during excavation or remedial works.

This section outlines worker health and safety (WHS) risk management protocols to be put in place pertaining to the remediation project. The steps outlined in the following sections will need to be followed during all remedial works. The WHS steps discussed in this section are based upon the information to date. Where unexpected finds occur or new issues are identified, the occupational hygiene controls should be appropriately adapted.

11.1 Site Induction

The Principal Contractor must ensure all personnel working on the remediation project attend a site induction undertaken prior to entering the site for the first time. The Site Induction should include a brief outline of the remediation project, details on general site hazards (e.g. vehicle movements, heavy machinery, contamination, etc.) and details on the specific hazards associated with the remediation works including but not limited to:

- Nature of the materials being handled (i.e. asbestos contaminated soil);
- Personal protective equipment to be utilised on site; and
- Necessary decontamination procedures to be undertaken whilst on site.

11.2 Personal Protective Equipment

Safety boots, high visibility vests and hard hats shall be worn by all personnel on the site. Hearing protection devices will be worn by personnel exposed to noise levels exceeding L Aeq,8hr 85 dB(A) or L peak 140 dB(C) (e.g. those working around heavy machinery). When personnel are working in the designated contaminated area and are required to handle or to come into direct contact with contaminated soil then site-specific PPE requirements are to be implemented, as prescribed in the Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*) for the site.

These requirements are specified as a minimum standard and may be modified at the discretion of the Project Manager or Principal Contractor during the remediation works.

11.3 Decontamination

For friable asbestos removal, a thorough personal decontamination procedure must be adopted. Decontamination requirements are detailed in the Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*) for the site.

11.4 Hazard Assessment

A hazard assessment will be conducted on site prior to commencement of works. It will address, as a minimum, the following:

- On site contamination hazard: The contaminant of concern is asbestos. However, if any odours, vapour or stained soils are identified, work is to stop and the source is to be located;

- Additional hazards: Other hazards associated with remediation projects include heat stress, manual handling, underground utilities, electrical hazards and plant; and
- Hazard assessments should include information on the controls to be implemented by the contractor to minimise hazards associated with the works.

11.5 Air Monitoring

It is noted that as this is friable 'Class A' works, it is mandatory for an LAA to oversee the works and conduct air monitoring to assess the quality of the air within the area and neighbouring properties to assist in managing exposure to on-site workers and nearby occupants during remediation. The Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*) prepared for the site details the asbestos air monitoring requirements, methodology and action levels.

The results of asbestos air monitoring should be provided to the Principal Contractor following each workday and should also be included within the Validation Report (refer to *Section 13.3*).

Based upon current site knowledge, no other air monitoring is considered necessary during remediation works on the site.

11.6 Community Health and Safety

As the site is a remediation project, only inducted personnel (as specified in *Section 11.1*) are allowed on the site. To ensure the protection of the community, the following needs to be implemented:

- A visual barrier is to be erected around the entire perimeter of the remediation area;
- Dust suppression is to be undertaken to minimise exposure to the site workers or the surrounding community; and
- It will be the Principal Contractor's responsibility to assess whether some works should be suspended or extra controls be put in place on days where excessive dust may be generated (e.g. high wind days).

Surrounding neighbours will be advised of the remediation works.

11.7 Site Facilities and Personal Hygiene Requirements

As the site is a remediation project the following facilities need to be provided and available to the personnel on the site:

- Fresh protective coveralls will be available at all times during the remediation project to staff who require them;
- Lunchroom and associated facilities; and
- Bathroom, amenities and associated facilities.

The following hygiene requirements are to be followed by all personnel working at the site:

- No eating, smoking or drinking to be conducted in the remediation area; and
- Staff to wash hands and face prior to eating, smoking or drinking.

12 Emergency Procedures and Response

12.1 General Emergency Response

The responsibility for emergency procedures lies with the Principal Contractor however, the following is an example of the type of information which can be included in the general emergency procedure document.

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

The following procedures should be conducted if site personnel are injured, suffer exposure or a condition is uncovered that has not been covered by this RAP is identified:

- Visual contact to be maintained by personnel on site;
- In the event that any site personnel experiences any adverse symptoms of exposure whilst on-site, work will be halted and instruction or assistance sought from the Principal Contractor;
- In the event of an accident, the Site Supervisor and the injured person will compile an incident report, which will be submitted to the Principal Contractor within 24 hours of the incident. Follow-up actions will be carried out to correct the situation;
- 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 Project Manager must be notified immediately;
- To minimise the impact of an emergency situation, at least one of the Principal Contractor's site personnel working full time on site will be trained in basic first aid procedures and all field personnel will have immediate access to a first aid kit; and
- Emergency phone numbers will be made available at the commencement of the project including ambulance, fire brigade, police and the nearest hospital. Emergency services can be called on 000 in a life-threatening emergency. In addition, the mobile phone numbers of the Principal Contractor, Site Supervisor and the Project Manager will be made available.

12.2 Emergency Response for Elevated Air Monitoring Results

Refer to Greencap AMP (*J164169 - Asbestos Management Plan - 280-298 Railway Pde_V2*) for the emergency response procedures for elevated air monitoring results.

13 Validation Requirements

13.1 Remediation Supervision

- A suitably qualified environmental consultant will supervise the excavations and asbestos removal works;
- Daily site diaries will be held for the tracking of material movements;
- Photographic evidence will be collected by the supervising Environmental Consultant for activities necessary for the Validation Report; and
- Any non-compliances on site with the RAP, AMP or relevant legislation by the workers or contractors will be communicated to the client.

13.2 Clearance Inspection and Certificates

Asbestos clearance of the site includes visual inspection of the ground surface during and following excavations or stripping and off-site disposal of material.

The natural ground surface and excavations will be inspected/raked with a fine toothed rake for presence of ACM. Following the completion of inspections, a visual Clearance Certificate can be issued indicating that the ACM removal works have been completed to a practically achievable standard. The Certificate will include photographs of the areas inspected, a site plan, clearance air monitoring and results of the air monitoring conducted during remediation.

13.3 Validation Reporting

Following completion of the remedial works and obtainment of all the necessary information for site validation, staged Validation Reports for each of the two stages will be prepared by a suitably qualified Environmental Consultant.

The Validation Report will follow the requirements established in this RAP and be prepared in accordance with ASC NEPM (2013) and Guidelines for Consultants Reporting on Contaminated Sites (OEH 2000).

The following documents should be included in the Validation Report:

- Waste disposal information (including landfill dockets, details about the disposal site, type and volume of materials disposed);
- Material tracking information for VENM/ ENM (including, VENM/ ENM Reports, type and volume of materials transported, address of the receiving site, photographic evidences of material transfer)
- Results of daily asbestos air monitoring;
- Photographic documentation of the remediation works undertaken;
- Laboratory transcripts of validation samples collected (if applicable);
- Calibration certificates of the equipment used (if applicable); and
- Final surface asbestos clearance certificate.

Remediation Action Plan

Network Strata Services (C/O: Willow Frank)

280-298 Railway Parade, Carlton NSW 2218

Figures

Legend:

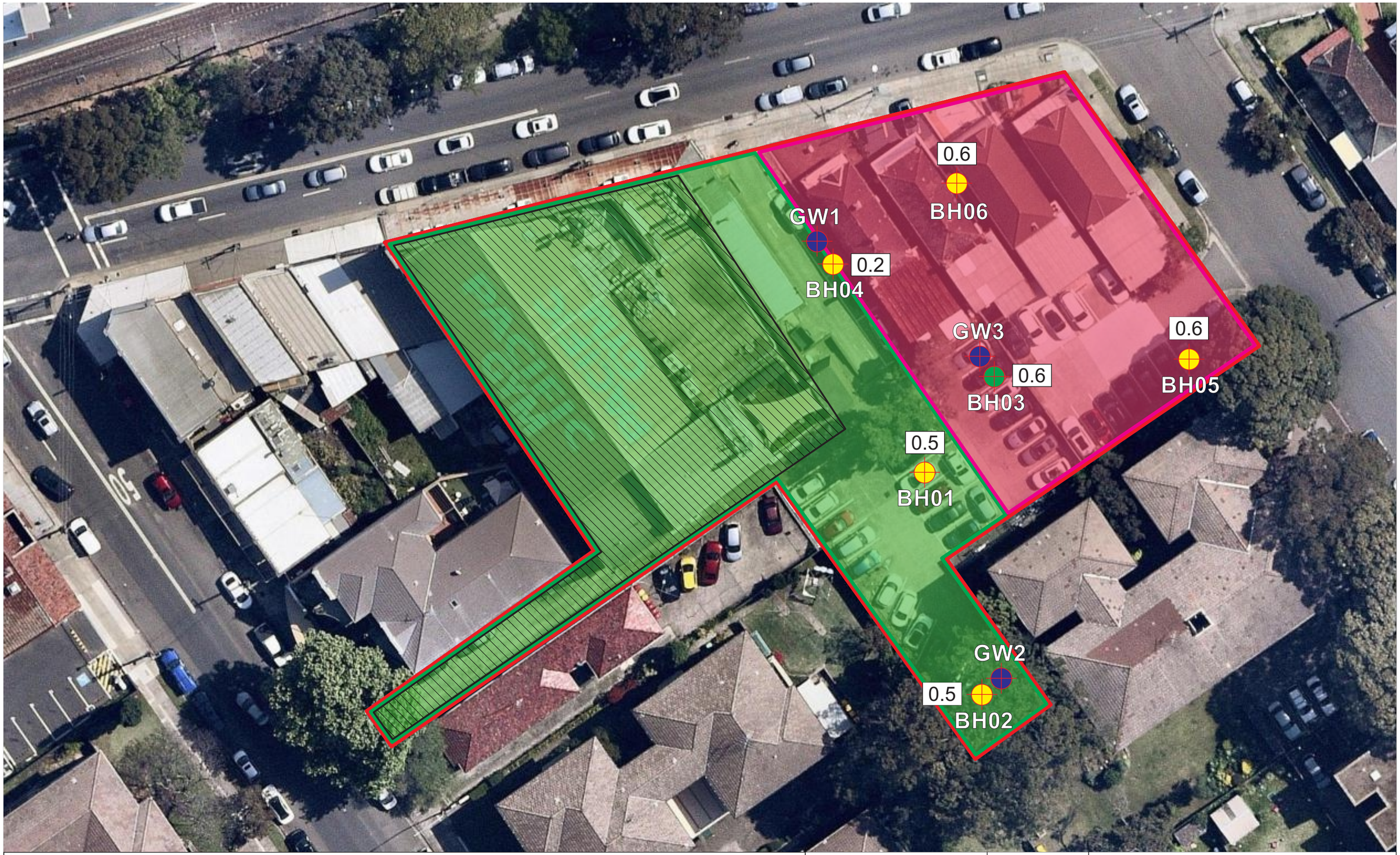
- Site Boundary
- Site Location

Metres: 0 25 50 75 100

GREENCAP
Going Further in Managing Risk

Level 2, 11-17 Khartoum Road
North Ryde, NSW 2113
Ph: 02-9889-1800
Fx: 02-9889-1811

Client Name:	Willow Frank Pty Ltd				
Client Number:	C122978	Project Number:	J164169		
Project Description:	Remediation Action Plan				
Address:	280-298 Railway Parade, Carlton NSW 2218				
Prepared:	JG	Reviewed:	MB	Date:	03/07/2020
Figure 1	Site Location and Regional Context				



Legend:

Metres: 0 10 20 30 40

- Site Boundary
- Borehole Location (Greencap, Dec 18)
- Borehole Location - Positive ACM Detection (Greencap, Dec 18)
- Groundwater Well Location (Greencap, Dec 18)
- 0.1 Approximate Depth of Fill - Metres Below Ground Level (Greencap, Dec 18)
- Stage 1 Redevelopment Area
- Stage 2 Redevelopment Area
- Area Subject to Post-Demolition Data Gap Assessment

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Prepared:	JG	Reviewed:	MB	Date:	03/07/2020
Figure 2	Investigation Locations, “Stage” & Data Gap Boundaries				

Remediation Action Plan

Network Strata Services (C/O: Willow Frank)

280-298 Railway Parade, Carlton NSW 2218

Appendix A: Unexpected Finds Protocol

Introduction

This document specifies the procedures and controls to be implemented in the event that any unexpected soil and/or groundwater contamination is identified during the earthworks and construction phase at 280-298 Railway Parade, Carlton NSW 2218 (hereafter referred to as the site).

Unexpected Finds Protocol

In the event that potential soil and/or groundwater contamination is identified during the works, the following procedures must be implemented:

The workers that encounter the potential contamination must stop work immediately and notify their supervisor. The supervisor must then immediately notify The Principal Contractor's Project Manager. Work must cease in this area until further assessed and advice provided by a suitably qualified person (e.g. Environmental Consultant or Occupational Hygienist).

- If the encountered contamination presents an immediate risk to human health or the environment (e.g. ruptured oil drum or offensive odours), controls must be immediately implemented to contain and prevent further release of the contaminant. Workers initiating such controls must be suitably competent and wearing suitable personal protective equipment (PPE), which should be stored on site. Chemical spill kits should also be stored on site.
- The Principal Contractor is to immediately notify the Environmental Consultant to undertake a preliminary assessment of the potential contamination. Based on the findings of the preliminary assessment, further sampling and investigation may be required.
- Once confirmed that a contamination risk has been identified, The Principal Contractor is to verbally advise the Auditor (if engaged) of the unexpected find. Written notification should follow, which will provide relevant information relating to any special recommendations to site workers/employees, further sampling, investigation and remediation that may be required.
- If remediation is required, The Principal Contractor must notify Network Strata Services (C/O: Willow Frank) and relevant regulatory authorities (as required) of the planned commencement and completion dates and details of the remediation strategy to be adopted. Any information/reports relating to assessment, investigation or remediation of the unexpected contamination must be included as part of this notification.
- The Principal Contractor have a responsibility to keep regulatory authorities and Network Strata Services (C/O: Willow Frank) updated throughout the duration of any remediation works. If validation testing/validation programs are required on completion of the remediation works, a validation report will be prepared by the Environmental Consultant. Copies of any validation results and clearance reporting must be provided by The Principal Contractor to all relevant parties.

Unexpected Finds Protocol – 280-298 Railway Parade, Carlton NSW 2218

The Unexpected Finds Protocol will be applied by workers when triggers such as suspected buried building materials, offensive odours, ruptured oil drums, staining (outside the quarry area) underground storage tanks (UST's) unexpectedly found on site. Such an occurrence may occur:

- During excavation works/encountering groundwater;
- During building work;
- Following soil disturbance after a storm or some other unexpected event; and/or
- As a result of illegal dumping.

Note: Asbestos containing materials (bonded and friable) are considered as recognised contaminants on site and as such are NOT considered as unexpected finds. The presence of the above-mentioned materials are to be assumed and as such management/disposal is to be acknowledged as the sole responsibility of the contractor.

The following procedure will be applied when an unexpected find occurs:

Unexpected Find Occurs

The Workers will:

- Immediately cease work;
- leave the area;
- Isolate the area;
- Stop airflow (e.g. air conditioning/fans) within the area; and
- Contact the Site Manager as soon as possible.

Site Manager

- Install controls to further manage the isolation of the area. This may be achieved by use of warning signage and barricading;
- For soil stockpiles/in-situ material where unexpected contamination is identified:
  - Cover stockpiles with an impermeable tarpaulin to reduce runoff; and
  - Install appropriate stormwater and sediment controls to prevent the uncontrolled escape of potential contaminants leaving the area.
- For soil stockpiles/in-site material where unexpected contamination in the form of staining/odours is identified:
  - Isolate the area and cover the surface area extent with a tarpaulin.
- For groundwater where unexpected contamination (i.e. odours & visual triggers) is identified:
  - Avoid generation of run-off and install appropriate controls to contain the groundwater and prevent the uncontrolled escape of potential contaminants of groundwater leaving the source area.
- Inform Environmental Manager and Health and Safety manager.

Environmental Manager

- Engage the services of an Environmental Consultant to assess the work area for potential contaminants.

Health and Safety Manager

- Provide advice regarding necessary PPE requirements.

Site Manager

- Implement the initial requirements specified by the Environmental and Health and Safety Managers.

Environmental Consultant Attends Site

The Environmental Consultant will investigate the type and extent of contamination at the area and evaluate if there is an immediate risk to human health or the environment.

No contamination Present

The Protocol Controller should:

- Inform workers that the suspected material is not contaminated;
- Direct workers that they may recommence work; and
- Attach relevant documentation used in the contamination assessment into the site safety plan.

Contamination Present

The Protocol Controller should:

- Implement the recommendations of the Environmental Consultant and Environmental Manager;
- Arrange necessary remediation & management measures; and/or
- Consider redesigning the work process so that the contaminated material is not disturbed.

Area Safe to Re-Enter

Once the area has been deemed by a competent person to be safe to re-enter, the Site Manager will:

- Inform Workers that the work area is safe to re-enter; and
- Include any relevant documents (e.g. further investigation results, validation reports, into the site safety plan.