13 July 2018

Lend Lease
30 The Bond, 30 Hickson Road
Millers Point NSW 2000

Attention: Mr Matthew Hill

Dear Matthew,

RE: PROPOSED EXPANSION OF CESSNOCK CORRECTIONAL CENTRE, NSW ASBESTOS IN SOIL MANAGEMENT PLAN

1 INTRODUCTION

Qualtest Laboratory NSW Pty Ltd (Qualtest) is pleased to present this Asbestos in Soil Management Plan (ASMP) for use during earthwork activities at Cessnock Correctional Centre, located on a part of Lot 3 DP76202, Lindsay Street, Cessnock NSW (the site). Asbestos containing materials (ACM) were identified in fill during previous investigation works carried out, for the proposed expansion. The location of the site is shown on Figure 1.

Two contamination assessments have been carried out on the site:

- A Preliminary Site Investigation (PSI) was completed on the site by Douglas Partners Pty Ltd (DP) in July 2016 (Ref: 81986.00R.002.Rev0, dated 6 July 2016 (DP, 2016). The DP (2016) PSI did not identify asbestos presence on site but recommended further assessment of the site;
- A Phase 2 Contamination Assessment was completed on the site by Qualtest in July 2018 (Ref: NEW18P-0117-AA, dated 2 July 2018 (Qualtest, 2018). Asbestos was detected in two samples, below the adopted human health guidelines. The location of the samples containing asbestos is shown in Figure 2:
    - Sample SS2 - Chrysotile asbestos was detected in the form of loose fibre bundles (Fibrous Asbestos - FA). The asbestos was detected at 0.00022%, which is below the adopted guideline for residential land use (0.001%); and,
    - Sample SS41 - Chrysotile and amosite asbestos was detected in a fragment of ACM (bonded asbestos). The concentration of ACM in the soil sample was calculated to be 0.0041%, which is below the adopted guideline for residential land use (0.01%).

As asbestos impacted material has been identified on the site, this ASMP has been developed and will be implemented during earthworks.

2 OBJECTIVES

The objectives of the ASMP are to:

- Identify potential risks associated with the movement and placement of asbestos impacted materials;
- Outline appropriate risk mitigation methods to reduce potential exposure to asbestos impacted materials to the environment, workers and the public;
- Outline air monitoring requirements;
- Outline clearance methodology of remaining surface soil following the removal of impacted material; and
- Long term management requirements.

3 EXCAVATION AND PLACEMENT OF ASBESTOS IMPACTED MATERIAL

The asbestos impacted material identified at sample location SS2 and SS41 will be excavated and placed under a building slab. Qualtest would recommend the following procedures for the excavation, transport and placement of the asbestos impacted materials:

- An area approximately 5m x 5m (i.e. 2.5m radius) around the sample location (i.e. SS2) would be excavated;
- The depth of impacted material will be assumed to extend to 0.1m and/or the top of the natural residual soils. This depth will be further confirmed by the asbestos clearance visual inspection, and sampling and analysis if fill materials are observed in the base of the excavation;
- The impacted material is placed beneath a building slab, outside of proposed service trench locations;
- Records are kept of the excavation and placement of the material, including date of excavation and placement, location removed from, location placed, and volume of material placed;
- Survey is undertaken of the placement location, including the corners (or edges) of the area and the top of the area;
- The location of the placement of the impacted material is recorded on a site plan which can be referenced in the event maintenance works which would disturb the material are proposed, or the area is proposed for redevelopment.

4 ASBESTOS MANAGEMENT PLAN

As asbestos (FA and ACM) has been identified on the site, an ASMP was required to be developed and implemented for the proposed excavation, movement and placement of impacted material identified on the site.

The ASMP has been prepared based on relevant sections of *How to Remove Asbestos Safely-Code of Practice* (WorkCover 2011) and Schedule B2 of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013);

4.1 WorkCover 2011

"*How to Remove Asbestos Safely-Code of Practice*" (WorkCover 2011) recommends the following control measures for the removal of asbestos in soil:

- Preparation of an asbestos management plan for the site;
- Setting the boundaries of the contamination as assessed by an independent licensed asbestos assessor or competent person;
- Ensuring there is minimal disturbance of the contaminated soil until the asbestos management procedures have been implemented;
- Isolating and securing the removal work site using signs and barriers;
- Controlling dust with dust suppression techniques (such as water and wetting agents);
- Providing Personal Protection Equipment (PPE) based on the level of contamination and the control measures implemented;
- Sampling and/or air monitoring;
- Providing education and training for workers on hazards and safe work practices to minimise airborne dust exposure; and
- Implementing decontamination procedures for workers and equipment.

4.2 Works Boundaries and Exclusion Zone

Work boundaries and exclusion zones will be set up surrounding areas of identified asbestos and the proposed placement area during placement of identified asbestos impacted materials. The exclusion zone will be a minimum 5m area beyond the works area. Star pickets, or similar, are not able to be used within the gaol grounds, and therefore the boundary of the exclusion will be supervised by the asbestos removal contractor to prevent access by unauthorised persons.

Personnel involved in the works should receive induction to the mitigation controls and methodology contained in this ASMP. Only inducted personnel should be permitted inside the exclusion zone until the area is cleared.

It is noted that additional areas of asbestos impacted materials (not previously identified) may be present on the site. If asbestos impacted materials are identified during excavation and placement works in areas not previously identified, these soils will be managed in accordance with an Unexpected Finds Protocol, refer to Section 7, below.

4.3 Dust Minimisation

The earthworks will involve excavation, loading and trucking of soils, which could potentially create and mobilise friable asbestos, posing contamination hazards to the surrounding environment, the workers and to the public. The following management measures should be implemented to prevent dust impacts:

- A communications and complaints register should be kept on site to ensure that concerns of local residents and workers are recorded and addressed;
- General vehicular and personnel movements on the site must remain outside the exclusion zone;
- Excavated soils should be watered as required to minimise the potential for dust generation;

- Works should be delayed during periods of high winds, to minimise the possibility of ACM containing dust migration from the exclusion area;
- This ASMP should be revised if contaminated material is to be taken off site;
- Vehicular movements entering and exiting the exclusion zone should be kept to a minimum;
- Machinery should be floated onto and off the site;
- Machinery and vehicle tracks and tyres should be washed down, and free of debris, prior to entering the exclusion zone; and
- Machinery and vehicle tyres should be washed down prior to leaving the exclusion zone.

4.4 Air Monitoring

According to Safe Work Australia *How to safely remove asbestos* - Code of Practice (2011), air monitoring should be considered where the asbestos removal work is being undertaken in or next to a public location, or where there has been uncontrolled disturbance of asbestos at the workplace. Air monitoring should involve sampling airborne asbestos fibres to assist in assessing exposure to asbestos and the effectiveness of implemented control measures.

Excavation and placement of asbestos impacted materials carries a risk of disturbing and mobilising asbestos fibres as a result of the presence of fibrous asbestos (FA) and incidental crushing of bonded ACM by machinery. To assess the risk to site workers and the public, it is recommended that air monitoring be carried out at four locations. It is noted that air monitoring will only be required during the excavation and placement of asbestos impacted material.

Four asbestos fibre in air monitoring pumps will be set up and operated surrounding the exclusion zone/ excavation area in accordance with *Guidance Note: The Membrane Filter Method For Estimating Airborne Asbestos Fibres,* 2nd Edition [NOHSC:3003(2005)]. The pumps will be set up before the start of works each day (6:45am-700am). The pump filters will be collected at the end of the day (no later than 3:30pm to ensure delivery to the laboratory).

Results should be requested next working day from the laboratory. The four monitoring locations will be established at the beginning of each day, subject to the weather forecast and local conditions.

4.5 Personal Protective Equipment

During the earthworks in the areas where asbestos impacted material was identified, all personnel working within exclusion zone are required to use the following PPE as a minimum. It is noted that asbestos specific PPE will only be required during the excavation and placement of asbestos impacted material.

- Disposable coveralls and gloves;
- P2 rated dusk mask; and
- Protective footwear.

Personal protective clothing should be made from materials that provide protection against fibre penetration and not from wool or other materials that attract fibrous dusts. Plant operators are not required to wear the PPE in the exclusion zone if the cabin's air conditioning is fitted with a HEPA filter and the operator remains in the cabin at all times with the doors and windows closed.

At the end of the asbestos emplacement work and upon leaving the exclusion zone, all PPE must be disposed of as asbestos waste and stored in sealed double bags before being removed from the site and appropriately disposed. PPE should be thoroughly wet before being placed in bags.

5 ASBESTOS CLEARANCE

Asbestos clearance works will be performed by suitably qualified personnel. Asbestos clearance works will consist of:

- Following the removal of contaminated fill the resulting excavation base (natural ground surface) will be validated by visual inspection. The excavation base(s) will be divided into a grid, and each grid will be searched from one side of the square to the other, in two directions; and,
- Observed ACM (if any) will be collected, double wrapped and sealed for appropriate disposal.

If following the removal of asbestos impacted material, the resulting excavation base is not natural soil (i.e. excavation base remains in fill material) the following clearance works will be carried out:

- The base of the excavation will be divided into a 10m x 10m grid;
- Each grid will be uniquely identified and recorded using a hand-held GPS;
- Working east to west, then north to south, the surface of each grid will be searched for ACM;
- The search will comprise raking of the surface in one direction and in a second direction at 90° to the first,
- Where the surface is too hard for raking to be effective, the search will be carried out by visual inspection only. Each grid will be searched from one side of the square to the other, in two directions;
- Observed ACM will be collected, double wrapped and sealed for appropriate disposal;
- Any remaining loose material created by the works will be raked, along with the exposed ground surface, in two directions at 90^0;
- Laboratory samples, a minimum of 250g each, will be collected from the floor of the stockpiles and sealed in in a double-bagged sealed plastic zip lock bags;
- The samples will be transported to the laboratory under chain of custody conditions; and,
- The samples will be analysed for asbestos fibres by a NATA accredited laboratory, by the Australian Standard AS4964-2004, or an equivalent method.

6 REPORTING

Following asbestos impacted material excavation works a Clearance Report will be produced, which will describe the work undertaken, a summary of the air monitoring and include a statement on the presence/absence of ACM in areas assessed following removal of asbestos impacted material.

7 UNEXPECTED FIND PROTOCOL

A contingency plan is provided below in Table 7.0, for the management of unexpected finds.

Table 7.0 –Unexpected Finds

Unexpected Conditions	Proposed Action
During the remediation works, ACM is encountered in areas not previously identified on the site (based on previous assessment reports).	Stop works and implement Section 4.3 to 4.5 of the ASMP

8 LIMITATIONS

This ASMP was prepared with the objective of managing the movement of soil containing asbestos from one portion of the site to another, and is not suitable to be used for the removal of asbestos from the site.

No warranty, expressed or implied, is made as to the information and professional advice included in this ASMP. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation.

If you have any further questions regarding this report, please do not hesitate to contact the undersigned.

For and on behalf of Qualtest Laboratory (NSW) Pty Ltd.

Emma Coleman
Senior Environmental Scientist

Attachments:

Figure 1 – Site Location Plan
Figure 2 – Sample locations and Asbestos Detected

LEGEND:

Approx. location of site

Figure based on image taken from web portal Nearmaps (http://maps.au.nearmap.com/2018).

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Client:	Lend Lease	Drawing No:	FIGURE 1
Project:	Cessnock Gaol 240 Minimum	Project No:	NEW18P-0117
Location:	Cessnock Gaol, Cessnock	Scale:	N.T.S.
Title:	Site Location	Date:	8/06/2018

Figure based on image taken from Google Earth.

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Client:	Lend Lease	Drawing No:	FIGURE 2
Project:	Cessnock Gaol 240 Minimum	Project No:	NEW18P-0117
Location:	Cessnock Gaol, Cessnock	Scale:	N.T.S.
Title:	Sample Locations & Asbestos Detected	Date:	14/06/2018