

Prepared for:

**Landcom**

**Level 2, 330 Church Street  
Parramatta NSW 2124**

# Potts Hill Western Precinct Contamination Summary

## Final

AECOM

7 October 2009

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### Potts Hill Western Precinct Contamination Summary

7 October 2009

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Original	<b>AECOM</b> <b>Project File</b> Level 5, 828 Pacific Highway Gordon NSW 2072

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By

**AECOM Australia Pty Ltd**

ABN: 20 093 846 925

Level 5, 828 Pacific Highway Gordon NSW 2072

PO Box 726 Pymble NSW 2073

Ph: +61 2 8484 8999 Fax: +61 2 8484 8989




**Alex Latham**

Senior Associate Environmental Scientist

Technical Peer Reviewer:

Date:

for 	7/10/2009
<b>Frank Mohen</b> NSW/Sydney Operations Manager	

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## Figure

Figure F1: Potts Hill Subdivision Boundaries and Contamination Zones

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## 1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by Landcom to provide contamination investigation and remediation scopes and methodologies for the Western Precinct of the Potts Hill Reservoir Facility.

The Western Precinct comprises approximately 22.6 hectares of land that is proposed to become Lot 106. The land is currently identified as Zones 1A, 1B, 1C, 2, 3 and 11A, as shown on Figure F1. AECOM has provided contamination assessment services for all Zones except 2 and 11A.

Zone 11A is understood to be suitable for the proposed land use. Zone 2 has not been identified to be significantly affected with contaminants.

This report presents a brief summary of the contamination assessment works undertaken at Zones 1A, 1B, 1C, 2 and 3 and the anticipated remediation works that will be required to ensure suitability of the Western Precinct for the intended future residential and part recreational/open space land use. AECOM understands that this report will comprise part of an application to the Department of Planning to facilitate commencement of demolition and remediation activities.

The Western Precinct is currently owned by Sydney Water Corporation (SWC). Landcom will undertake part of the redevelopment, namely ground improvement works and installation of services and utilities.

A NSW EPA accredited (Land Contamination) Auditor, Mr Graeme Nyland of Environ Australia Pty Ltd (the Auditor), has been engaged by Landcom to provide audit services associated with the redevelopment project.

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## 2.0 Background

A Phase I Environmental Site Assessment (ESA) of the entire Reservoir Facility was completed by SWC Environment & Innovation Division in July 2003. Subsequent to the Phase I ESA, intrusive investigations and sample analysis programs (i.e. Phase II ESAs), were completed by URS Corporation Pty Ltd (URS) and Coffey Environments Pty Ltd (Coffey). The Auditor has reviewed the data obtained from these investigations.

AECOM's contamination assessments were subsequently undertaken to gain a better understanding of the extent of some identified soil contamination, and also to enable the formulation of Remediation Action Plans (RAPs) that will be required to ensure suitability of the relevant Zones for the proposed land-uses.

The contamination investigations have been undertaken with reference to relevant NSW Department of Climate Change (DECC) and Environment Protection Authority (EPA) published guidelines. RAPs will be completed in accordance with the requirements of DECC/EPA guidelines and State Environmental Planning Policy (SEPP) 55.

The Auditor has reviewed AECOM's contamination investigation reports and considers that sufficient data is available to complete the RAPs. The Auditor will review AECOM's draft RAPs and after addressing any relevant comments, these will be issued as Final documents.

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### 3.0 Contamination Overview

A large volume of clay and ripped shale bedrock, sourced from reservoir construction activities, is present over much of the Western Precinct. In some zones, such as 1C and 3, SWC historical activities (e.g. depot operations, equipment and materials storage, stockpiling of fill materials of unknown origin etc) has resulted in some contamination. The identified contamination is considered typical of former depot-type sites with some uncontrolled fill materials. The remediation measures anticipated to be required are expected to entail conventional methodologies.

The URS and Coffey investigations comprised the collection of fill and soil samples for subsequent laboratory analysis to evaluate concentrations of contaminants of potential concern (COPC). The URS investigations included an analysis regime, for various COPC, including total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes (BTEX), organochlorine and organophosphorus pesticides (OCP and OPP), polychlorinated biphenyls (PCB), asbestos, herbicides, 'solvents', polycyclic aromatic hydrocarbons (PAH) and a suite of eight heavy metals. On the basis of the URS results, the Coffey and AECOM investigations were undertaken on a more targeted basis.

In summary, the investigations have identified the following:

- **Zone 1A:** the site is covered in reservoir-derived fill material to an approximate average depth of 1.6 m. Some TPH contamination was identified within the fill material. The identified contamination can be excavated and remediated on-site or disposed to landfill, and the Site can be made suitable for the proposed residential land-use. Remediation would be undertaken in accordance with a RAP;
- **Zone 1B:** URS and Coffey did not identify soil contamination in their assessments. Some potential contaminant sources are present, such as transformers, former vehicle servicing pits and dis-used oil/water separators. It is envisaged that excavation and validation sampling of these features will be a relatively straight-forward process;
- **Zones 1C and 3:** large volumes of reservoir-derived fill are present, and a surface veneer (typically to 1 to 1.5 m thick) of filling material affected with TPH, PAH, metals and asbestos (to a lesser extent). The identified contamination will be remediated in accordance with RAPs, which are expected to comprise excavation and disposal to landfill. After completion of remediation, bulk earthworks will be undertaken to re-contour the Sites. The bulk earthworks will need to be undertaken in accordance with a construction phase Environmental Management Plan (EMP) and/or Unexpected Finds Protocol (UFP). The Auditor should approve the EMP/UFP prior to commencement of bulk earthworks;
- **Zone 2:** no significant soil contamination was identified by URS or Coffey in their assessments. Some additional assessment will be required after demolition of existing buildings. Based on historical information and Site use, the potential for significant soil contamination to be present is considered to be low; and
- **Zone 11A:** AECOM understands that URS and Coffey did not identify soil contamination in their investigations and that the Auditor is currently providing a Site Audit Statement for this Zone.

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## 4.0 Anticipated Remediation Methodologies

As stated in Section 2.0, AECOM has not issued final RAPs for any of the subject Zones in the Western Precinct. However, based on the information presented in the contamination investigation reports and draft RAPs, remediation is anticipated to comprise a combination the following methodologies:

- Excavation of affected fill materials with subsequent disposal to an appropriately licensed landfill facility;
- Excavation of affected fill materials and on-site remediation with subsequent beneficial re-use after the material is validated as suitable for use;
- Excavation of fill materials affected with inclusions of rubbish materials (e.g. concrete, steel, general refuse, timber etc). Excavated materials will be screened, sorted and sifted to remove these “aesthetic” impacts. Separated rubbish materials will be processed by commercial recyclers where possible, or disposed to an appropriately licensed landfill facility. The screened/sorted/sieved fill materials will be beneficially re-used wherever possible, after it is validated as suitable for the intended land use. Materials not suitable for the intended land use will be disposed to an appropriately licensed landfill facility.

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## 5.0 Conclusions

Based on the available soil contamination data, AECOM considers that the relevant Zones can be rendered suitable for the proposed land use.

The Auditor will provide an independent review and final 'sign-off' on the land-use suitability. The final 'sign-off' would comprise the issue of a Site Audit Statement for each relevant Zone, in accordance with the *Contaminated Land Management Act 1997*.

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## Figure

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Azerbaijan	+994 12 4975881
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From our offices across Australia and New Zealand, we leverage AECOM's global reach while providing a unique blend of local knowledge, innovation and technical excellence combined with a personal commitment to meeting our clients' specific needs.

Together, AECOM forms a strong global network of more than 43,000 professionals united by a common purpose to enhance and sustain the world's built, natural and social environments.

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