Site Audit Report
0503-1301-A1
0503-1301-A2

Eastern Creek Business Hub
Rooty Hill Road South, Rooty Hill, NSW

11 August 2017

51259/109504 (Rev A)

JBS&G Australia Pty Ltd

www.jbsg.com.au

NSW Site Auditor Scheme
SITE AUDIT STATEMENT

A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.

This form was approved under the Contaminated Land Management Act 1997 on 31st October 2012. For more information about completing this form, go to Part IV.

PART I: Site audit identification

Site audit statement no. **0503-1301-A1**

This site audit is a **statutory audit**/~~non-statutory audit~~***** within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details (as accredited under the *Contaminated Land Management Act 1997*)

Name	**Andrew Lau**	Company	**JBS&G**		
Address	**Level 1, 50 Margaret Street**				
	SYDNEY	**NSW**		Postcode	**2000**
Phone	**02 8245 0300**	Fax	**02 8245 0399**		

Site Details

Address	**Rooty Hill Road South (Western Sydney Parklands)**				
	ROOTY HILL	**NSW**		Postcode	**2766**

Property description *(attach a list if several properties are included in the site audit)*

- Part Lot 1 DP1103025
- Lot 100 DP882326
- Part Lot 2 & 3 Section A DP8681
- Lot 3 to Lot 5 Section B DP8681
- Lot 1 DP135665
- Lots 1 & 13 Section B DP 8681
- Lots 1 to lot 6, lot 8 and lot 9 DP830836
- Part Lot 7 and part lot 10 DP830836
- Lots 2 & 3 DP1041487
- Lot A DP358346
- Lot 1, Lots 3 & 8 DP31130
- Lots 11, 12 and 14 DP882325
- Lots 1 & 2 DP1069269
- Lot 14 DP1051904
- Lots 11, 12 and 50 DP1041487
- Beggs Road (southern half) – Public Crown Subdivision Land

- Beggs Road (northern half) – Road being the residue of Land in Certificate of Title Volume 826 Folio 243
- Belmore Road from intersection with Beggs Road to its intersection with Great Western Hwy (western half) – Road being the residue of Land in Certificate of Title Volume 826 Folio 243
- Belmore Road from intersection with Beggs Road to its intersection with Great Western Hwy (eastern half) – Public Crown Subdivision Road.
- Belmore Road from its intersection with Beggs Road to its extent to north-east (Western Half) – Road being the Residue of Land in Certificate of Title Volume 147 Folio 41.
- Belmore Road from its intersection with Beggs Road to its extent to north-east
- (Eastern Half) – Public Crown Reserved Road Easement for Gas Pipeline – Easement for Pipeline (Vide Q916928).

Local Government Area **Blacktown City Council**

Area of Site (eg. hectares) **34 hectares** Current zoning **SEPP (WSP) 2009: UL-Western Parklands**

To the best of my knowledge, the site ~~is~~**/is not*** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

Declaration/Order/Agreement/Proposal/Notice* no(s) N/A

Site audit commissioned by

Name **George Henien** Company **Hansen Yuncken Pty Ltd (on behalf of Western Sydney Parklands Trust)**

Address **PO Box 409, Mascot NSW 2020**

Postcode **2010**

Phone **0419 535 103** Fax **02 9770 7601**

Name and phone number of contact person (if different from above) **N/A**

Purpose of site audit

☑ A. To determine land use suitability (please specify intended use[s])

Commercial / industrial including bulk goods; storage and retail use; detention basins and revegetation; and roadways, utility easements, stormwater drainage and retention.

OR

☐ ~~B(i) To determine the nature and extent of contamination, and/or~~

☐ ~~B(ii) To determine the appropriateness of an investigation/remedial action/management plan*, and/or~~

☐ ~~B(iii) To determine if the land can be made suitable for a particular use or uses by implementation of a specified **remedial action plan**/management plan* (*please specify intended use[s]*)~~

Information sources for site audit

Consultancy(ies) which conducted the site investigation(s) and/or remediation:

Douglas Partners Pty Ltd

CDM Smith Australia Pty Ltd

Consara Pty Ltd

Coffey Environments Australia Pty Ltd

WSP Australia Pty Ltd

Title(s) of report(s) reviewed

- *Report on Phase 1 Contamination Assessment, Proposed Redevelopment of Parcel 2.4, Western Sydney Parklands, Rooty Hill Road South, Doonside, Douglas Partners, November 2009 (DP 2009).*
- *Sampling, Analytical and Quality Plan, Eastern Creek Business Hub, Rooty Hill Road South, Rooty Hill NSW, CDM Smith, August 2012 (CDM 2012).*
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- *Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub, Consara Pty Ltd, 25 June 2013, (Consara 2013b).*
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- *RAP Addendum – Relocation of Asbestos Containment Cell Eastern Creek Business Hub Development Site, Coffey, 12 October 2016 (Coffey 2016).*
- *Review and Comment on Proposed Validation Methodology and Remediation Activity Asbestos Remediation – Eastern Creek Business Hub Development Site, Coffey, 1 March 2017 (Coffey 2017).*
- *Western Sydney Parklands Trust, Eastern Creek Business Hub – Validation Report, Beggs Road, Rooty Hill, NSW, WSP, August 2017 (WSP 2017a).*
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- *Draft Western Sydney Parklands Trust Eastern Creek Business Hub – Long-term Environmental Management Plan, Beggs Road, Rooty Hill, NSW, WSP, Julye 2017 (WSP 2017d).*
- *Draft Western Sydney Parklands Trust, Eastern Creek Business Hub – Development Phase Environmental Management Plan, Beggs Road, Rooty Hill, NSW, WSP, July 2017 (WSP 2017e).*
- *Response to Auditor Comments provided on 26 July 2017, Eastern Creek Business Hub Validation Reports and Management Plans, WSP, 31 July 2017 (WSP 2017f).*
- *Western Sydney Parklands Trust Eastern Creek Business Hub - Site Environmental Management Plan, Beggs Road, Rooty Hill, NSW, WSP, August 2017 (WSP 2017g).*

Other information reviewed (including previous site audit reports and statements relating to the site)

- *Category 1 QHSE Plan – Eastern Creek Business Hub, Beggs Road, Eastern Creek, Enviropacific Services, issued 25 January 2017.*
- *Work Procedure 01 – Site Establishment and Preliminaries, Enviropacific Services, issued 23 January 2013.*
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- *Work Procedure 03 – Asbestos Management Plan and Asbestos Removal Control Plan (ARCP), Rooty Hill, NSW, Enviropacific Services, issued 25 January 2017.*
- *Email correspondence between the client, Luke Wilson, Project Manager, Western Sydney Parklands Trust (WSPT) and the auditor, Andrew Lau, between March 2017 and June 2017. Specific email correspondence relates to testpitting methodology for 'high likelihood areas' (10 March 2017); validation methodologies for the Proposed Childcare Centre (26 April 2017); Validation methodology for Area L (23 May 2017);*

testpitting strategy in Friable Asbestos areas, Area K and Area W (1 May 2017); and cell boundary locations (16 June 2017).

- *Email correspondence from Luke Wilson, Project Manager, WSPT, issued on 1 August 2017.*
- *Site Audit Report, Eastern Creek Business Hub Rooty Hill Road South Rooty Hill, JBS42270-53571, JBS Environmental Pty Ltd, April 2013 (JBS 2013a); and*
- *Site Audit Statement #0503-1112, Andrew Lau of JBS Environmental Pty Ltd, 12 April 2013.*
- *Site Audit Report, Eastern Creek Business Hub Rooty Hill Road South Rooty Hill, JBS42270-54924, JBS&G, July 2013 (JBS 2013b).*
- *Site Audit Statement #0503-1301, Andrew Lau of JBS&G, 12 July 2013.*
- *Site Audit Report, Eastern Creek Business Hub Rooty Hill Road, Rooty Hill NSW, JBS&G50877-101274, JBS&G, 4 August 2015 (JBS&G 2015)*
- *Site Audit Statement #0503-1301, Andrew Lau of JBS&G, 4 August 2014.*

Site audit report

Title **Site Audit Report, Eastern Creek Business Hub Rooty Hill Road, Rooty Hill NSW**

Report no. **51259-109504 (Rev A)** Date **11 August 2017**

PART II: Auditor's findings

Please complete either Section A or Section B, **not** both. *(Strike out the irrelevant section.)*

Use Section A where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land use(s).

Use Section B where the audit is to determine the nature and extent of contamination and/or the appropriateness of an investigation or remedial action or management plan and/or whether the site can be made suitable for a specified land use or uses subject to the successful implementation of a remedial action or management plan.

Section A

☑ **I certify that, in my opinion, the site is SUITABLE for the following use(s)** *(tick all appropriate uses and strike out those not applicable)*:

- ☐ ~~Residential, including substantial vegetable garden and poultry~~
- ☐ ~~Residential, including substantial vegetable garden, excluding poultry~~
- ☐ ~~Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~
- ☐ ~~Day care centre, preschool, primary school~~
- ☐ ~~Residential with minimal opportunity for soil access, including units~~
- ☐ ~~Secondary school~~
- ☐ ~~Park, recreational open space, playing field~~
- ☑ Commercial/industrial
- ☑ Other (please specify) - Commercial / industrial including bulk goods; storage and retail use; detention basins and revegetation; and roadways, utility easements, stormwater drainage and retention.

~~**subject to compliance with the following environmental management plan** *(insert title, date and author of plan)* **in light of contamination remaining on the site:**~~

Western Sydney Parklands Trust Eastern Creek Business Hub - Site Environmental Management Plan, Beggs Road, Rooty Hill, NSW, WSP, August 2017 (WSP 2017g).

~~**OR**~~

☐ ~~I certify that, in my opinion, the site is NOT SUITABLE for any use due to the risk of harm from contamination.~~

Section B

Purpose of the plan[1] which is the subject of the audit

I certify that, in my opinion:

☐ the nature and extent of the contamination HAS/HAS NOT* been appropriately determined

AND/OR

☐ the investigation/remedial action plan/management plan* IS/IS NOT* appropriate for the purpose stated above

AND/OR

☐ the site CAN BE MADE SUITABLE for the following uses *(tick all appropriate uses and strike out those not applicable)*:

- ☐ Residential, including substantial vegetable garden and poultry
- ☐ Residential, including substantial vegetable garden, excluding poultry
- ☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☐ Day care centre, preschool, primary school
- ☐ Residential with minimal opportunity for soil access, including units
- ☐ Secondary school
- ☐ Park, recreational open space, playing field
- ☐ Commercial/industrial
- ☐ Other (please specify) – ……

if the site is **remediated**/managed* in accordance with the following remedial action plan/management plan*

subject to compliance with the following condition(s):

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Overall comments

- The site investigation works and remediation and validation works are considered to have met the requirements of the Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition) (DEC 2006).
- The site investigation activities identified historically imported and/or buried fill and waste materials within various areas of the site which contained reworked silty clay, demolition wastes, and fragments of asbestos containing materials. The levels of asbestos in fill/waste soils in parts of the site were considered to require remediation or management to make the site suitable for the proposed uses.
- Given the nature of the identified contamination (i.e., asbestos), there was no evidence of potential or actual migration of contaminants from the site which may result in unacceptable risks to surrounding human or ecological receptors.
- The revised Phase 1 Early Works RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016) prepared for the site addressed the identified contamination issues, with the remediation approach checked by the auditor and found to be: technically feasible; environmentally justifiable given the nature and extent of the identified contamination; and consistent with relevant laws, policies and guidelines.
- The remediation works completed at the site included the removal of known asbestos impacted in 'high' likelihood areas, as defined in the RAP (Coffey 2015). All asbestos impacted soils were excavated and placed within the capped containment cells, Cell #1 and Cell # 2, located within the north-eastern corner of the site. The containment cells were suitably constructed, as per the requirements of the RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016).
- The auditor considers that the remediation and validation works were generally completed in accordance with the requirements of the revised Phase 1 Early Works RAP (Coffey 2015), audit conditions as stated in SAS dated 4 August 2015 (JBS&G 2015), Addendum to the RAP (Coffey 2016) and auditor approvals.
- Whilst the remediation works have been documented as being successful in addressing the known areas of impact, as with any site where there has been historic uncontrolled filling/burial of fill materials including demolition rubble, the potential exists for unexpected asbestos to remain at the site. Whilst the auditor is satisfied that such unexpected impacts do not affect the suitability of the site for the proposed use, this residual potential risk has been adequately and appropriately addressed through the development of an EMP for the site (WSP 2017g).
- The suitability of the site for the proposed landuses is therefore subject to the implementation of the EMP prepared for the site (WSP 2017g). The auditor is satisfied that the EMP will be reasonably able to be legally enforceable, as the audit is a requirement of the development consent, hence the audit statement and accompanying EMP will be enforceable under the consent. A copy of the audit statement and accompanying EMP will also be provided to the local council for inclusion on the relevant s.149 certificates, based on current requirements, so the auditor is also satisfied that there is a public notification mechanism for the EMP.

PART III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority under the *Contaminated Land Management Act 1997* (Accreditation No. **0503**).

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Draft
11 August 2017

PART IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remedial action or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use(s) of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A or Section B of Part II, **not** both.

In **Section A** the auditor may conclude that the land is *suitable* for a specified use(s) OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further remediation or investigation of the site was needed to render the site fit for the specified use(s). Any **condition** imposed should be limited to implementation of an environmental management plan to help ensure the site remains safe for the specified use(s). The plan should be legally enforceable: for example a requirement of a notice under the *Contaminated Land Management Act 1997* (CLM Act) or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of the *Environmental Planning and Assessment Act 1979.*

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

In **Section B** the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or whether land can be made suitable for a particular land use or uses upon implementation of a remedial action or management plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

In **Part III** the auditor certifies his/her standing as an accredited auditor under the CLM Act and makes other relevant declarations.

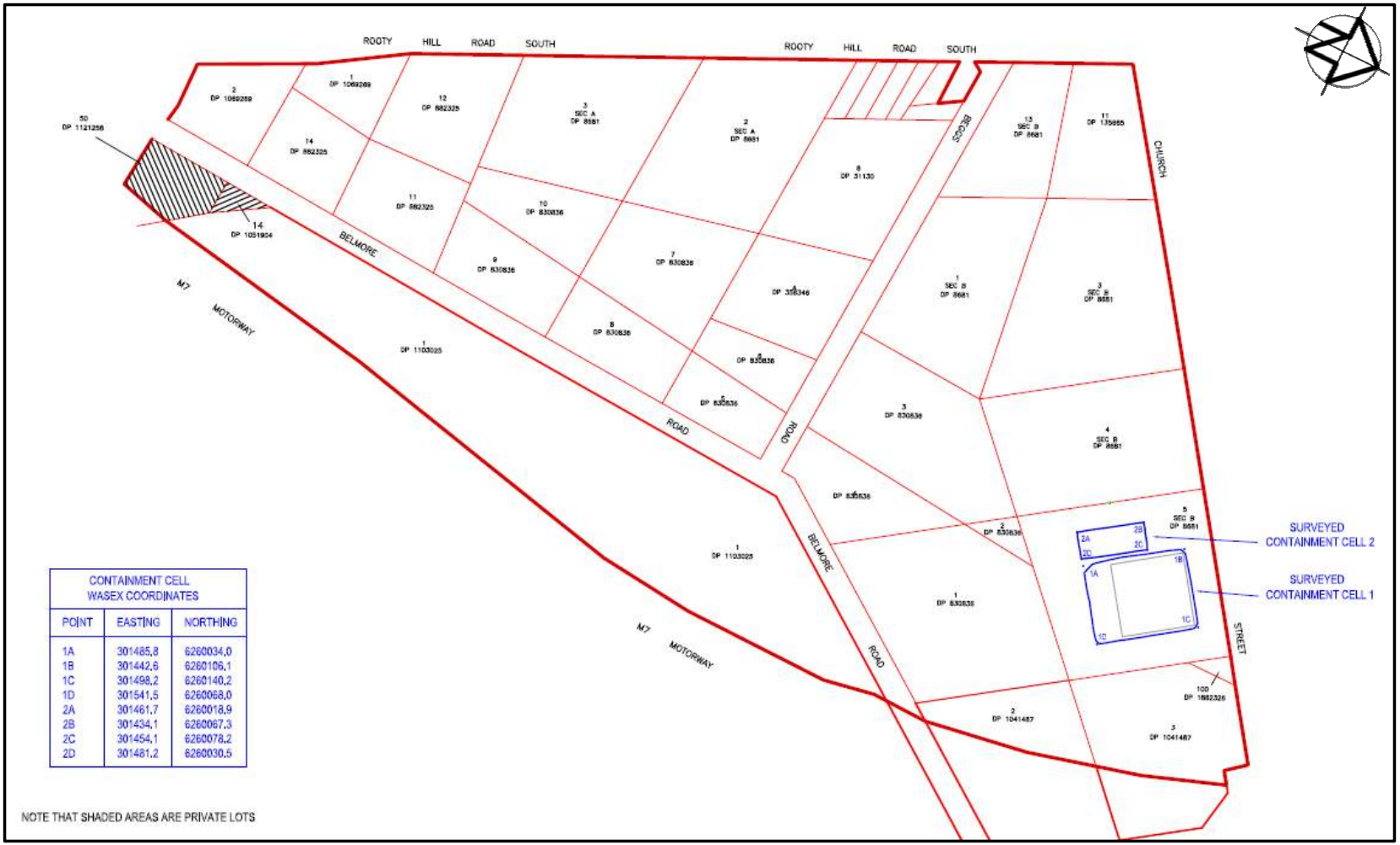
Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to:

EPA (NSW)
Contaminated Sites Section
PO Box A290, SYDNEY SOUTH NSW 1232
nswauditors@epa.nsw.gov.au

AND

the **local council** for the land which is the subject of the audit.



Base Map Source – Total Survey Solutions, containment Cell Overlayed With Buildings, Plan No. 1014, 2017

LEGEND

Site boundary

Figure 4 – Site Survey Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

NSW Site Auditor Scheme
SITE AUDIT STATEMENT

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PART I: Site audit identification

Site audit statement no. **0503-1301-A2**

This site audit is a **statutory audit**/~~non-statutory audit~~***** within the meaning of the *Contaminated Land Management Act 1997*.

Site auditor details (as accredited under the *Contaminated Land Management Act 1997*)

Name	**Andrew Lau**	Company	**JBS&G**		
Address	**Level 1, 50 Margaret Street**				
	SYDNEY	**NSW**		Postcode	**2000**
Phone	**02 8245 0300**	Fax	**02 8245 0399**		

Site Details

Address	**Rooty Hill Road South (Western Sydney Parklands)**				
	ROOTY HILL	**NSW**		Postcode	**2766**

Property description *(attach a list if several properties are included in the site audit)*

- Part Lots 2 and 3 Section A DP 8681 and Part Lots 7 and 10 DP830836

Local Government Area	**Blacktown City Council**		
Area of Site (eg. hectares)	**34 hectares**	Current zoning	**SEPP (WSP) 2009: UL-Western Parklands**

To the best of my knowledge, the site ~~is~~**/is not*** the subject of a declaration, order, agreement, proposal or notice under the *Contaminated Land Management Act 1997* or the *Environmentally Hazardous Chemicals Act 1985*.

Declaration/Order/Agreement/Proposal/Notice* no(s) **N/A**

Site audit commissioned by

Name	**George Henien**	Company	**Hansen Yuncken Pty Ltd (on behalf of Western Sydney Parklands Trust)**
Address	**PO Box 409, Mascot NSW 2020**		
		Postcode	**2010**
Phone	**0419 535 103**	Fax	**02 9770 7601**

Name and phone number of contact person (if different from above) **N/A**

Purpose of site audit

☑ A. To determine land use suitability (please specify intended use[s])

Childcare Centre

OR

~~☐ B(i) To determine the nature and extent of contamination, and/or~~

~~☐ B(ii) To determine the appropriateness of an investigation/remedial action/management plan*, and/or~~

~~☐ B(iii) To determine if the land can be made suitable for a particular use or uses by implementation of a specified **remedial action plan**/management plan* (*please specify intended use[s]*)~~

Information sources for site audit

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Site audit report

Title **Site Audit Report, Eastern Creek Business Hub Rooty Hill Road, Rooty Hill NSW**

Report no. **51259-109504 (Rev A)** Date **11 August 2017**

PART II: Auditor's findings

Please complete either Section A or Section B, **not** both. *(Strike out the irrelevant section.)*

Use Section A where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land use(s).

Use Section B where the audit is to determine the nature and extent of contamination and/or the appropriateness of an investigation or remedial action or management plan and/or whether the site can be made suitable for a specified land use or uses subject to the successful implementation of a remedial action or management plan.

Section A

☑ **I certify that, in my opinion, the site is SUITABLE for the following use(s)** *(tick all appropriate uses and strike out those not applicable)*:

- ~~☐ Residential, including substantial vegetable garden and poultry~~
- ~~☐ Residential, including substantial vegetable garden, excluding poultry~~
- ~~☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry~~
- ☑ Day care centre, preschool, primary school
- ☑ Residential with minimal opportunity for soil access, including units
- ☑ Secondary school
- ☑ Park, recreational open space, playing field
- ☑ Commercial/industrial
- ☑ Other (please specify) – Commercial / industrial including bulk goods; storage and retail use; detention basins and revegetation; and roadways, utility easements, stormwater drainage and retention.

~~**subject to compliance with the following environmental management plan** *(insert title, date and author of plan)* **in light of contamination remaining on the site:**~~

Western Sydney Parklands Trust Eastern Creek Business Hub - Site Environmental Management Plan, Beggs Road, Rooty Hill, NSW, WSP, August 2017 (WSP 2017g).

~~**OR**~~

~~☐ I certify that, in my opinion, the site is NOT SUITABLE for any use due to the risk of harm from contamination.~~

Section B

Purpose of the plan[1] which is the subject of the audit

I certify that, in my opinion:

☐ the nature and extent of the contamination HAS/HAS NOT* been appropriately determined

AND/OR

☐ the investigation/remedial action plan/management plan* IS/IS NOT* appropriate for the purpose stated above

AND/OR

☐ the site CAN BE MADE SUITABLE for the following uses *(tick all appropriate uses and strike out those not applicable)*:

- ☐ Residential, including substantial vegetable garden and poultry
- ☐ Residential, including substantial vegetable garden, excluding poultry
- ☐ Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- ☐ Day care centre, preschool, primary school
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- ☐ Commercial/industrial
- ☐ Other (please specify) – ……

if the site is **remediated**/managed* in accordance with the following remedial action plan/management plan*

subject to compliance with the following condition(s):

[1] For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

Overall comments

- The site investigation works and remediation and validation works are considered to have met the requirements of the Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition) (DEC 2006).
- The site investigation activities identified historically imported and/or buried fill and waste materials within various areas of the site which contained reworked silty clay, demolition wastes, and fragments of asbestos containing materials. The levels of asbestos in fill/waste soils in parts of the site were considered to require remediation or management to make the site suitable for the proposed uses.
- Given the nature of the identified contamination (i.e., asbestos), there was no evidence of potential or actual migration of contaminants from the site which may result in unacceptable risks to surrounding human or ecological receptors.
- The revised Phase 1 Early Works RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016) prepared for the site addressed the identified contamination issues, with the remediation approach checked by the auditor and found to be: technically feasible; environmentally justifiable given the nature and extent of the identified contamination; and consistent with relevant laws, policies and guidelines.
- The remediation works completed at the site included the removal of known asbestos impacted in 'high' likelihood areas, as defined in the RAP (Coffey 2015). All asbestos impacted soils were excavated and placed within the capped containment cells, Cell #1 and Cell # 2, located within the north-eastern corner of the site. The containment cells were suitably constructed, as per the requirements of the RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016).
- The auditor considers that the remediation and validation works were generally completed in accordance with the requirements of the revised Phase 1 Early Works RAP (Coffey 2015), audit conditions as stated in SAS dated 4 August 2015 (JBS&G 2015), Addendum to the RAP (Coffey 2016) and auditor approvals.
- Whilst the remediation works have been documented as being successful in addressing the known areas of impact, as with any site where there has been historic uncontrolled filling/burial of fill materials including demolition rubble, the potential exists for unexpected asbestos to remain at the site. Whilst the auditor is satisfied that such unexpected impacts do not affect the suitability of the site for the proposed use, this residual potential risk has been adequately and appropriately addressed through the development of an EMP for the site (WSP 2017g).
- The suitability of the site for the proposed landuses is therefore subject to the implementation of the EMP prepared for the site (WSP 2017g). The auditor is satisfied that the EMP will be reasonably able to be legally enforceable, as the audit is a requirement of the development consent, hence the audit statement and accompanying EMP will be enforceable under the consent. A copy of the audit statement and accompanying EMP will also be provided to the local council for inclusion on the relevant s.149 certificates, based on current requirements, so the auditor is also satisfied that there is a public notification mechanism for the EMP.

PART III: Auditor's declaration

I am accredited as a site auditor by the NSW Environment Protection Authority under the *Contaminated Land Management Act 1997* (Accreditation No. **0503**).

I certify that:

- I have completed the site audit free of any conflicts of interest as defined in the *Contaminated Land Management Act 1997,* and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Contaminated Land Management Act 1997* for wilfully making false or misleading statements.

Draft
11 August 2017

PART IV: Explanatory notes

To be complete, a site audit statement form must be issued with all four parts.

How to complete this form

Part I identifies the auditor, the site, the purpose of the audit and the information used by the auditor in making the site audit findings.

Part II contains the auditor's opinion of the suitability of the site for specified uses or of the appropriateness of an investigation, or remedial action or management plan which may enable a particular use. It sets out succinct and definitive information to assist decision-making about the use(s) of the site or a plan or proposal to manage or remediate the site.

The auditor is to complete either Section A or Section B of Part II, **not** both.

In **Section A** the auditor may conclude that the land is *suitable* for a specified use(s) OR *not suitable* for any beneficial use due to the risk of harm from contamination.

By certifying that the site is *suitable*, an auditor declares that, at the time of completion of the site audit, no further remediation or investigation of the site was needed to render the site fit for the specified use(s). Any **condition** imposed should be limited to implementation of an environmental management plan to help ensure the site remains safe for the specified use(s). The plan should be legally enforceable: for example a requirement of a notice under the *Contaminated Land Management Act 1997* (CLM Act) or a development consent condition issued by a planning authority. There should also be appropriate public notification of the plan, e.g. on a certificate issued under s.149 of the *Environmental Planning and Assessment Act 1979.*

Auditors may also include **comments** which are key observations in light of the audit which are not directly related to the suitability of the site for the use(s). These observations may cover aspects relating to the broader environmental context to aid decision-making in relation to the site.

In **Section B** the auditor draws conclusions on the nature and extent of contamination, and/or suitability of plans relating to the investigation, remediation or management of the land, and/or whether land can be made suitable for a particular land use or uses upon implementation of a remedial action or management plan.

By certifying that a site *can be made suitable* for a use or uses if remediated or managed in accordance with a specified plan, the auditor declares that, at the time the audit was completed, there was sufficient information satisfying guidelines made or approved under the CLM Act to determine that implementation of the plan was feasible and would enable the specified use(s) of the site in the future.

For a site that *can be made suitable*, any **conditions** specified by the auditor in Section B should be limited to minor modifications or additions to the specified plan. However, if the auditor considers that further audits of the site (e.g. to validate remediation) are required, the auditor must note this as a condition in the site audit statement.

Auditors may also include **comments** which are observations in light of the audit which provide a more complete understanding of the environmental context to aid decision-making in relation to the site.

In **Part III** the auditor certifies his/her standing as an accredited auditor under the CLM Act and makes other relevant declarations.

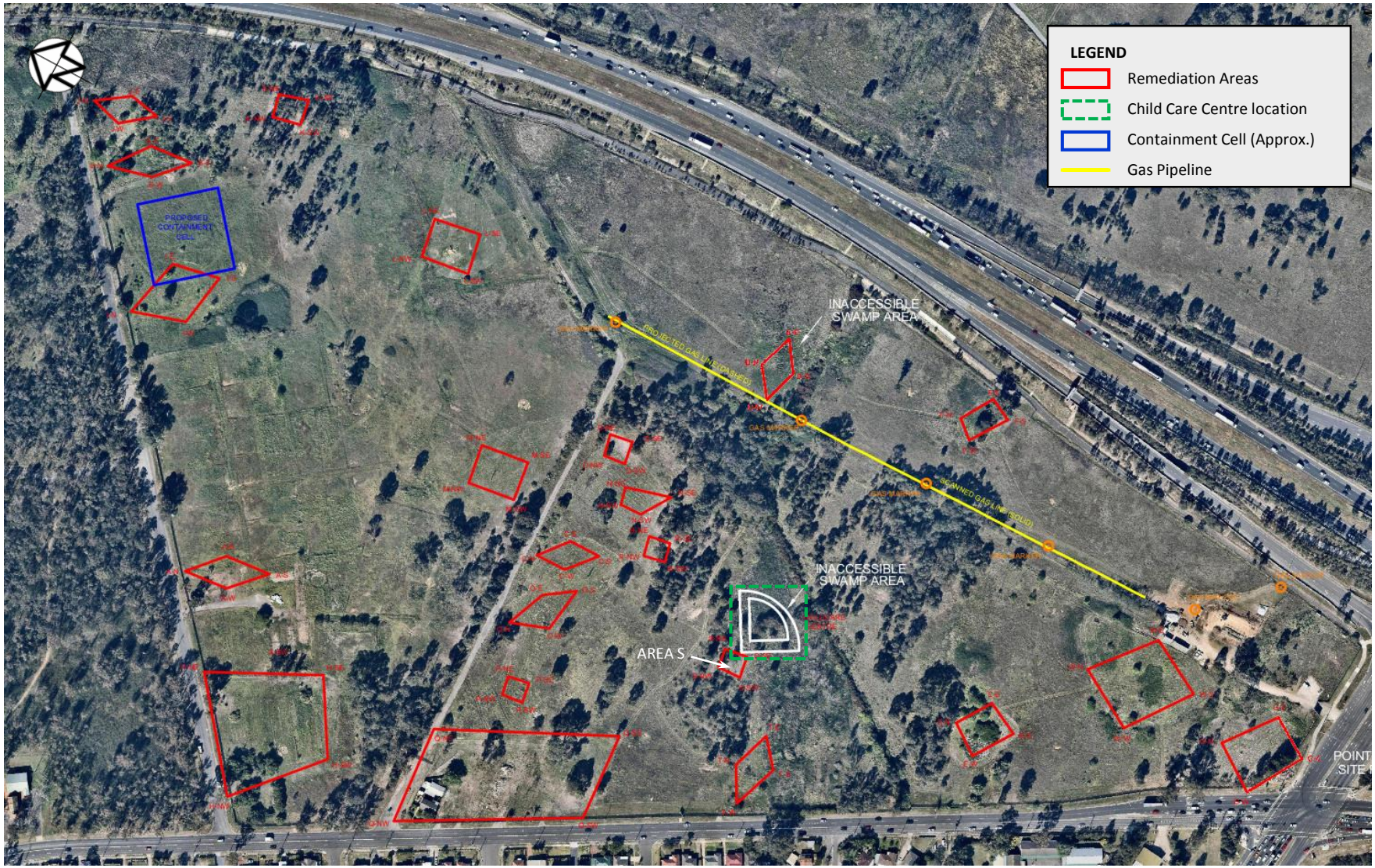
Where to send completed forms

In addition to furnishing a copy of the audit statement to the person(s) who commissioned the site audit, statutory site audit statements must be sent to:

EPA (NSW)
Contaminated Sites Section
PO Box A290, SYDNEY SOUTH NSW 1232
nswauditors@epa.nsw.gov.au

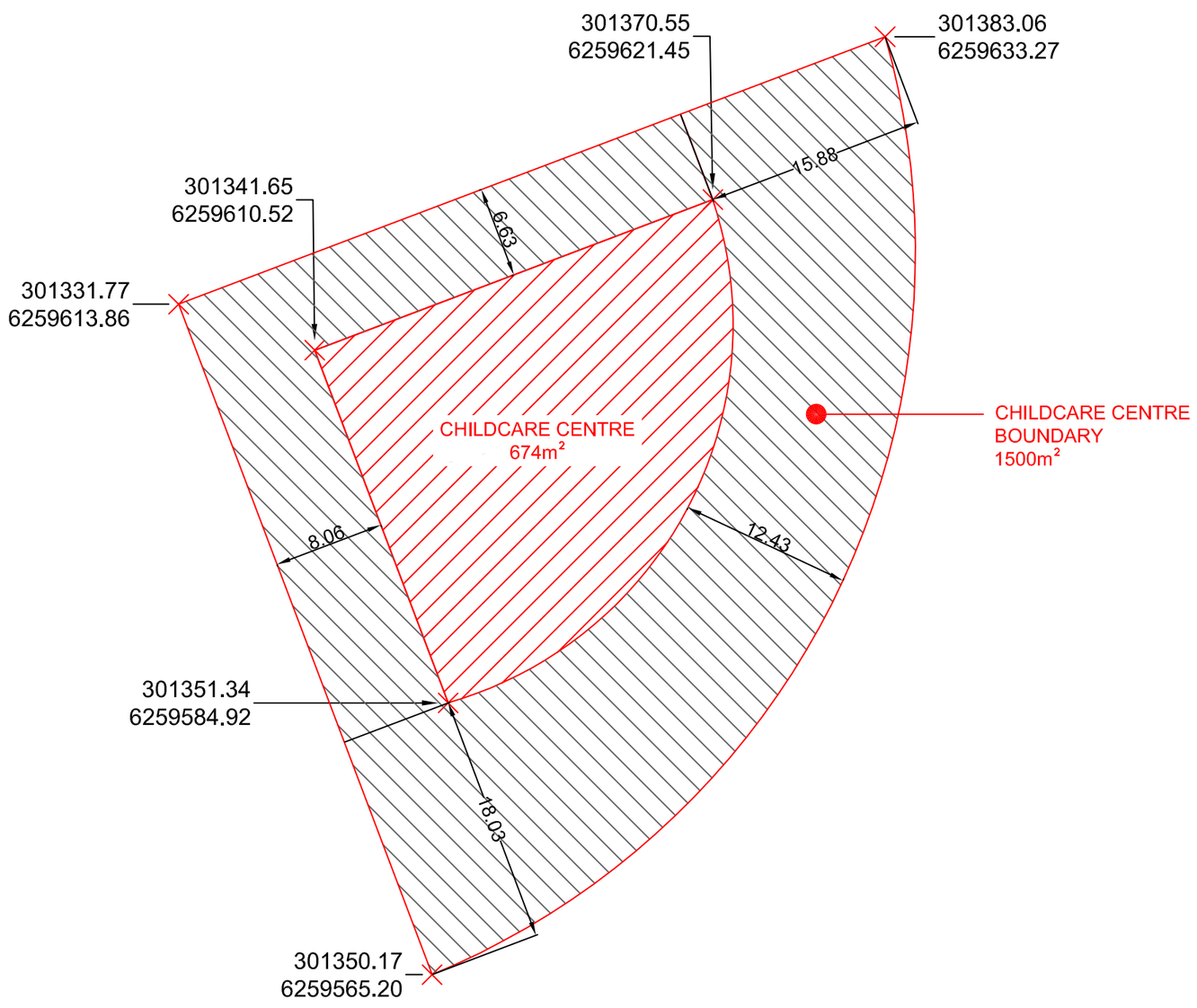
AND

the **local council** for the land which is the subject of the audit.



Base Map Source – Total Survey Solutions, Plan Showing Survey of features, Plan No. 170069, 2017

Figure 2 – Site Layout
Child Care Centre
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



TOTAL SURVEYING
SOLUTIONS
SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570
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NOTE:
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DRAWING: REVISED CHILDCARE CENTRE COORDINATES	JOB No.: 170069	LGA: NA
	PLAN No.: 1003A	DATUM: NA
CLIENT: ENVIROPACIFIC	DATE: 26/07/2017	SCALE: NTS
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK:	SHEET :1 OF 1

Site Audit Report
0503-1301-A1
0503-1301-A2

Eastern Creek Business Hub
Rooty Hill Road South, Rooty Hill, NSW

11 August 2017

51259/109504 (Rev A)
JBS&G Australia Pty Ltd Australia Pty Ltd

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Abbreviations

Term	Definition
As	Arsenic
AST	Aboveground Storage Tank
Cd	Cadmium
Cr	Chromium
Cu	Copper
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
B(a)P	Benzo(a) pyrene
DO	Dissolved oxygen
DP&E	NSW Department of Planning and Environment
DQO	Data Quality Objectives
EC	Electrical conductivity
EH	Redox potential
EIL	Ecological Investigation Level
EPA	New South Wales Environment Protection Authority
Hg	Mercury
HIL	Health Based Investigation Level
LOR	Limit of Reporting
MAH	Monocyclic Aromatic Hydrocarbon
Ni	Nickel
OCP	Organochlorine Pesticide
PAH	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PCB	Polychlorinated Biphenyls
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percentage Difference
SAR	Site Audit Report
SAS	Site Audit Statement
TPH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
Zn	Zinc

1. Introduction

1.1 Introduction and Background

Andrew Lau of JBS&G Australia Pty Ltd (JBS&G) was engaged by Western Sydney Parklands Trust (WSPT) to conduct a site audit of the land proposed to be developed (legally described in **Table 2.1**) into the Eastern Creek Business Hub (ECBH) ('the site'), located at Rooty Hill Road South, Rooty Hill, NSW.

The site encompasses a total area of 34 hectares (ha). The extent of the site area has been highlighted in the site layout plans presented in **Appendix C**. Figures showing the site location, site layout, and proposed landuses are provided in **Appendix D**.

A concept remediation action plan (RAP) was prepared for the site in 2013 (Consara 2013a) to broadly address the previously identified asbestos contamination issues and fulfill development requirements, as part of the staged development application for the site. The concept RAP (Consara 2013a) was reviewed by the auditor, with a Site Audit Statement (SAS) and Site Audit Report (SAR) previously issued by Andrew Lau on the 12 April 2013 (Audit # 0503-1112).

In June 2013 and following initial discussions with WSPT, a Phase 1 Early Works RAP was prepared for the site (Consara 2013b). This RAP was prepared for a portion of the site only, occupying an area of 3.86 hectares. The Phase 1 Early Works were previously proposed to consist of the construction of stormwater swales and channels; detention basins; water quality filtration devices; the construction of internal roadways; installation of utility services; new signalised intersection and associated utility adjustments at the internal road's intersection with Rooty Hill South; and some revegetation and landscaping along the roadways. The Phase 1 Early Works RAP (Consara 2013b) was reviewed by the auditor, with a SAS and SAR previously issued by Andrew Lau in July 2013 (Audit # 0503-1301).

It is noted that at the time of the preparation of the previous SAS and SARs, the site was in the process of obtaining approval for the concept proposal for the site development and subdivision. As such, the audit works previously undertaken for the site were conducted as non-statutory audits.

Following completion of the Phase 1 Early Works RAP (Consara 2013b), the scope of the Phase 1 early works was revised, with a bulk earthworks plan proposed for the entire site. The proposed works included cut and fill earthworks across the entire site to enable the preparation of a level site prior to the subdivision and redevelopment. Based on the nature of the proposed works, the previously identified asbestos contamination issues would be managed in conjunction with the Phase 1 early works and bulk earthworks program. Taking into consideration the proposed changes to the early works, a revised Phase 1 Early Works RAP was prepared for the site by Coffey (Coffey 2015). This document was reviewed and formed the basis of SAS and SAR issued by Andrew Lau on 4 August 2015 (Audit # 0503-1301, SAN # DOC15/287227).

Conclusions drawn by the auditor, as part of the abovementioned SAS and SAR, stated that the "*remediation and validation procedures outlined in the revised Phase 1Early Works RAP (Coffey 2015) are considered appropriate to render the site suitable*", subject to several conditions and "*suitability of the site is subject to implementation of the revised Phase 1 Early Works RAP (Coffey 2015)".*

The ECBH property has been approved for development under the State Significant Development SSD 5175 and s96 Modification of Development Consent, SSD 5175 MOD1, by the Department of Planning and Environment, with the majority of the property to be developed into a commercial / industrial precinct, with a smaller portion of the site proposed for use as a childcare centre. The proposed childcare centre is located within the south-western corner of larger ECBH area.

It is noted that the consultant (WSP 2017a) reported that the site will be primarily redeveloped for commercial / industrial purposes, including bulky good and large retail businesses. It is also reported that WSPT are also pursuing the potential opportunities for aged care facilities (independent living

units) and / or health facilities in the northern part of the site. The auditor notes that this SAR and associated SAS have only been prepared based on a commercial / industrial landuse for the wider ECBH property, with a portion proposed as a childcare facility only. Any use of the site for other landuses is outside the scope of this audit and will require further assessment which may require further remediation.

The remediation and validation activities undertaken at the site have been documented in two separate validation reports, WSP 2017a prepared for the wider ECBH property and WSP 2017b, prepared for the portion of the site proposed for the child care centre. These documents, in conjunction with the long-term site management plan (WSP 2017c) have been reviewed and form the basis of this current SAR (refer to **Section 1.2**). This (single) SAR has prepared for the wider ECBH property, including the portion of the site occupying the proposed child care centre. However, two separate SAS have been prepared to accompany this (single) SAR, as follows:

- SAS 0503-1301-A1, for the Wider ECBH Site, with future landuse primarily comprising commercial/industrial use; and
- SAS 0503-1301-A2, for a portion of the site identified as part Lots 2 and 3 in Section A DP 8681 and part Lots 7 and 10 in DP830836, with a proposed future use as a childcare centre.

Andrew Lau is a Site Auditor accredited by the NSW Environment Protection Authority (EPA) under the Contaminated Land Management Act 1997 (*CLM Act 1997*) (Accreditation Number 0503). The audit was completed with the assistance of Rita Sirianni, JBS&G's experienced audit assistant.

1.2 Objectives of the Site Audit

The objectives of this site audit were to:

- Independently review the validation reports for the site, and ensure that the remediation works undertaken at the site were completed in accordance with the Revised Phase 1 Early Works RAP (Coffey 2015); RAP Addendum (Coffey 2016); and audit conditions (SAS dated August 2015);
- Review the Long-Term Site Management for the site, prepared by the consultant; and
- Prepare a SAR and issues two separate SAS's (as described above in **Section 1.1**) in accordance with the DA approved condition # D9 (SSD5175) providing an opinion as to whether the remediation and validation works outlined in the Revised Phase 1 Early Works RAP (Coffey 2015) and RAP Addendum (Coffey 2016) were completed appropriately and to confirm whether the site is suitable for the proposed landuses.

In accordance with the requirements of the *CLM Act 1997*, the site audit was undertaken with consideration to:

- The provisions of the *CLM Act 1997*, Regulations and subsequent amendments;
- The provisions of any environmental planning instruments applying to the site; and
- Relevant guidelines made or approved by the EPA (**Appendix A**).

1.3 Type of Audit

The site is currently subject to planning approval as a State Significant Development SSD # 5175 Eastern Creek Business Hub, with approval issued on the 7 January 2015. Development consent conditions have been imposed by the Minister for Planning and Environment, with specific conditions and requirements regarding the involvement of an Accredited Site Auditor stipulated in condition # D9. This condition specifically relates to the preparation of a SAS at the completion of the remediation works, ensuring suitability of the site for the proposed landuse.

Based on the revisions of the proposed development and changes to the Phase 1 Early Works RAP, a section 96 application was submitted to the Minister for Planning. Approval to the modified development consent was issued on the 28 April 2016, under SSD # 5175 MOD1. Changes relevant to the SAS and auditor relate to Condition # C3 where, "*the site is to be remediated in accordance with the Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub, prepared by Coffey 28 July 2015 and as amended from time to time with consent from a NSW Accredited Auditor*."

Based on the DA conditions, the site audit has been conducted as a statutory audit. Site Audit Notification (SAN) number 0503-1301 was sent to the EPA on 27 July 2015, with receipt confirmation provided by the EPA on 30 July 2015 (EPA Reference DOC15/287227). Consistent with relevant requirements, it is noted that the two SAS's issued for the site as part of this audit have unique identification numbers: 0503-1301-A1 and 0503-1301-A2.

1.4 Documents Reviewed

The following documentation was reviewed as part of the site audit:

- *Report on Phase 1 Contamination Assessment, Proposed Redevelopment of Parcel 2.4, Western Sydney Parklands, Rooty Hill Road South, Doonside*, Douglas Partners, November 2009 (DP 2009).
- *Sampling, Analytical and Quality Plan, Eastern Creek Business Hub, Rooty Hill Road South, Rooty Hill NSW*, CDM Smith, August 2012 (CDM 2012).
- *Eastern Creek Business Hub Phase 2 Environmental Site Assessment, Rooty Hill Road South, Rooty Hill NSW*, CDM Smith, February 2013, (CDM 2013).
- *Concept Remediation Action Plan Eastern Creek Business Hub*, Consara Pty Ltd, April 2013, (Consara 2013a).
- *Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub*, Consara Pty Ltd, 25 June 2013, (Consara 2013b).
- *Phase 1 Early Works Remediation Action Plan – Eastern Creek Business Hub*, Coffey Environments Australia Pty Ltd, 28 July 2015 (Coffey 2015).
- *RAP Addendum – Relocation of Asbestos Containment Cell Eastern Creek Business Hub Development Site,* Coffey, 12 October 2016 (Coffey 2016).
- *Review and Comment on Proposed Validation Methodology and Remediation Activity Asbestos Remediation – Eastern Creek Business Hub Development Site,* Coffey, 1 March 2017 (Coffey 2017).
- *Western Sydney Parklands Trust, Eastern Creek Business Hub – Validation Report, Beggs Road, Rooty Hill, NSW*, WSP, August 2017 (WSP 2017a).
- *Addendum to Western Sydney Parklands Trust, Eastern Creek Business Hub – Validation Report, Childcare Centre, Beggs Road, Rooty Hill, NSW*, WSP, July 2017 (WSP 2017b).
- *Draft Western Sydney Parklands Trust, Eastern Creek Business Hub – Environmental Management Plan, Beggs Road, Rooty Hill, NSW*, WSP, July 2017 (WSP 2017c).
- *Draft Western Sydney Parklands Trust Eastern Creek Business Hub – Long-term Environmental Management Plan, Beggs Road, Rooty Hill, NSW*, WSP, Julye 2017 (WSP 2017d).
- *Draft Western Sydney Parklands Trust, Eastern Creek Business Hub – Development Phase Environmental Management Plan, Beggs Road, Rooty Hill, NSW*, WSP, July 2017 (WSP 2017e).

- *Response to Auditor Comments provided on 26 July 2017, Eastern Creek Business Hub Validation Reports and Management Plans*, WSP, 31 July 2017 (WSP 2017f).
- *Western Sydney Parklands Trust Eastern Creek Business Hub - Site Environmental Management Plan, Beggs Road, Rooty Hill, NSW,* WSP, August 2017 (WSP 2017g).

The following documents were also considered for review by the auditor as part of the preparation of the audit:

- *Category 1 QHSE Plan – Eastern Creek Business Hub, Beggs Road, Eastern Creek,* Enviropacific Services, issued 25 January 2017.
- *Work Procedure 01 – Site Establishment and Preliminaries,* Enviropacific Services, issued 23 January 2013.
- *Work Procedure 02 – Remediation Excavation,* Enviropacific Services, issued 23 January 2017.
- *Work Procedure 03 – Asbestos Management Plan and Asbestos Removal Control Plan (ARCP), Rooty Hill, NSW,* Enviropacific Services, issued 25 January 2017.
- Email correspondence between the client, Luke Wilson, Project Manager, Western Sydney Parklands Trust (WSPT) and the auditor, Andrew Lau, between March 2017 and June 2017. Specific email correspondence relates to testpitting methodology for 'high likelihood areas' (10 March 2017); validation methodologies for the Proposed Childcare Centre (26 April 2017); Validation methodology for Area L (23 May 2017); testpitting strategy in Friable Asbestos areas, Area K and Area W (1 May 2017); and cell boundary locations (16 June 2017).
- Email correspondence from Luke Wilson, Project Manager, WSPT, issued on 1 August 2017.

All email correspondence as detailed above, and additional correspondence relating to the site audit is provided in **Appendix B**.

1.5 Site Inspections

Table 1.1: Summary of Audit Inspections

Date	Attendance	Purpose
26 May 2016	Sahani Gunatunge on behalf of Andrew Lau (JBS&G)	Audit inspection to verify site layout condition and layout
5 June 2017	Andrew Lau (JBS&G) Luke Wilson (WSPT)	Audit inspection to observe site remediation and validation activities

1.6 Chronology of Site Assessment Works

The process of the assessment and audits undertaken at the site has been chronologically listed in **Table 1.2**.

Table 1.2: Summary of Investigation and Audit Works Undertaken at the Site

Date	Purpose
November 2009	Completion of a Phase 1 Environmental Site Assessment (ESA) report which included review of historical review and collection of a limited set of soil samples. The Phase 1 ESA concluded additional site assessment was recommended to assist in examining the extent of preliminary impacts identified and identifying any additional contamination issues.
August 2012	Commencement of Site Audit and review of Phase 1 ESA report (DP2009) and Sampling Analysis and Quality Plan (SAQP) (CDM 2012) and preparation of interim audit advice (0503-1112-01).

Date	Purpose
September 2012 and November 2012	Phase 2 ESA desktop and fieldworks conducted comprising relevant historical searches, detailed site inspection, soil test pitting and boring and soil and groundwater sampling and analysis.
October 2012	Site Auditor conducted a site inspection
February 2013	Review of Phase 2 ESA report (CDM 2013) and preparation of interim audit advice (0503-1112- 02). The Phase 2 ESA documented the results of the relevant historical searches, the methods and results of the soil and groundwater sampling conducted and the associated quality assurance and quality control (QA/QC) methods and results. The Phase 2 ESA concluded "*To manage risk associated with the identified waste, non-respirable ACM and a single sample location identified as a copper concentration hotspot associated with a waste stockpile, a Remediation Action Plan (RAP) is recommended to be developed for each proposed development area, with consideration given to materials that need to be transferred between each area for containment.*"
April 2013	Preparation of a draft concept RAP (Consara 2013a) to address asbestos contamination issues at the site and fulfil development consent conditions for review by the auditor. The concept RAP documented the procedures required to remediate the site for the proposed residential, commercial and open space land uses.
April 2013	Preparation of Site Audit Statement 0503-1112 and Site Audit Report (JBS 2013a) relating to the concept RAP.
June 2013	Preparation of a Phase 1 Early works RAP (Consara 2013b) for review by the auditor. The RAP documented the procedures required to remediate the site for the proposed uses. It is noted that the Consara 2013b RAP only addressed a small part of the site area (3.86 ha only) and an associated small portion of the asbestos impact.
July 2013	Preparation of Site Audit Statement 0503-1301 and Site Audit Report (JBS 2013b) relating to the Phase 1 Early works RAP.
July 2015	The proposed strategy for the development of the site was revised, with the revised strategy to identify and remediate asbestos impacted areas across the entire development area prior to the development of each Superlot. Based on this, Coffey prepared a revised Phase 1 Early Works RAP (Coffey 2015) detailing the remediation and validation process across the entire site area for review and comment by the auditor.
August 2015	Preparation of a Site Audit Statement 0503-1301 and Site Audit Report (JBS&G 2015), confirming suitability of the revised Phase 1 Early Works RAP (Coffey 2015) for the proposed future landuse.
23 January 2017	Submission of the QSHE, Asbestos Removal Control Plan and work procedures 01 and 02 for review and comment by the auditor. These documents were prepared by the nominated civil contractor Enviropacific Services. These documents were reviewed by the auditor, with audit comments issued on the 23 January 2017. Subsequent final documents were issued on the 25 January 2017.
23 January 2017	Submission of the RAP Addendum (Coffey 2016) to the auditor for review and comment, with audit comments issued on the 24 January 2017.
January to June 2017	Remediation works commenced in January 2017, with Enviropacific Services nominated the civil contractor by the client, WSPT. The environmental consultant was engaged directly by the civil contractor, WSP. All remediation works were conducted by the civil contractor, with WSP engaged for asbestos clearance and validation services (WSP 2017a).

Date	Purpose
March 2017	As discussed above, Enviropacific directly engaged the environmental consultant, WSP, to undertake the environmental component of the remediation works. Due to difficult in executing the Coffey 2015 RAP and Addendum to the RAP (Coffey 2016), the client (WSPT) engaged Coffey to provide clarification. Clarification to the proposed remediation and validation approach was provided in a letter response dated 1 March 2017 (Coffey 2017). This document was issued to the auditor for review with comments issued 6 March 2017.
11 July 2017	Submission of draft Validation reports (WSP 2017a and WSP 2017b) and site management plans for the site. The documents were reviewed by the auditor, with comments issued on the 24 July 2017. Revised documents were issued on the 2 August 2017, with final documents issued on 8 August 2017. It is noted that at the preparation of the draft reports, two separate environmental management plans were prepared for the overall site and containment cell (WSP 2017c and WSP 2017d). For completeness and ease of reference, the auditor requested that only one document be prepared for the overall long-term management of the site. As such, WSP prepared a Draft Development Phase Environmental Management Plan for the site (WSP 2017e). This document was reviewed by the auditor with comments issued on the 2 August 2017. Upon review, the consultant prepared and issued a final EMP for the site (WSP 2017g) which was reviewed by the auditor and considered acceptable by the auditor on the 8 August 2017 (refer to **Section 9**).
August 2017	Preparation of a Site Audit Report (JBS&G 2017) and two separate Site Audit Statements (0503-1301-A1 and 0503-1301-A2)

2. Site Description

2.1 Site Identification

The site details have been summarised in **Table 2.1** and described in further detail in the following sections. A plan identifying the subject site has been presented in **Appendix C**. The site location and layout is shown in **Appendix D**.

Table 2.1: Summary Site Details

Street Address	Rooty Hill Road South, Rooty Hill, NSW
Property Description	• Part Lot 1 DP1103025 • Lot 100 DP882326 • Lot 2 & 3 Section A DP8681 • Lot 3 to Lot 5 Section B DP8681 • Lot 1 DP135665 • Lots 1 & 13 Section B DP 8681 • Lots 1 to 10 DP830836 • Lots 2 & 3 DP1041487 • Lot A DP358346 • Lot 1, Lots 3 & 8 DP31130 • Lots 11, 12 and 14 DP882325 • Lots 1 & 2 DP1069269 • Lot 14 DP1051904 • Lots 11, 12 and 50 DP1041487 • Beggs Road (southern half) – Public Crown Subdivision Land • Beggs Road (northern half) – Road being the residue of Land in Certificate of Title • Volume 826 Folio 243 • Belmore Road from intersection with Beggs Road to its intersection with Great • Western Hwy (western half) – Road being the residue of Land in Certificate of Title • Volume 826 Folio 243 • Belmore Road from intersection with Beggs Road to its intersection with Great • Western Hwy (eastern half) – Public Crown Subdivision Road. • Belmore Road from its intersection with Beggs Road to its extent to north-east • (Western Half) – Road being the Residue of Land in Certificate of Title Volume 147 • Folio 41. • Belmore Road from its intersection with Beggs Road to its extent to north-east • (Eastern Half) – Public Crown Reserved Road Easement for Gas Pipeline – • Easement for Pipeline (Vide Q916928).
Parish	Rooty Hill and Melville
County	Cumberland
Local Government Area	Blacktown City Council
Property Size	34 hectares
Zoning	SEPP (WSP) 2009: UL – Western Parklands
Previous Use	Historically markets gardens along the intersection of Church Street and Rooty Hill Road South, with remaining uses varied (refer to **Section 3.0** for detail)
Current Use	Grazing with some residential

Proposed Use	Wider ECBH Site – commercial/industrial use; and Childcare Site (Part Lots 2 and 3 Section A DP 8681 and Part Lots 7 and 10 DP830836) - Childcare Centre.

2.2 Site Condition

The site is bound by the M7 Motorway to the east, Church Street to the north, Rooty Hill Road South to the west and the Great Western Highway to the south. The site is irregular in shape, with the greatest length extending approximately northwest to southeast. The layout is shown in **Appendix D**.

The site is divided into numerous lots including Superlot 1 (PAD 1) comprising an area of 4.76 hectares; Superlot 2 (PAD 2) comprising 5.53 hectares; Superlot 3 (PAD 3) comprising 7.32 hectares; Superlot 4 comprising 8.99 hectares; Part 1 DP 1103025 comprising 5.53 hectares; and the site infrastructure comprising 1.87 hectares.

The consultant (Consara 2013b) reported the site in 2013 was predominantly vacant and unoccupied, with the exception of a few occupied residential houses located on the western boundary along Rooty Hill Road South (north-western corner of Superlot 1) and some grassed area in the north-eastern used for horse grazing. The site was secured by a star picket fence to the northern and western boundaries and a chain fence to the east. A portion of the western boundary and the southern boundary were not fenced and were accessible by the public. Gated unsealed access roads are present from both Beggs Road to the west and from Great Western Highway to the south.

The consultant (Consara 2013b) reported the site was unsealed and was generally covered with grasses and weeds, with some larger well-established trees and vegetation, understood to be native Cumberland Woodland Plain, present in limited areas in the central northern and eastern areas. No stockpiles were observed.

The consultant reported an open stormwater channel was present through the central part of the site. Consara (2013b) reported that CDM Smith (2013) noted that in this central area the stormwater channel appears to have been excavated, with the excavated soils stockpiled along the southern bank of the channel.

Additionally, the consultant (Consara 2013b) reported this stormwater channel drained from this central portion of the site to the east and crossed the Belmore Road (Area P) and gas pipeline easement (Area Q) and into a lower topographic area in the northern part of the Proposed Open Space Pt 1 (Area Y) area proximal to the Western M7 Motorway. This lower area was noted to be waterlogged and vegetated with reeds.

Site conditions detailed by the consultant's was consistent with the observations made by the auditor during the recent and previous site inspections.

At the time of the remediation works, the consultant (WSP 2017a) reported that the site is was vacant with no remaining structures, with previous residential and commercial facilities having been demolished and removed from the site.

The area proposed for the childcare centre was observed to be vacant with no structures identified (WSP 2017b). The consultant (WSP 2017b) reported that prior to site clearing, this area was covered in large reeds. The site was located in a low-lying area and waterlogged. At the time of the site works, the area was reported (WSP 2017b) as uneven, but ground surface appeared natural with no none filling. Some surface rubbish (brick and plastic) was observed in this area, however no asbestos was observed. reported that limited filling had been undertaken in this area.

2.3 Topography

The consultant (Coffey 2015) reported the site is relatively flat with some gently undulating plain and has an elevation of between 38 and 53 metres Australian Height Datum (m AHD). The site and surrounding regional area gently declines from west to east towards Eastern Creek.

The consultant (WSP 2017a) reported that the site does not appear to have undergone large scale historical cut and / or fill activities, though levelled shallow fill is present across much of the site, along with various stockpiles.

A poorly defined drainage line bisects the site from near the middle of the western boundary of the north-eastern portion of the site. The consultant (WSP 2017a) reported that this drainage line was overgrown, appearing in places as swampy / wetland features.

A site survey plan has been included in the remediation and validation report (WSP 2017a) and has been presented in **Appendix C**.

2.4 Soils and Geology

The consultant (Consara 2013b) reported the site is underlain by the Triassic aged Blue Mountains Bringelly Shale sub-group of the Winamatta Shale Group (DMR, 1991), which comprises black to dark alluvial and estuarine formed grey shale and laminites, carbonaceous claystone, claystone, fine to medium-grained lithic sandstone, and rare coal and tuff. Across the site, the base of the Winamatta Shale is expected to be approximately 10 to 20 m below ground surface (m bgs), dependent on surface elevation, and is underlain by Hawkesbury Sandstone.

The consultant (Consara 2013b) reported that based on a review of the Soil Landscape of Penrith 1:100 000 Sheet 9030 (NSW DECCW 2010) the site is likely to comprise the Blacktown Residual soils landscape in the western portion which then grade into the South Creek soil landscapes, associated with the floodplains, valley flats and drainage depressions of Eastern Creek in the east.

2.5 Acid Sulphate Soils

The consultant (Consara 2013b) reported that based on a review of the 1:25 000 Prospect / Parramatta River Acid Sulphate Soil Risk Map (DLWC, 1997), there is no known occurrence of acid sulphate soils within the soil profile located on the site.

2.6 Hydrology

The consultant (Consara 2013b) reported Eastern Creek is the closest flowing surface water body, located approximately 300 m to the east of the site. Eastern Creek appears to be part of the drainage line from Prospect Reservoir (located approximately 4 km to the south east of the Site; at approximately 70m AHD) and the Hawkesbury River (located approximately 20 km to the north of the Site; at approximately 9m AHD).

No reported constructed underground stormwater system was observed on the site. However, several localised surface water drainage channels were observed, with a narrow deeper grassed open drainage channel present through the central portion of the site. This deeper channel appeared to collect stormwater from Rooty Hill Road South, extend into the eastern part of the site and drain into the northern part of Area Y (Consara 2013b).

The consultants (Consara 2013b and CDM 2013) reported the northern part of Area Y appeared to be topographically lower and was waterlogged and vegetated with reeds. The drainage channel, described above, had been observed to contain stagnant water. No other accumulated surface waters were observed during previous investigations on the site. Furthermore, the channel in many parts was covered with vegetation and weeds. It was considered by Consara (2013b) that a section of the channel in the central part of the site was likely excavated to clear vegetation and accumulated sediments to allow waters to flow to the east. It was expected if a sufficient volume of

surface water accumulated in this channel it may flow to the east, however, lower volumes would not flow across the surface of the channel but would likely infiltrate into the underlying soil.

Based on the surface topography of the lower areas of the site and its vegetated and unsealed surface, the consultant (Consara 2013b) reported that it is unlikely significant flows of surface water would originate from the central parts of the site to discharge to the east towards Eastern Creek.

It is noted that the DP (2009) report stating a man-made channel running below the M7 Motorway allowed drainage to Eastern Creek.

It was reported that the potential for minor localised flooding in the lower areas of the site and the site, particularly on Area Y, under high rainfall conditions was considered high, due mainly to the unsealed and vegetated surface and the absence of any drainage systems. However, the consultant (Consara 2013b) considered where surface water accumulates on the site it would likely be dissipated by evaporation and evapotranspiration and/or by infiltration into the soil.

Furthermore, the consultant (Consara 2013b) reported given the elevation of the site and its location, the risk of significant flooding from Eastern Creek was considered low.

It is noted that development of the site includes the construction of a large stormwater detention pond in Area Y and a smaller one in Area X1 that will collect waters from drainage channels to be constructed in the western parts of the site.

A review of the Blacktown City Council flood risk data (CDM 2013) (http://maps.blacktown.nsw.gov.au/WebSpatial/) which indicated the majority of the site was outside the mapped flood risk zones, with the exception of the central east section of Area X north of Beggs Road which is situated within a Low Flood Risk zone.

2.7 Hydrogeology

The consultant (CDM 2013) reported the groundwater at the site is likely to be present within a shallow aquifer within the weathered shale, and that groundwater within the shallow aquifer would flow to the east toward Eastern Creek. Eastern Creek appears to be part of the drainage line from Prospect Reservoir (located approximately 4km to the south east of the site) and the Hawkesbury River (located approximately 20km to the north of the site).

A review of the NSW Natural Resource Atlas website (http://www.nratlas.nsw.gov.au) was undertaken by DP in 2009 (DP 2009) and identified the presence of one bore within the search area, located approximately 700 m to the west of the site. The works summary for the bore indicated it was used for waste disposal and was drilled to a depth of about 218 m, with no groundwater details provided.

2.8 Surrounding Environment

The consultant (Coffey 2015 and Consara 2013b) reported that the site is surrounded by the following:

- Morreau Reserve, a recreational park to the north, with residential housing to the northwest;
- Immediately to the east is the Westlink M7 motorway, followed by vacant lots, with Eastern Creek beyond, approximately 300 m to the east of the site;
- The Great Western Highway is present to the south, with Eastern Creek Public School and sports fields to the southwest across Rooty Hill Road South; and
- Immediately to the west of the site is Rooty Hill Road South, with residential housing beyond.

The consultant reported there was no visible evidence of potentially contaminating activities or indications of contamination observed in offsite areas.

2.9 Audit Findings

The information provided by the consultants (DP 2009, CDM 2013, Consara 2013b, Coffey 2015, WSP 2017a and WSP 2017b) in regard to the site condition and surrounding environment has been checked against and generally meets the requirements of EPA 1997. The information provided was also consistent with the observations made during site inspections conducted by the site auditor.

Overall, the information provided by the consultants (DP 2009, CDM 2013, Consara 2013b, Coffey 2015, WSP 2017a and WSP 2017b), information supplemented by observations made during the site audit inspection and review of publicly available information in relation to the site condition and the surrounding environment is considered adequate for the purposes of the site audit, with the exception that details of climate were not provided.

For completeness, the auditor conducted a review of Bureau of Meteorology (BOM) climate statistics for Seven Hills (Collin Street) [1] which indicates the following:

- Mean maximum temperatures ranging from 17.4° C in July to 28.4° C in December;
- Mean minimum temperatures ranging from 4.5° C in July to 17.0° C in February; and
- Mean monthly rainfall ranging from 43.8 mm in July to 117.3 mm in February, with an average annual rainfall of 917.2 mm.

In general, the climate of the site area is described as comprising warm summers and mild winters, rainfall was described as occurring throughout the year with wetter periods from January to June. This additional data does not alter the consultants' findings or conclusions and, hence, does not alter the findings of the audit.

Overall, the information provided by the consultant (DP 2009, CDM 2013, Consara 2013b, Coffey 2015, WSP 2017a and WSP 2017b) in relation to site condition and the surrounding environment is considered adequate for the purposes of assessing the contamination status of the site.

[1] Bureau of Meteorology Climate Statistics for Seven Hills (Collins Street), accessed 11/3/2013 http://www.bom.gov.au/climate/averages/tables/cw_067026.shtml

3. Site History

3.1 Site History Information Sources

A comprehensive desktop investigation, including a review of historical aerial photographs (1951, 1961, 1970, 1982, 1994 and 2005); historical title records; WorkCover NSW Dangerous Goods records; Blacktown City Council records and NSW EPA records was undertaken by DP and CDM in 2009 and 2013, respectively (DP 2009 and CDM 2013). As part of the desktop investigation, the consultant also undertook a literature review of the history of the site, including books entitled:

3.2 Aerial Photographs

The consultant (DP 2009 and CDM 2013) reviewed historical aerial photographs for the site and surrounding areas, with the following information provided:

- 1951 - Great Western Highway, Church Street, Beggs Road and Rooty Hill Road South were present, with Belmore Road running north-south through the eastern portion of the site. The northern portion of the site (i.e. north of Beggs Road) was primarily bush covered with minor scatterings of buildings presumed to be houses and/or sheds, potentially poultry sheds. Pockets of development exist in the southern and northwestern portions, however the majority of the site was undeveloped, relatively open and grassed, with minimal trees. Land cultivation was evident in the southern corner, and adjacent to Rooty Hill Road South. The site was surrounded by rural residential style properties.
- 1961 - The site was similar to the previous photograph, however some of the sheds have been removed, while new sheds were present in the north-western corner of the site. Some trees have been cleared. Land cultivation was evident in the north-eastern corner, while it appears to have ceased in the south. Increasing urban residential development was observed around the north-western portion.
- 1970 - The majority of trees in the northern portion have been removed, with increasing paddocks/fields for market gardens or other agriculture. Additional houses were present along Beggs Roads, extending to the corner with Rooty Hill Road South. A drainage channel had been built in the southern portion of the site, extending beyond Rooty Hill Road South and Belmore Road. Most structures in the far southern portion have been removed, with signs of disturbance present in the south-eastern corner. Urban residential development has expanded to the west of the site, whilst surrounding lands to the north, east and south remain rural.
- 1982 - The majority of the site had been cleared, with only pockets of development present remaining, largely in the north-western corner. Warehouses and sheds are present within paddocks, with some residential housing still present. The remainder of the site comprised undeveloped grassland with some trees. The southern portion of Belmore Road appeared less prominent and may be being abandoned. There were minor increases in urban development to the west.
- 1994 - The site appeared similar to the previous aerial photograph, with even fewer buildings remaining onsite in the northwestern corner. Horse feed troughs appeared to be present in the northern portion. The majority of the site was open space, containing some mature trees.
- 2005 – The site appeared similar to the 1994 photograph, with still fewer buildings present, consisting of residential housing in the northwest, and paddocks and buildings elsewhere. The gas trunk receiving station (Jemena) has been built in the south-eastern corner of the site. No other significant chances were noted. The M7 Motorway had been built adjacent to the eastern boundary, while Belmore Road and Beggs Road no longer appeared to be in use.

Based on the aerial photography review the buildings and warehouses that previously existed across the site constructed between 1950 and 1980 were reported by CDM 2013. Based on their age, the consultant (CDM 2013) considered there was the potential for ACM and other hazardous materials, such as lead-based paint and asbestos, to have been used in their construction. Additionally, given the potential for part or most of the site to have been used for agricultural purposes, it was possible that pesticides may have been used.

3.3 Historical Title Search

A titles search was undertaken at the request of the consultant (CDM 2013) by Land Partners Limited. The results are presented below, by allotment.

Table 3.1: Lots 11 and 12 DP 882325 (Superlot 1)

Date	Owner	Occupation / Landuse
1887	Harry Haydon Beggs	Blacksmith
1940	Hector Owen Beggs	Musician
1957	Sidney Samuel Luke	Carrier
1962, 1964?	Commissioner for Main Roads	Unknown / none
1999	Environmental Planning and Assessment Act 1979 Minister	Unknown / none
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.2: Lots 3 Section A DP 8681 and Lots 9 / 10 DP 830836 (Superlot 1 & Superlot 2)

Date	Owner	Occupation / Landuse
1907	Ernest Victor Finckh	Agent
1922	Clarence Livingstone Beggs	Blacksmith
1934	Jonathon Haydon Beggs	Blacksmith
1936	May Eileen Weston	Married woman
1977	NSW Planning and Environment Commission	Unknown / none
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.3: Lot 2 Section A DP8681 and Lot 7 & 8 DP830836 (Superlot 2, Area A & Area X)

Date	Owner	Occupation / Landuse
1907	Ernest Victor Finch	Agent
1930	John Ellul	Cook
1949	Vera Muriel Lynes	Married woman
1955	Ralph Alexander Crabb Magdalen Raie Crabb	Mill hand Married woman
1972	NSW Planning and Environment Commission	Unknown / none
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.4: Lot A DP 358346 (Superlot 2, Area A, Area X)

Date	Owner	Occupation / Landuse
1907	Ernest Victor Finch	Agent
1921	Ellen Walker	Married woman
1934	Geoffrey Arthur Walker	Poultry farmer
1959	St Ives Development Pty Ltd	Unknown / none
1967	Giovanni Cuda Silvana Cuda	Fitter mechanic Married woman
1979	Environmental Planning and Assessment Act 1979 Minister	Unknown / none
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.5: Lots 3 and 4 DP 830836 (Area X)

Date	Owner	Occupation / Landuse
1907	Ernest Victor Finch	Agent
1934	James Smith Kelly	Farmer
1968	Italo Velardo Maria Lucia Veldaro	Poultry farmer Married woman
1980	Environmental Planning and Assessment Act 1979 Minister	Unknown / none

Date	Owner	Occupation / Landuse
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.6: Lots 1 and 2 DP 830836 (Area X)

Date	Owner	Occupation / Landuse
1907	Ernest Victor Finch	Agent
1921	James Kelly	Labourer
1946	James Kelly Junior	Farmer
1954	Allen James Haley Elma May Haley	Farmer Married woman
1973	Environmental Planning and Assessment Act 1979 Minister	Unknown / none
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.7: Lot 2 DP1041487 (Area X)

Date	Owner	Occupation / Landuse
1907	Ernest Victor Finch	Agent
1946	James Gordon Jamieson	Poultry farmer
1951	Istvan Turoczy Margit Turoczy	Farmer Married woman
1952	Djuro Tramosljanin	Labourer
1956	Otto Boege Herta Boege	Machinist Married woman
1961	Stasys Narusevicius	Laboratory assistant
1974	State Planning Authority NSW / Environmental Planning and Assessment Act 1979 Minister	Unknown / none
2008	Western Sydney Parklands Trust	Unknown / none

Table 3.8: Lot 1 DP 1103025 (Area Y)

Date	Owner	Occupation / Landuse
Parcel 1		
1907	Ernest Victor Finch	Agent
1922	Harry William Murkin Louisa Ann Murkin	Storeman
1946	Cecil Bernard Turner Gladys Turner	Dairy farmer
1948	Alfred Charles Crozier Leila Crozier	Farmer
1950	Commonwealth of Australia	Overseas communications purposes.
Parcel 2		
1907	Ernest Victor Finch	Agent
1924	William Morrison	Labourer
1949	James Morrison	Farmer
1951	Commonwealth of Australia	Overseas communication purposes
Parcel 3		
1907	Ernest Victor Finch	Agent
1918	Marion Beatrice Farrell	Married woman
1926	John Trigg	Labourer
1951	Commonwealth of Australia	Overseas communications purposes.
Parcel 4		
1907	Ernest Victor Finch	Agent
1924	Louis James Kind	Book maker
1933	Herbert Hoare	Railway night officer
1937	Grace Caroline Olsson	Spinster
1951	Commonwealth of Australia	Overseas communications purposes.
Parcel 5		
1907	Ernest Victor Finch	Agent
1926	Paul Healy	Farmer
1930	Gertrude Mary May Richardson	Spinster
1932	Grace Caroline Olsson	Spinster
1951	Commonwealth of Australia	Overseas communications purposes.

Date	Owner	Occupation / Landuse
Parcel 6		
1907	Ernest Victor Finch	Agent
1921	Camelo Francesco Zammit Giovanni Aquilina	Labourer Labourer
1924	Giovanni Farrugia Spiro Farrugia	 Poultry farmer
1927	Spiro Farrugia	Poultry farmer
1950	Commonwealth of Australia	Overseas communications purposes.
Parcel 7		
1907	Ernest Victor Finch	Agent
1937	James Abram	Labourer
1939	Janet Abram	Widow
1951	Commonwealth of Australia	Overseas communications purposes.
Parcel 8		
1899	Crown Parcel	Crown Reserve No. R 30199 for access to water
1953	Commonwealth of Australia	Presumed communication purposes.
Parcel 9		
?	Joseph Craven Bottomley	Poultry farmer
1924	Priscilla Jane Beers	Widow
1949	Commonwealth of Australia	Presumed communication purposes.

The consultant (CDM 2013) reported all parcels were transferred to the Minister for the Environmental Planning and Assessment Act 1979 in 2001, before being transferred to the Western Sydney Parklands Trust in 2008.

3.4 Regulatory Searches

3.4.1 NSW EPA Records

The consultant (DP 2009) conducted a search of the Contaminated Land Management Act 1997 Register and found the site was not registered. There also were no listed sites in close proximity to the site.

The consultant (DP 2009) also conducted a search of the public register provided under the Protection of the Environment Operations Act 1997 and did not locate any listing for the site.

3.4.2 WorkCover Dangerous Goods Records

The consultant (CDM 2013) reported a search of the Stored Chemical Information Data Base (SCID) and the micro-fiche records held by NSW WorkCover was conducted and did not identify any records regarding dangerous goods on the site.

3.5 Previous Investigations

The consultant (CDM 2013) included a report provided by E3 Consulting (now CDM Smith) as an appendix, consisting of a review of the initial Environmental Site Assessment conducted by Douglas Partners. The findings of the E3 report informed the writing of the SAQP (CDM 2012) for the follow up works conducted on the site.

The E3 (2012) report assessed the reliability and scope of the DP (2009) assessment. The findings included:

- The DP (2009) report was intended only as a preliminary investigation and further works would be required.
- Additional works should be undertaken to ascertain necessary remediation.
- E3 (2012) considered the DP (2009) report analytical quality to be poor, based on a poor QA/QC program and results. As such, E3 considered that the results could not be considered quantitatively reliable, particularly for VOCs.

- DP (2009) undertook no groundwater investigation and that NSW OEH guidelines required that a groundwater investigation be undertaken.
- The contents of stockpiles and fly-tipped material at the site might pose aesthetic issues and hence render it unsuitable for re-use on the site, requiring disposal offsite.
- DP (2009) did not complete review of Section 149 Certificates, NSW WorkCover Dangerous Goods records, or current and historical deeds for the site.
- Intrusive investigations of identified areas of environmental concern were conducted using very low sampling densities unable to be justified by reference to NSW Guidelines.
- Many samples were analysed only for asbestos, and did not adequately assess the chemical condition of soils.
- Several fly-tipped stockpiles were identified by DP (2009) but not sampled as part of the works.
- Test pits conducted in stockpiles on the southern part of the site were insufficient to assess chemical and physical contents of these stockpiles and hence were not able to assess whether these materials required offsite disposal or could be beneficially reused on site.

The consultant (E3 2012) recommended both further desktop and intrusive investigations be undertaken for the site.

3.6 Audit Opinions

The site history information provided by the consultants (DP 2009 and CDM 2013) has been checked against, and generally meets the requirements of the EPA 1997.

Prior to ESA works as conducted by the consultant (CDM 2013), the auditor provided interim advice based on the review of the previous reports (DP 2009 and CDM 2012). The auditor generally considered that the data in DP 2009 can be used as part of the site audit, in conjunction with the results obtained from CDM 2013.

The consultants (DP 2009 and CDM 2013) did not undertake searches of relevant heritage databases. For the purposes of completeness, the auditor has undertaken these searches. For the NSW Heritage Database, several properties are listed as being located on Rooty Hill Road South, however none are located in the area of the site. For the Australian Heritage register, it is noted the Rooty Hill Park and recreation area has been nominated as an indicative place on the Australian heritage register. However, an application and/or data to support the nomination as a heritage area have not been submitted, nor has the heritage value been assessed. The nominated area appears to fall within the northern portion of the site. Records of the Heritage Register searches conducted are provided in **Appendix E**.

The extent of site history information presented by the consultant (CDM 2013) and the previous consultant (DP 2009) is considered adequately complete for the purposes of identifying a range of potential contamination issues at the site as part of the site investigation process.

4. Conceptual Site Model

The National Environment Protection (Assessment of Site Contamination) Measure, NEPC, 1999 (as amended 2013, NEPC 2013) identifies a conceptual site model (CSM) as a representation of site related information regarding contamination sources, receptors, and exposure pathways between those sources and receptors. The development of a CSM is an essential part of all site assessments and remediation activities.

NEPC (2013) identified the essential elements of a CSM as including:

- Known and potential sources of contamination and contaminants of concern including the mechanism(s) of contamination;
- Potentially affected media (soil, sediment, groundwater, surface water, indoor and ambient air);
- Human and ecological receptors;
- Potential and complete exposure pathways; and
- Any potential preferential pathways for vapour migration (if potential for vapours identified).

Based on the known contamination, each of the elements of the CSM are discussed as follows.

4.1 Sources of Contamination

Based on a review of site history review, the consultant (DP 2009 and CDM 2013) identified the following areas of potential contamination:

- Potential contamination of surface soils associated with historical agricultural use;
- Potential contamination of soils associated with the weathering of hazardous materials and demolition of former buildings located at the site, including asbestos, lead paint and pesticides;
- Potential contamination of soils associated with the historical use of the site for market gardens;
- Potential contamination of soils associated with the presence of asbestos piping used for drainage;
- Potential contamination associated with the fly tipped stockpiles located at the site; and
- Potential contamination of soils associated with filling and potential landfilling across the site.

Based on the identified sources of contamination the consultant (DP 2009 and CDM 2013) identified the following contaminants of potential concern:

- Asbestos.
- Heavy metals.
- Total Recoverable Hydrocarbons (TRH).
- Volatile and Semi-Volatile Organic Compounds (VCOs and SVOCs).
- Polycyclic Aromatic Hydrocarbons (PAHs).
- Organochlorine pesticides (OCPs).
- Polychlorinated Biphenyls (PCBs).

- Phenols.

As part of the preparation of the validation report, the consultant (WSP 2017a) reported that the main sources of contamination included the former market gardens, uncontrolled fill stockpiles / fly tipping and former site structures. At the completion of the civil component of the remediation works, the consultant reported that the distribution of contaminants included:

- Un-remediated areas identified in the Revised Phase 1 Early Works RAP (Coffey 2017) as "low likelihood" areas, outside of the remediation zones, where asbestos may be present;
- Un-excavated areas between clean testpits or beneath the base of the excavations that terminated in fill; and
- Capped asbestos impacted soils within the designated containment zone.

4.2 Potentially Affected Media

Potentially affected media include natural soils; fill materials; stockpiled materials and groundwater occurring at the site.

4.3 Potential Human and Ecological Receptors

Human receptors including potential current and potential future users of the site were considered by the consultant (CDM 2013). Based on the landuse of the site, this was considered to include occupants of surrounding industrial, commercial and residential dwellings, including access to soils for construction, gardening or growing vegetables; onsite workers and occupants; and onsite maintenance workers (including subsurface maintenance workers)

The consultant (CDM 2013) reported that the most significant ecological receptor identified freshwater ecosystems of Eastern Creek (located 300 m east of the site) and Hawkesbury River; shallow groundwater present beneath the site and regionally; uncleared natural bushland and flora and fauna in the area including the bushland on the site and around the creek; and parks and recreational open space including parks and playing fields in the vicinity of the site including sporting facilities of the Eastern Creek Public School.

Based on the nature of the remediation works undertaken at the site, the consultant (WSP 2017a) considered that potential human receptors at the site include site workers during the development phase of the works; future site maintenance personnel; future site occupants; and occupants of adjacent sites.

It is noted that as part of the development of the revised Phase 1 Early Works RAP (Coffey 20515), the consultant also reported that remediation and / or management of groundwater is not required at the site, as the observed groundwater quality indicates that groundwater is not impacted.

4.4 Potential Exposure Pathways

It is considered that any human exposure of contaminated soils (if present) would be via soil vapour, dust inhalation (including inhalation of asbestos fibres) and dermal and / or oral contact, by future construction and maintenance workers; future site workers; and future occupants of the site.

Ecological exposure pathways (if contamination present) are anticipated to occur via leaching of potentially impacted soils and groundwater migrating offsite to nearby aquatic ecosystems within the nearby Eastern Creek. However, based on the nature and extent of previous investigations undertaken at the site (CDM 2013), there was no evidence to suggest that offsite migration of site contamination was occurring.

4.5 Preferential Pathways

The consultant (DP 2009 and CDM 2013) did not provide sufficient detail regarding preferential pathways within the extent of the site. However, following completion of the remediation works

and based on the distribution of contaminants, as discussed in **Section 4.1** above, the consultant (WSP 2017a) reported that the preferential pathways are likely to include direct / dermal contact to site development works or future maintenance workers; inhalation of fibres to site development workers, maintenance workers involved in surface works and future site visitors; and direct contact through the disturbance of the capping and marker layer of the containment cell to future site workers and maintenance workers.

The consultant (WSP 2017a) reported that any risks to site development and maintenance workers via dermal contact is considered to be negligible; with risks to maintenance workers and future site visitors also considered to be negligible via inhalation. However, risks to site development workers (via inhalation) and risks posed by breaches in the containment cell are considered to be moderate, with workers being potentially exposed to potential contaminants. The consultant has prepared an EMP to manage these risks at the site (WSP 2017g).

The consultant (CDM 2013) considered that the previously identified metal contamination in the groundwater beneath the site is likely attributed to an offsite source and not associated within any onsite contamination. Based on this, it is considered that the potential for groundwater to act as a preferential pathway for the migration of contamination across the site is considered to be low.

As discussed in **Section 4.3**, groundwater is not considered to act as a migration pathway and was not considered further by the consultant (WSP 2017a).

4.6 Audit Findings

As part of the 2009 and 2013 ESA, the consultants (DP 2009 and CDM 2013) identified a number of potential contamination issues at the site and considered both human and ecological receptors. Taking into consideration the site history review and site inspections conducted at the site, the auditor considers that list of COPCs identified by the consultants was adequate in assessing the nature and extent of contamination across the site as part of the site investigation process.

The auditor notes that the consultants (DP 2009, CDM 2013 and Consara 2013b) did not prepare a detailed CSM. The auditor considers that this does not affect the outcome of this audit, particularly as the assessment of soils and groundwater within the site were sufficient and meets the requirements of this audit. It is noted that for completeness, the auditor has reviewed the relevant information and has provided detail in **Section 4.4** and **4.5** of this audit report.

The auditor also notes that the CSM prepared WSP 2017a as part of the development of the validation report generally meets the requirements of the NEPC 2103.

Overall, the auditor considers that the identified potential contamination issues and potentially contaminated media were appropriate for assessing the suitability of the site for the intended use.

5. Sampling Analytical and Quality Program

An assessment of quality assurance and quality control (QA/QC) has been undertaken by the consultant (DP 2009, CDM 2013, WSP 2017a and WSP 2017b) by developing data quality indicators (DQIs), broadly based on the seven-step process referred to in DEC 2006.

The auditor has undertaken a review of the QA/QC undertaken by the consultant, which has been summarised in **Tables 5.1** against the PARCC parameters (precision, accuracy, representativeness, comparability and completeness).

Table 5.1 Data Usability Assessment (DP 2009, CDM 2013, WSP 2017a and WSP 2017b)

Parameter	DQIs	Requirement	Auditor Assessment
Field and Lab QA/QC			
Precision	Intra-laboratory duplicates (blind)	Collected at a rate of 1 per 20 samples. Analysed for primary contaminants of concern. RPDs less than 50%.	Soil duplicates were collected at a rate of 8 % and 10 % and were analysed for the main contaminants of concern during the DP 2009 and CDM 2013 investigation works, respectively. RPDs ranged from 0-54 % (DP 2009) and 0-158 % (CDM 2013) and were within the DQIs with the exception of RPD exceedances for metals. The consultant (CDM 2013) attributed the elevated RPD to sample heterogeneity. Given that the samples were obtained from fill materials, the auditor accepts the consultant's explanation of the higher than expected RPDs and is of the opinion that the isolated elevated RPD results do not affect the overall reliability of the analytical data. Intra-laboratory duplicates were not collected during the asbestos validation works (WSP 2017a). However, sufficient inter-laboratory duplicates were collected to demonstrate a level of repeatability in laboratory methods between the testing laboratories and also a level of repeatability during the field works. One intra-laboratory duplicate (WSP2017a) was collected during the additional investigation works within the proposed childcare centre. Sampling was undertaken at a rate of 1 per 20. Laboratory results for the duplicate pairs were all reported at concentrations below the LOR, with RPDs, calculated at 0 %.
			Groundwater duplicates were collected at a rate of 16% and were analysed for the main contaminants of concern (CDM 2013). Sufficient groundwater intra-laboratory duplicates were collected and analysed as part of the ESA investigation (CDM 2013). The RPDs calculated for the intra-laboratory groundwater duplicates ranged between 0% - 26%, with no exceedances of the DQI.
Precision	Inter-laboratory duplicates (spilt)	Collected at a rate of 1 per 20 samples. Analysed for primary contaminants of concern. RPDs less than 50%.	The consultant (DP 2009) did not collect or analyse any inter-laboratory duplicates during the soil sampling program. While this is considered a non-conformance, given the preliminary nature of this assessment and a Phase 2 ESA (CDM 2013) has since been conducted at the site, this exclusion is considered not to affect the overall reliability of the analytical data.

Parameter	DQIs	Requirement	Auditor Assessment
			Soil duplicates were collected at a rate of 5 % and were analysed for the main contaminants of concern during the CDM 2013 investigation works. RPDs calculated for the inter-laboratory duplicates ranged between 0% and 176% with a number of RPDs exceeding the DQI for metals. The consultant (CDM 2013) attributed the elevated RPD to sample heterogeneity. Given that the samples were obtained from fill materials, the auditor accepts the consultant's explanation of the higher than expected RPDs and is of the opinion that the isolated elevated RPD results do not affect the overall reliability of the analytical data. A total of 7 inter-laboratory duplicates were collected during the asbestos validation works (WSP 2017a) and were collected at a rate of 1 per 20 samples. All duplicate sample pairs reported non-detectable levels of asbestos, as such RPDs could not be calculated. However, the results demonstrated a consistency and repeatability between the primary and secondary laboratories. One inter-laboratory duplicate (WSP2017a) was collected during the additional investigation works within the proposed childcare centre. Sampling was undertaken at a rate of 1 per 20. Laboratory results for the duplicate pairs were all reported at concentrations below the LOR, with RPDs, calculated at 0 %.
			The consultant (CDM 2013) provided in the report that a groundwater inter-laboratory duplicate was collected no results were tabulated nor were any analytical certificates included. Therefore, the auditor is of the opinion that no groundwater inter-laboratory duplicates were collected and analysed. While this is considered a non-conformance, given the sufficient intra-laboratory duplicates were collected and the results of all groundwater sampling activities do not show a pattern of sustained elevated impact. As such, the concentrations in groundwater are considered representative of site conditions.
	Laboratory duplicates	One per batch. RPDs less than 50%.	Laboratory duplicates were undertaken by the primary laboratories.
Accuracy	Field rinsate blanks	Collected at a rate of 1 per piece of decontaminated sampling equipment. Analysed for primary contaminants of concern. Laboratory results below the laboratory limit of reporting (LOR).	Rinsate blank samples were not collected and analysed by the consultant (DP 2009). The consultant (DP 2009) provided soil samples were recovered directly from the auger by the Environmental Scientist using disposable latex gloves and no additional sampling equipment was utilised therefore negating the need for decontamination. The auditor considers this a non-conformance and does not accept the consultants (DP 2009) explanation. The auditor notes a rinsate blank should have been collected from the auger. However given this assessment was a Phase 1 with some preliminary sampling and subsequent investigations have occurred across the site (CDM 2013) this oversight is considered unlikely to materially affect the outcome of the site audit. Rinsate blank samples were collected during the groundwater investigation works conducted by the

Parameter	DQIs	Requirement	Auditor Assessment
			consultant (CDM 2013), with no COPCs reported above laboratory LORs. No rinsate blank samples were collected during the soil sampling works as conducted by the consultant (CDM 2013). The consultant (CDM 2013) reported no rinsate samples were necessary as samples were collected using disposable nitrile gloves and taking the sample from the centre of the disposable push-tube liner or from undisturbed materials from the centre of the excavator bucket. The auditor notes that the analytical data presented by the consultant does not show a pattern of sustained elevated impact (with the exception of some variable metals results, which is attributable to the natural background levels). As such, the auditor does not believe these data have been compromised, and the lack of rinsate blank sample data across all soil sampling field works does not affect the overall reliability of the analytical data. Rinsate blanks were not collected during the validation works. Based on the contaminants of concern, rinsate blanks were not required. Rinsate blanks were also not collected during the additional investigation works (WSP 2017b). However, the consultant indicated that as disposable gloves were work during sampling, the potential for cross-contamination would be low. Based on the laboratory results and the sampling methodology adopted, the auditor concurs with the consultant's opinion (WSP 2017b).
Accuracy	Trip blanks	Collected at a rate of 1 per day of sampling where primary contaminants of concern include volatiles. Analysed for volatiles of concern. Laboratory results below laboratory LOR.	Laboratory prepared trip blanks were not submitted by the consultant (DP 2009), with no explanation provided. The auditor considers this a minor non-conformance unlikely to affect the representativeness of the data as the TPH and BTEX results of all soil sampling activities do not show a pattern of sustained elevated impact. As such, the BTEX/TPH concentrations in soil are considered representative of site conditions. Seven laboratory prepared trip blanks were submitted for the soil sampling works, all results were less than the LOR. Trip blanks were not submitted for the groundwater sampling works. The consultant (CDM 2013) did not discuss why no trip blanks were collected during groundwater sampling. The auditor considers this a minor non-conformance unlikely to affect the representativeness of the data as rinsate samples and trip spike samples were prepared and analysed for the groundwater sampling activities, with both sets of samples reporting favourable results. As such, the BTEX/TPH concentrations in groundwater are considered representative of site conditions. A trip blank was collected during the additional investigation works undertaken within the proposed child care centre (WSP 2017b). Volatiles (TRH, BTEX and napthalene) were reported at less than LOR in the trip blank sample, indicating minimal volatile loss and no cross-contamination.
	Trip spike	Collected at a rate of 1 per batch where primary contaminants	Laboratory prepared trip spikes were not submitted by the consultant (DP 2009), with no explanation provided. The auditor considers this a minor non-

Parameter	DQIs	Requirement	Auditor Assessment
		of concern include volatiles. Laboratory results / recovery within 30 % of the spiked concentration.	conformance unlikely to affect the representativeness of the data as the TPH and BTEX results of all soil sampling activities do not show a pattern of sustained elevated impact. As such, the BTEX/TPH concentrations in soil are considered representative of site conditions. Eight laboratory prepared trip spikes were submitted by the consultant (CDM 2013) for the soil sampling works and one laboratory prepared trip spike was submitted by the consultant (CDM 2013) for the groundwater sampling works. All reported acceptable results. One trip spike was collected during the additional investigation works (WSP 2017a), with a reported recovery ranging between 85 % and 86 % and were within acceptable levels indicating minimal volatile loss and no cross-contamination.
Accuracy	Laboratory surrogate spikes	Surrogate spikes to be performed as required by NATA accreditation, generally per sample analysed.	Surrogate recoveries ranged from 19-140 % for metals, organics and inorganics and were within laboratory control limits. Overall, the RPDs of the surrogate spike recoveries do not indicate a sustained pattern of reduced precision by the testing laboratory and the accuracy of the results are acceptable for assessing the suitability of the environmental condition of the site.
	Laboratory method blanks	Laboratory method blanks to be performed as required by NATA accreditation, generally 1 blank per batch. Results to be below laboratory LOR.	All laboratory method blanks < LOR.
	Laboratory control samples (LCS)	LCS to be performed as required by NATA accreditation, generally one per 20 samples per batch.	LCS recoveries ranged from 11-140 % for metals, organics and inorganics and were within the laboratory control limits. Overall, the RPDs of the laboratory control samples do not indicate a sustained pattern of reduced precision by the testing laboratory and the accuracy of the results are acceptable for assessing the suitability of the environmental condition of the site.
	Laboratory matrix spikes (MS)	MS to be performed as required as NATA accreditation, generally one per 20 samples per batch. Recoveries to be within 70-130 % or 30-130 % (phenols only).	MS recoveries ranged from 62-140 % for metals, organics and inorganics and were within the laboratory control limits. The auditor concurs with the consultant's findings and considers that this does not reduce the precision of the testing laboratory or the accuracy of the results used for assessing site suitability.
Soil Sampling and Analytical Schedule and Sampling Methodology			
Representa-tiveness	Soil sampling locations	Samples to be collected on a representative basis	As part of the DP 2009 investigation, a total of 41 locations were installed across the entire site; with 19 samples collected from the stockpiles. The number of

Parameter	DQIs	Requirement	Auditor Assessment
		consistent with the CSM.	locations installed during the initial DP investigation provided limited coverage however locations were installed targeting known potential areas of concern and associated COPCs identified as part of the site history review. Even though the number of locations installed were not in accordance with Table A, EPA 1995, the auditor considers that the number of locations installed were sufficient to provide an assessment of soil conditions across the site. DP 2009 recommended the completion of additional investigation works to assess site suitability. As part of the ESA completed by CDM (CDM 2013), sampling was targeted to each subarea including the following: • Superlot 1 – 4 boreholes; 30 testpits; 9 stockpiles; • Superlot 2 – 27 testpits and 2 boreholes; • Area A – 3 testpits; • Area C – 4 testpits; • Area X – 47 testpits, 3 boreholes and 2 stockpiles; • Ara Y – 15 testpits and 2 boreholes; • Collection of 33 samples for asbestos. Superlot 1 and 2 required a minimum of 50 sampling locations, Areas C, X and Y required additional sub-division and Area A required a minimum of 5, as outlined in Table A of EPA 1995. The previous consultant (DP 2009) conducted a total of 41 targeted surface sampling locations at the site, which did not meet the recommended minimum number of locations as outlined in EPA 1995. Additional sampling was recommended by the consultant (DP 2009) and documented in the SAQP (CDM 2012). In general, the auditor considers the sampling density and strategy as adopted by the consultant (CDM 2012 and 2013) acceptable for the purposes of the Phase 2 ESA. It is noted however, that the entire ECBH was not assessed, with Superlot 3, Area B, Area P and Area Q were not intrusively investigated by CDM Smith (2013) and therefore site suitability has not been assessed. During the assessment of the proposed childcare centre (WSP 2017b), a total of seven sample locations were installed targeting the surface soil profile. The number of soil sampling locations and the rationale adopted by the consultants during the site investigations provided sufficient coverage noting the potential areas of concern and associated COPCs identified as part of the site history review.
	Soil sampling depths and intervals	Soil sampling depths should be consistent with the anticipated distribution of contamination as detailed in the consultant's CSM.	The sampling depths and intervals at each of the sampling locations were appropriate given the identified potential contamination sources and the site geology. Soil samples were collected from the fill material, with selected samples also collected from the underlying natural soils. The sampling depth were generally appropriate to assess the vertical extent of contamination with numerous sampling locations extending to the natural soils.

Parameter	DQIs	Requirement	Auditor Assessment
			Based on the nature of the remediation works completed at the site, final validation samples were collected from a mixture of natural soils and fill.
	Soil sampling methodology	Soil samples to be collected using a methodology which is appropriate for the primary contaminants of concern.	Sampling by DP (DP 2009) was undertaken directly from the backhoe or handauger; whilst samples collected by CDM (CDM 2013) were collected directly from undisturbed material within the centre of the excavator bucket; from the centre of the push tube liner or from the centre of the undisturbed materials at the centre of the handauger using hand protected by a nitrile glove. Sampling by WSP was undertaken as follows: • Samples from excavations where friable asbestos had been removed were collected as manual grab samples direction from the excavation walls and floors (WSP 2017a); and • Samples during works within the proposed childcare centre were collected using hand tools from a depth of 0.1 m below the surface. Samples were collected via hand tools, i.e, spade (WSP 2017b). During sampling, the consultants reported that disposable gloves were used, with gloves changed per sample collected. Soil samples were immediately transferred into laboratory supplied glass jars, completely filled to minimise headspace and capped immediately to minimise loss of volatiles. Sample jars were places into a cooled, insulated and sealed container for transport to laboratory under chain of custody conditions. Additional samples were collected and placed in plastic zip-lock bags and screened in the field for VOCs (CDM 2013). Samples collected for asbestos (CDM 2013, WSP 2017a and WSP 2017b) were collected in accordance with the WA DoH 2009 and NEPM 2013. Samples were collected in 0.5 L sealed bags. Sampling was generally appropriate to identify gross levels of bonded asbestos impact and / or significant friable / asbestos fines impact. The auditor considers that the sampling methods adopted by the consultant (DP 2009, CDM 2013, WSP 2017a and WSP 2017b) during the investigation and validation works are considered appropriate and are not likely to affect the representativeness of the soil data
	Groundwater sampling locations	Groundwater sampling locations to assess areas of concern, allow for lateral delineation of contamination and assess the groundwater flow direction.	A total of 12 monitoring wells were installed across the site. The number of monitoring wells installed across the site were sufficient to assess groundwater conditions across, both vertical and lateral and groundwater flow direction. The auditor considers that the number of monitoring wells installed by CDM (CDM 2013) were sufficient to assess groundwater conditions across the site.

Parameter	DQIs	Requirement	Auditor Assessment
Representa-tiveness	Groundwater well construction	Wells to be constructed in accordance with the current version of the Minimum Constructions Requirements for Water Bores in Australia, and screened to target the likely contaminated portion of the water column.	The monitoring wells were installed by combination geoprobe and solid flight auger advancement. The groundwater monitoring wells were constructed using Class 18 uPVC 50 mm inside diameter machine threaded casing and 0.4 mm slotted screen and casing. Wells were backfilled with filtered sand of 2 mm. The filter pack was placed around the screened section of the well to approximately 0.5m above the top of the screen. Fine-grained bentonite pellets were placed above the sand filter pack around the well for 0.5 m and was slightly wetted to ensure an adequate seal was formed to prevent surface infiltration into the well. The remainder of the well was then backfilled using clean materials removed during drilling to approximately 0.2 m from the surface. A lockable well cap was then inserted and a steel well monument was installed and secured with concrete at the top to prevent tampering and damage. A copy of the borelogs was provided in CDM 2013 with a summary also provided in the report and which provides sufficient detail on the construction of the monitoring wells. The screen interval in all monitoring wells was installed targeting the natural materials (shale). The bentonite 'plug' at the monitoring well locations was generally installed approximately 0.5-1.0 m in thickness above the sand filter pack, thereby limiting the potential for surface water infiltration. Overall, the auditor considers that the monitoring wells were suitably constructed and developed to enable an assessment of groundwater quality at the site. The auditor considers that the monitoring wells were suitably installed in accordance with relevant guidelines and the screen placement was suitable to suitably assess groundwater conditions at the site.
	Groundwater sampling methodology	Groundwater samples to be collected approximately 7 days after well installation and development. Groundwater samples to be collected using low flow methods (where it can be demonstrated that this is appropriate), or by purging at least 3 well volumes, until field parameters have adequately stabilised.	The wells were developed using a high powered submersible Monsoon Pump. The pump was used to disturb the water column within the well annulus to remove any groundwater and well debris that may have been introduced during the installation process. Development volumes were variable depending on the hydraulic conductivity; however, approximately 20 L was removed from each well or until the well was purged dry. Wells were then left to recharge and stabilise for approximately 7 days prior to purging and sampling. Measurement of the standing water level in each groundwater monitoring well was undertaken prior to purging, using an electronic interface probe. Both the standing water level and the depth to the base of the well were measured. All newly installed wells were purged using dedicated 'medical grade' bonded tubing and a low flow bladder pump. Purging was continued with frequent measurements of the water quality until the water quality parameters stabilised or until the well went dry.

Parameter	DQIs	Requirement	Auditor Assessment
			Water quality parameters including, temperature, electrical conductivity, dissolved oxygen, redox potential and pH were measured during purging using a calibrated water quality meter. Sampling of the monitoring wells was completed using the same methods as for purging and was only completed following the stabilisation of the water quality parameters. Samples were collected using the bladder pump directly into laboratory prepared bottles. Samples for heavy metals analysis were first filtered through 0.45 micron filters prior to being poured into a bottle. All bottles were then sealed immediately using a Teflon lined cap, labelled and placed on ice. The groundwater sampling methods are considered appropriate given the geology encountered on-site. The majority of field parameters were within the 10% of each other upon sampling.
	Soil and groundwater sampling containers	Soil samples to be collected into laboratory supplied, clean unpreserved Teflon lined jars. Groundwater samples to be collected into laboratory supplied, clean and appropriately preserved sampling containers.	Soil samples were immediately placed in laboratory supplied samples jars which were sealed tight and placed on ice for transport to the analytical laboratories. Bulk soil samples (0.5 L) collected for analysis of asbestos during the sampling (both investigation and validation works were collected in plastic zip-lock bags accordance with the WA DoH 2009 sampling protocols. Groundwater samples were immediately placed into appropriately preserved containers provided by the laboratory.
Representa-tiveness	Soil and groundwater sampling equipment decontamination	Soil sampling equipment to be decontamination between sampling locations or between sampling depths; and monitoring well locations where significant contamination is encountered.	The consultant (CDM 2013, WSP 2017a and WSP 2017b) reported that decontamination of the sampling equipment (for both investigation and validation works) was undertaken between sampling locations using phosphate free detergent and water. All samples were collected during new disposable nitrile. The auditor considers the sampling methods employed by the consultants during the investigation and validation works are generally acceptable and are unlikely to have resulted in significant cross-contamination between sample locations and a review of the available analytical data does not indicate that this has occurred.
	Soil sample contamination screening	Soil samples to be screened for contamination via visual / olfactory observations and photo-ionisation detector (PID) measurement.	As part of the Phase 2 ESA, the consultant (CDM 2013) provided borelogs detailing observations of material types; visual and olfactory observations; sample depths; and soil moisture / water observations, where present. Soil samples were also screened in the field using a PID during the field investigation. Borelogs were not provided by DP in the DP 2009 report. While this is considered a non-conformance, given eh preliminary nature of the assessment and completion of the Phase 2 ESA (CDM 2013), this omission is considered unlikely to materially affect the outcome of the site audit.

Parameter	DQIs	Requirement	Auditor Assessment
			The consultant (DP 2009) did not report measure or record PID measurements. The auditor considers this a minor non-conformance unlikely to affect the representativeness of the data as soil samples were analysed by a NATA accredited laboratory. During the assessment of the area for the proposed childcare centre, WSP (WSP 2017b) did not provide borelogs. However, sufficient information detailing observations, site conditions and geological conditions was provided in the consultant's report. In addition, the consultant did not undertake field screening by PID. However, the consultant (WSP 2017b) considered that based on the absence of observations and the absence of odours, this was not considered an issue. In addition, all samples were analysed for volatiles. The auditor concurs with the consultant's opinion and considers this a minor non-conformance and does not affect the outcome of this audit. Field notes were provided as part of the validation report (WSP 2017a). The field notes were sufficiently detailed providing information on site conditions and presence / absence of asbestos.
	Sample storage and transport	Samples to be placed in an insulated container and chilled. Samples to be transported to laboratory under chain of custody conditions.	All soil samples were transported in ice-cooled chests (less than 6°C), under chain of custody conditions, to laboratories that were NATA accredited for the analysis performed.
Representa-tiveness	Laboratory sample receipt advice	No damaged containers. No samples submitted in containers which have not been chilled. No samples to be submitted without sufficient times to comply with recommended holding times.	Laboratory sample receipt advice provided by the nominated laboratories confirmed that all samples were received in suitable condition, unless otherwise noted and listed herein **Table 5.1**.
	Holding times	Samples to be extracted and analysed within recommended holding times.	All samples extracted and analysed within holding times.
	Analytical Method	Samples to be analysed using NATA accredited methodology.	Laboratories used for the investigation works (DP 2009 and CDM 2013) included: Envirolab (primary) and ALS (secondary). Laboratories used for the validation and additional investigation works included (WSP 2017a and WSP 2017b): ALS (primary) and SGS (secondary). Qualitative identification of Asbestos fibre in bulk and soil samples collected during the validation works was

Parameter	DQIs	Requirement	Auditor Assessment
			undertaken at WSP Corporate Laboratories, by polarised light microscopy, including dispersion staining techniques using AS4964 (2004) and supplementary in-house laboratory procedure (LP1 - Identification of Asbestos Fibres). Asbestos filters (collected during the air monitoring works) were examined at WSPs Sydney Laboratory in accordance with N.O.H.S.C (April 2005) Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, WSPs Laboratory Procedure (LP2 Counting of Asbestos Fibre) and NATA Accreditation No:17199, accredited for compliance with ISO/IEC: 17025. Laboratory certificates were NATA accredited. The primary laboratory (Envirolab) and the secondary laboratory (ALS) employed for the chemical analyses used analytical methods which were considered appropriate for the identified COPCs at the site and for which the laboratories were NATA accredited. Some of the LORs for SVOCs were higher than the adopted groundwater criteria however given no soil sources or impacts were identified this is considered a minor no-conformance and unlikely to affect the comparability of the data.
Complete-ness	Sampling, analysis and quality plan completeness	100 % of sampling, analysis and quality plan to be implemented.	The auditor was not involved in the review of any SAQP previously prepared as part of the DP investigation. However, a SAQP was prepared for the supplementary detailed ESA completed by CDM in 2013. The SAQP was reviewed by the auditor, with comments provided in IAA 0503-112-01 dated 17 August 2012 (JBS42270-51555). As part of the development of the RAP (Coffey 2015), a sampling plan was prepared detailing the works for the proposed validation sampling. The RAP was reviewed by the auditor with suitability of the RAP provided in the Section B SAR, dated August 2015 (JBS&G 2015). In addition, numerous emails were sent between the client (Luke Wilson, WSP) and the auditor detailing validation methodologies and strategies for various areas of the site. These have been detailed in **Section 1.4** and provided in **Appendix B.** The proposed validation methodologies were reviewed and accepted by the auditor.
	Field documentation	All relevant field documentation to be collated including sampling logs and calibration records.	As part of the DP 2009 investigation, soil logs were not provided in the report. While this is considered a non-conformance, given the preliminary nature of the assessment and completion of a supplementary detailed ESA (CDM 2013), the omission of the soil logs is considered unlikely to materially affect the outcome of the site audit. DP 2009 also did not report, measure or record PID measurements. The auditor considers this a minor non-conformance and I unlikely to affect the representativeness of the data as soil samples were analysed by a NATA accredited laboratory. As part of the ESA completed in 2013, the consultant (CDM 2013) provided borelogs, field screening results, groundwater field data and relevant site plans showing

Parameter	DQIs	Requirement	Auditor Assessment
			the locations of all borehole, monitoring wells and testpit locations, respectively. The consultant (CDM 2013) reported that all field equipment used during the works (including PID and water quality meter) were calibrated at the time of sampling and was suitably functioning. Copies of relevant calibration data were included in the report. During the assessment of the area for the proposed childcare centre, WSP (WSP 2017b) did not provide borelogs. However, sufficient information detailing observations, site conditions and geological conditions was provided in the consultant's report. WSP did not undertake field screening using a PID. However, this is considered a minor non-conformance and does not affect the outcome of this audit. Field notes were provided as part of the validation report (WSP 2017a) and were considered to be sufficiently detailed providing information on site conditions and presence / absence of asbestos.
	Laboratory documentation	All relevant laboratory documentation to be collated, including chain of custody records, sample receipt advice and analytical reports.	The consultant provided all relevant COC documentation; laboratory sample receipt advice; and full laboratory certificates in the reports. However, the consultant (CDM 2013) did not include the ALS analytical certificates for the soil inter-laboratory duplicates and therefore the auditor cannot verify the results reported in the summary tables. While this is considered a non-conformance, given the sufficient intra-laboratory duplicates were collected and the results of all soil sampling activities do not show a pattern of sustained elevated impact (with the exception of some variable metals results, which is attributable to the natural background levels). As such, the concentrations in soil are considered representative of site conditions.
	Critical sample validity	All critical sample data to be valid.	The auditor considers that the data is considered reliable, for the purpose of the soil and groundwater investigation and subsequent validation works.
	Sampling, analysis and quality approach	Adequately comparable sampling, analysis and quality approach to be used throughout the project.	The auditor considers that the data is comparable, as consistent sampling methods were employed throughout the direction of the investigation and subsequent validation program and analysis was undertaken by NATA accredited laboratories. Consistent field staff were employed by each consultant during each phase of investigation and validation works. However, the auditor notes that during the asbestos clearance works in Area G / Stockpile 1; Stockpiled Waste – Areas S & T and Haul Roads, an unlicensed assessor was reported to have completed the works. Based on this, the consultant (WSP 2017a) provided further documentation demonstrating the suitability and competence of the staff during these works. Taking this into consideration, the auditor considers that competent field staff were engaged by WSP during all phases of the validation works, particularly the asbestos clearance works.
	Sampler	Samplers used throughout the project to have sufficient experience.	

5.1 Audit Findings

The quality assurance/quality control measures employed by the consultants (DP 2009, CDM 2013, WSP 2017a and WSP 2017b) were checked and found, overall, to adequately comply with the requirements outlined in EPA 1997, DEC 2006 and NEPC 2013. The laboratory QA/QC results have been reviewed and the results indicate that the analytical laboratories were achieving adequate levels of precision and accuracy. As such, the sampling, analytical and quality protocols undertaken by the consultant were considered to be adequately reliable for the purpose of assessing the contamination status of the site; and are suitably reliable and useable for the purpose of this audit.

6. Assessment Criteria

6.1 Soil Criteria

The site was sampled as part of the broader site and therefore the assessment criteria presented below is for the entire site which incorporates the site.

At the time, the ESA fieldworks were conducted, the consultant (CDM 2013) stated the planned future use of the site will consist of mixed commercial and open space uses. Accordingly, the most stringent assessment criteria were used to consider these potential uses.

Based on the proposed future use of the site, the site (CDM 2013) was assessed against the following:

- Health Investigation Levels (HILs): HIL E – Parks, recreational open space, playing fields including secondary schools.
- HIL F – Commercial and Industrial including premises such as shops and offices as well as factories and industrial sites.
- Ecological Investigation Levels (EILs) – Interim EILs for the urban setting based on consideration of phytotoxicity, ANZECC B Levels ad soil survey data from urban residential properties.
- NSW EPA Service Station Guidelines (EPA 1994).
- Western Australian Department of Health (WA DoH) *Guidelines for Remediation and Management of Asbestos Contaminated Sites in Western Australia* (WA DoH 2009) for asbestos.

It is noted that the proposed development for the wider ECBH will comprise commercial / industrial landuses. Taking into consideration the proposed future use of the site, the soil acceptance criteria used by the consultant as part of the validation works (WSP 2017a) is based on the NEPC 2013 Schedule B1 and includes the following:

- No visible fragments of asbestos containing material (ACM) present at the surface (with surface defined as the upper 0.1 m);
- No respirable fibres of asbestos identified in soil validation samples;
- The concentration of asbestos fines (AF) and / or friable asbestos (FA) should not exceed 0.001 % w/w; and
- If one or more fragments of bonded ACM are found in the validation samples, then the concentration of bonded ACM should not exceed 0.05 % w/w for the planned commercial / industrial use.

It is understood that the portion of the site identified as Parts Lot 2 and 3 within Section A in DP 8681; and Part Lot 7 and Part Lot 10 in DP 830836 will be developed as a child care centre. Based on the proposed future use of this area, the additional investigation works undertaken by WSP (WSP 2017b) were assessed against the NEPC 2013, including the following:

- Health Investigation Levels (HILs): HIL A – Residential with garden / accessible soil, also including children's day care centres, preschools and primary schools.
- Health Screening Levels (HSLs): HSL A / B – Residential – for petroleum hydrocarbons – vapour intrusion. The consultant adopted the most conservative criteria for sand at a depth of 0 - < 1 m depth.
- HSLs for asbestos in soil: HSL A – Standard residential.

- Bonded asbestos in soil (> 7 mm ACM) – 0.01 % w/w
- Friable asbestos and asbestos fines in soils (< 7 mm) – 0.001 % w/w
- Surface lying asbestos (all forms) – none visible.

- NEPC 2013 Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for Urban Residential areas, with EILS adopted for the top 2 m of the soil profile and ESLs adopted for coarse grained soil textures.

6.2 Groundwater Criteria

The groundwater criteria adopted by the consultant (CDM 2013) during the groundwater investigation, was based on the following:

- Trigger values relating to the protection of "slightly to moderately disturbed ecosystems" (freshwater) based on 95% protection levels (ANZECC/ARMCANZ 2000).

The consultant (CDM 2013) reported the site and offsite areas are located in an urbanised area with ready access to reticulated, potable water. Therefore, the potential for groundwater to be used for drinking water was considered negligible and the drinking water guidelines do not apply.

Similarly, the consultant (CDM 2013) reported the receiving water of Eastern Creek is not known to be used for recreational purposes and therefore the recreational water quality guidelines do not apply.

6.3 Audit Findings

The previously adopted soil criteria (CDM 2013) have been checked against and were consistent with relevant criteria made or endorsed by the EPA. Specifically, the consultant appropriately adopted the most conservative set of criteria relating to the mix of proposed future uses, consistent with guidance provided in DEC 2006. The auditor also notes that the previously adopted criteria were generally lower than the current adopted NEPC 2013 levels.

The consultant (CDM 2013) adopted DoH 2009 for the asbestos criteria. In the absence of any NSW or national endorsed criteria for asbestos in soil at the time these works were undertaken (i.e., prior to NEPC 2013), the auditor has exercised professional judgement in accordance with the requirements of DEC 2006 and was satisfied that the asbestos criteria in WA DoH 2009 are appropriately protective of human health and represent some, if not the most, conservative criteria for asbestos in soil in the world, as at the time of the audit. On this basis, the asbestos criteria adopted by the consultant are considered appropriate and accepted by the auditor for use in the assessment and validation of asbestos in soil at the site, noting that the criteria were endorsed in NEPC 2013 by the time the remediation works were undertaken.

The auditor notes that as part of the preparation of the revised RAP (Coffey 2015) for the site, all previous soil data was reassessed in accordance with the NEPC 2013.

The soil criteria adopted by the consultant during the validation works (WSP 2017a) and additional investigation works (WSP 2017b) have been checked against, and were generally consistent with, criteria endorsed by the EPA. It is noted that the criteria adopted by the consultant (WSP 2017a and WSP 2017b) takes into consideration the following landuses:

- Wider ECBH – Commercial / industrial landuse; and
- Parts Lot 2 and 3 within Section A in DP 8681; and Part Lot 7 and Part Lot 10 in DP 830836 - Child care centre.

The auditor notes that the previous investigation reports (CDM 2013) and the RAP (Coffey 2015) were prepared based on a variety of landuse scenarios. This audit has been prepared solely on the above-mentioned landuses. If the site is to be developed for landuses other than those described

above, re-assessment of the site will be required, particularly if landuses change to a more sensitive landuse setting.

The consultants (CDM 2013, WSP 2017a and WSP 2017b) also took into consideration aesthetic issues (i.e., odours and discolouration) as part of the site assessment.

The groundwater investigation criteria adopted by the consultant have been checked against, and were sourced from relevant EPA endorsed guidelines, namely ANZECC/ARMCANZ 2000. The adopted criteria are considered appropriate for assessing the potential impacts to ecological receptors relevant to the site setting (i.e., fresh water in a semi-urban environment).

Reference to each specific PAH, OCP, OPP, PCB etc groundwater criteria was not provided by the consultant in the report. The consultant's exclusion of drinking water and recreational criteria in the groundwater assessment was based on the site being located in an urbanised area and Eastern Creek is not known to be used for recreational purposes. The auditor does not accept this justification as appropriate, however, notes the estimated concentrations of total dissolved solids (TDS) provided by the consultant were sufficiently high to indicate groundwater would be unsuitable for drinking or recreational purposes. As such, the auditor considers the omission of drinking water guidelines as part of the groundwater assessment did not have any material impact on the conclusions drawn regarding groundwater quality or the potential migration of contamination from the site.

Overall, the auditor considers that the soil and groundwater criteria adopted by the consultants (CDM 2013, Coffey 2015, WSP 2017a and WSP 2017b) were appropriate for the nature and extent of contamination that may be present beneath the site and assessing the suitability of the site for the proposed uses.

7. Site Investigation Results

7.1 Field Observations

A summary of field observations encountered during the field investigations undertaken by DP and CDM in 2009 and 2013, respectively, are described as follows:

- The stockpiles sampled in the southern portion of the site generally comprised a clayey matrix with various proportions of building rubble (concrete, brick, metals rods), rootlets, sandstone, plastics, cans, bottles, road base, pipes and scrap metal. Potential asbestos containing materials were noted in a few stockpiles.
- Building rubble was encountered within area of concern (AEC) 2 to AEC 17.
- Surface or near surface fragments of potential ACM were noted within AEC 2, 3, 5, 6, 7, 8, 10, 11 and 16.
- Ash was encountered in the surface profile at A2S1.
- Although the majority of the surface samples were logged as filling it is possible the ground surface had been disturbed through past demolition works giving the impression of non-natural soils.
- Superlot 1 - Fill materials in Superlot 1 were encountered between approximately 0-1.1 m bgs and comprised dark brown silts and clays with inclusions of demolition waste, bricks, concrete, rusted metal, titles, roots, bitumen, rope, plastic, ceramic pipes, nails, cables, Steel, plastic bags at TP05L1, TP12L1, TP19L1, TP27L1, TP28L1, TP29L1, TP31L1, TP32L1 and TP33L1. The fill was underlain by material soils comprising clayey silt and silty clay with trace gravels between 0.5 m and 6 m bgs. Shale was encountered from 3.4 m bgs to a depth of greater than 11 m bgs.
- Area A - Natural materials were encountered between approximately 0-1 m bgs and comprised clayey silt and silty/gravelly clay with trace gravels and weathered shale.
- Area X - Fill materials were encountered between 0-0.8 m bgs and comprised brown/black silt, demolition waste, gravels, bricks, metal pipe, roots, asphalt, plastic, charcoal, rubbish, wood, tiles, bottles, concrete (TP11X, TP15X, TP18X, TP28X, TP29X, TP36X, TP38X, TP42X and TP47X). The fill was underlain by natural soils comprising clayey silt and silty/gravelly clay with trace gravels and weathered shale. Shale was encountered from 3.3 m bgs to greater than 6 m bgs.
- Area Y - Fill materials were encountered between 0-0.05 m bgs and comprised brown silts with demolition waste, tiles, bricks, concrete and roots (TP6Y). The fill was underlain by natural clayey silt and silty / gravelly clay soils with trace gravels and weathered shale. Shale was encountered from 1.4 m bgs to greater than 8 m bgs
- Odours were noted across the site including:
    - Tar odour at TP27L1, TP29L1, TP31L1, TP32L1 and SP2L1a-b-c within fill in Superlot 1.
    - A sulphur odour was noted at TP47X at 0.5 m bgs in Area X.
- A PID was used to screen any volatile hydrocarbons during the investigation; no significant volatile hydrocarbons were detected during the investigation during screening.
- No oily substances or petroleum hydrocarbon odour were observed in the groundwater during monitoring well development, purging and groundwater sampling. A slight sulphur odour was noted during purging of BH7L1 and BH30L1.
- The inferred groundwater flow direction for groundwater present in the natural materials underlying the site was calculated in a north-easterly direction.

- A summary of groundwater quality parameters collected during groundwater sampling undertaken in 2013 were reported as follows:
  - pH ranged from 6.01 to 6.81.
  - Electrical conductivity ranged from 17.95 mS/cm to 31.778 mS/cm.
  - Dissolved oxygen ranged from 0.83 mg/L to 3.8 ppm.
  - Redox potential ranged from -58.8 mV to 130.7 mV.

7.2 Soil Analytical Results

A soil investigation was undertaken by DP and CDM in 2009 and 2013, respectively (DP 2009 and CDM 2013). The consultants (DP 2009 and CDM 2013) provided summary tables (**Appendix E**) in addition to detailed laboratory reports and chain of custody documentation.

A summary of the soil analytical results, in comparison to the adopted soil investigation levels (as provided in **Section 6.1**) is provided in **Table 7.1**, as follows.

Table 7.1: Summary of Soil Analytical Results (mg/kg)

Substance	Minimum concentration	Maximum concentration	Exceedance to SIL
Metals			
Arsenic	< 4	29	Exceedance to EIL in one sample at Area X. No exceedances at remaining locations.
Cadmium	< 0.5	22	Exceedance to EIL: • Two locations in Superlot 1; and • One location in Area X No exceedances at remaining locations.
Chromium	7	110	No exceedance
Copper	4	11,000	Exceedances: • EILs - two locations Superlot 1; • Els - one location Superlot 2 and Area A; • EILs - two locations Area X; and • HIL-E and HIL-F – one location in Area X (TP47X-0.1-0.15). No exceedances at remaining locations.
Manganese	4	4600	Exceedances: • EILs - 38 samples Superlot 1; • EILs – 44 samples Superlot 2 and Area A; • HIL-E – 2 locations Superlot 2 and Area A (TP9L2-0-0.5 and TP7L2-0-0.05); • EILs – 15 locations Area Y; • EILs – 61 locations Area X; • HIL-E – six locations Area X (BH20X-1.5-1.6, TP21X-0-0.05, BH22X-0-0.05, TP23X-0-0.05, TP24X-0.1-0.15 and TP28X-0.1-0.1); and • EILs – three locations Area C. No exceedances at remaining locations.
Lead	6	1400	Exceedances: • HIL-E and EILs - AX4S1; and

Substance	Minimum concentration	Maximum concentration	Exceedance to SIL
			• EIL and HIL-E – two samples in Area X (TP47X-0.1-0.5 and TP47X-0-0.4). No exceedances at remaining locations.
Nickel	2	98	Exceedance to EIL at two locations in Area X. No exceedances at remaining locations.
Zinc	3	6800	Exceedances: • EILs - seven locations (DP 2009); • EILs - 14 locations in Superlot 1; and • EILs – six locations Area X. No exceedances at remaining locations.
Mercury	< 0.1	2.2	Exceedance EIL in one sample in Superlot 1. No exceedance at remaining locations.
Volatile Organic Compounds (VOCs)			
Benzene	< 0.2	-	No exceedance
Toluene	< 0.5	-	No exceedance
Ethylbenzene	< 1	-	No exceedance
Total Xylenes	< 3	-	No exceedance
TPH			
TPH C_6-C_{10}	< 25	-	-
TPH C_{10}-C_{14}	< 50	160	-
TPH C_{15}-C_{28}	< 100	1200	-
TPH C_{29}-C_{36}	< 100	1200	-
Sum TPH > C_{10}-C_{36}	< 100	2560	Exceedance to soil criterion (1000 mg/kg) in TP27L1B-0.1-0.15 and TP05L1 in Superlot 1.
PAHs			
Benzo(a)pyrene (B(a)P)	< 1	2	No exceedance
Total PAHs	< 1	16	No exceedance
OCPs			
DDE+DDD+DDT	< 0.3	2.9	No exceedance
Aldrin+Dieldrin	< 0.2	0.55	No exceedance
Individual OCPs	< 0.1	< 0.2	No exceedance
PCBs			
Individual PCBs	< 0.1	-	No exceedance
Semi-Volatile Organic Compounds (SVOCs)			
Individual SVOCs	< 1	-	No exceedance
Bis-2-ethylhexyl phthalate	< 1	5	No exceedance
Diethyl phthalate	< 1	3	No exceedance
Di-n-butyl phthalate	< 1	3	No exceedance
Pentachlorophenol	< 1	-	No exceedance
Volatile Organic Compounds (VOCs)			
Individual VOCs	< 1	-	No exceedance
Asbestos[1]			
Asbestos in Soil (AF or FA)	Not detected at reporting limit	0.0014 % w/w	Exceedance to criteria for AF
ACM	Not detected at reporting limit	4.84 % w/w	Exceedance at SP8L1 and SP9L1 (Superlot 1); TP24L2 (Superlot 2); and TP47X (Area X).

Note 1: DP 2009 – 16 fragments were reported to contain asbestos collected from 16 locations across the site.

7.3 Groundwater Analytical Results

A groundwater monitoring program was undertaken for the entire site.

The consultant (CDM 2013) provided summary tables (**Appendix F**) in addition to detailed laboratory reports and chain of custody documentation.

A summary of the groundwater analytical results, in comparison to the adopted groundwater investigation levels (as provided in **Section 6.2**) is provided in **Table 7.2**, as follows.

Table 7.2: Summary of Groundwater Analytical Results (µg/L)

Substance	Minimum concentration	Maximum concentration	Exceedance to GIL
Metals			
Arsenic	< 1	-	No exceedance
Cadmium	< 0.1	1	Exceeds GILs at BH17L2, BH17Y, BH20X, BH22X, BH2Y, BH3L1B, BH3X, BH6 and BH7L1.
Chromium	< 1	1	No exceedance
Copper	< 1	2	Exceeds GILs at BH17Y
Manganese	420	19,000	Exceeds GILs at BH17L2, BH17Y, BH20X, BH22X, BH3X, BH6 and BH7L1.
Mercury	< 0.05	-	No exceedance
Nickel	< 1	20	Exceeds GILs at BH20X.
Lead	< 1	-	No exceedance
Zinc	26	990	Exceeds GILs at BH17L2, BH17Y, BH20L2, BH20X, BH22X, BH2Y, BH30L1, BH3L1B, BH3X, BH6 and BH7L1.
Volatile Organic Compounds (VOCs)			
Benzene	< 1	-	No exceedance
Toluene	< 1	-	No exceedance
Ethylbenzene	< 1	-	No exceedance
Total xylene (ortho, meta and para)	< 3	-	No exceedance
TPH			
TPH C_6-C_9	< 10	-	No exceedance
TPH C_{10}-C_{14}	< 50	-	No exceedance
TPH C_{15}-C_{28}	< 100	-	No exceedance
TPH C_{28}-C_{36}	< 100	-	No exceedance
PAHs			
Benzo(a)pyrene	< 10	-	No exceedance
Anthracene	< 10	-	No exceedance
Naphthalene	< 10	-	No exceedance
Phenanthrene	< 10	-	No exceedance
Fluoranthene	< 10	-	No exceedance
Total PAHs	< 10	-	No exceedance
VOCs			
Individual VOCs	< 0.001	< 10	No exceedance
SVOCs			
Individual SVOCs	< 0.01	< 10	No exceedance

7.4 Consultant's Interpretations and Conclusions

The consultants (DP 2009 and CDM 2013) provided the following discussion of results, conclusions and recommendations:

7.4.1 Soil

<u>Superlot 1</u>

- All metals concentrations were below the industrial health criteria.

- Mean concentrations of manganese and zinc in soil within the proposed shale woodlands area in the northeast were above ecotoxicity criteria but within published background soil metals concentrations (NEPC 1999).
- No management of heavy metals impacted soil was considered necessary.
- The TPH C_{10}-C_{36} concentration in TP27L1 and TP05L1 contain some bitumen waste and should be managed for aesthetics. No evidence of hydrocarbons was detected in surrounding soil.
- ACM present in the surface soils in locations TP16L1, SP8L1, and SP9L1 will require management.
- Waste material was identified in several locations in the southern portion of the lot. No waste materials were identified in the woodland areas.

Superlot 2 and Area A

- All metals concentrations were below the industrial health criteria. Locations with exceedances of metals concentrations in soil above the ecological criteria did not show signs of stress to vegetation.
- No actions or management of heavy metals impacted soil was considered necessary.
- No significant organic compound concentrations were detected in soil within the lots.
- ACM present at locations TP5L2, TP6L2, TP22L2, TP6L2, TP24L2, TP27L2, TP28L2, TP29L2, TP31L2, and TP32L2 will require management.
- Waste materials were identified in several locations in the southwest, west, northwest and northeast which will require management.
- Wastes identified in woodland areas will require control under a Long-Term Environmental Management Plan (LEMP).

Area C

- Mean metal concentrations in soil were below the ecotoxicity and all health-related criteria. Locations with exceedances of metals concentrations in soil above ecological criteria did not show signs of stress to vegetation.
- No actions or management of heavy metals impacted soil was considered necessary.
- Samples collected from bituminous material on Beggs Road contained TPH. No other significant organic compound concentrations were detected in soil within Area C. No management actions required.
- ACM was not detected in Area C.
- Waste material identified in Area C comprised bitumen road base which will require management.

Area X

- Mean metals concentrations in soil were below the ecotoxicity and all health-related criteria, with exception of manganese and zinc which were above background ranges. There was no evidence of effect on the abundant grasses, shrubs and trees at the Site.
- No actions or management of heavy metals impacted soil was considered necessary, with exception of location TP47X to approximately 0.4 mbgs or until no waste is visually identified.
- No significant organic compound concentrations were detected in soil.
- ACM contained in the surface soils in locations TP11X, TP21X, TP38X2, TP43X, and TP47X will require management.

- Waste material was identified in several locations across the area that will require management.

Area Y

- Mean metals concentrations in soil were below the ecotoxicity and all health-related criteria. Locations with exceedances of metals concentrations in soil above ecological criteria did not show signs of stress to vegetation.
- No actions or management of heavy metals impacted soil was considered necessary.
- No significant organic compound concentrations were detected in soil.
- ACM was not detected in Area Y.
- Waste materials were detected at TP06Y on the western edge of the proposed detention basin and will require management.

The consultant (CDM 2013) concluded that the site may be developed for the proposed uses through the implementation of a remediation strategy and RAP for each proposed development area.

7.4.2 Groundwater

- Concentrations of TPH, BTEX, VOCs, and SVOCs were not detected in any groundwater samples in any locations across the site.
- For SVOCs pentachlorophenol, DDT, endrin, g-BHC (lindane), heptachlor, and 2,4-dinitrophenol laboratory limits of reporting for water analysis were greater than the ANZECC/ARMCANZ 2000 trigger value concentrations. Since these contaminants were not detected in soil, and no concentrations of SVOCs were detected in groundwater at the site, analyses at lower detection limits was not considered necessary, and the analyses performed are satisfactory.
- ANZECC/ARMCANZ 2000 low reliability trigger values can be incorporated for analytes that do not have high reliability trigger values (i.e. some metals, SVOCs (OCPs, PAHs), however given that metals were detected and are considered indicative of background ranges, and SVOC concentrations were not detected in any concentrations the trigger values included in the laboratory report are considered suitable.
- Heavy metals in filtered samples collected from several monitoring wells at the site indicated heavy metals above the ANZECC 2000 freshwater guidelines for protection of aquatic ecosystems, including cadmium, copper (BH17Y location only), manganese, nickel (in BH20X location only), and zinc. Zinc was detected at a mean value of 0.47 µg/L, and present in all groundwater samples above the ANZECC 2000 freshwater criteria.

The consultant (CDM 2013) concluded groundwater at the site contained heavy metal concentrations above freshwater ecosystem criteria, but the source of heavy metals is likely off-site, and any risk to identified potential receptors is considered low. The consultant noted that manganese concentrations in groundwater in the region of the site are known to be elevated. No management/remediation of groundwater is required.

7.5 Audit Findings

The consultant (DP 2009 and CDM 2013) provided tables that were generally accurate and complete, with the following exceptions:

- TPH, BTEX and metals results for a number of soil samples were not presented in the summary tables (specifically, Table 1A as provided in CDM 2013), however, these sample results were provided in a draft version of the report (dated 12 December 2012). It is unclear as to why these sample results were not summarised in the final report. These samples include the following:
  - TP21L1 0.0-0.05 and TP21L1 0.3-0.4;

- TP22L1 0.0-0.05 and TP22L1 0.1-0.15;
- TP23L1 0.0-0.05 and TP23L1 0.45-0.55;
- TP24L1 0.0-0.05 and TP24L1 0.95-1.05;
- TP25L1 0.0-0.05 and TP25L1 0.1-0.15;
- TP26L1 0.0-0.05 and TP26L1 0.1-0.15;
- TP27L1 0.0-0.05, TP27L1B 0.1-0.15 and TP27L1 0.9-1.0;
- TP28L1 0.0-0.05, TP28L1 0.45-0.55 and TP28L1 1.2-1.3;
- TP29L1 0.0-0.05 and TP29L1 0.1-0.15;
- BH30L1 0.0-0.05, BH30L1 0.1-0.15, BH30L1 4.0-4.1, and BH30L1 8.0-8.1; and
- TP31L1 0.0-0.05 and TP31L1 0.5-0.6;

- It is noted the above listed sample results were generally consistent with no results reported at concentrations exceeding the laboratory LORs and/or adopted SAC with the following exceptions:
  - Manganese was reported at concentrations exceeding the adopted SAC in the majority of the above referenced samples;
  - Zinc was reported at concentrations exceeding the adopted SAC in samples TP21L1 0.0-0.05, TP28L1 0.0-0.05, TP28L1 0.45-0.55 and BH30L1 0.1-0.15; and
  - TPH C10-C36 was reported at a concentration exceeding the adopted SAC in sample TP27L1B 0.1-0.15.
- Samples TP9L1 0.0-0.05 and TP9L1 0.1-0.15 (collected 26/09/2012) were incorrectly referenced as TP19L1 0.0-0.05 and TP19L1 0.1-0.15, respectively, on Tables 1A, 1B, 1C and 1D.
- A number of manganese sample results on Table 1A were bolded to indicate a guideline exceedance, however, some of these results were reported below the adopted SAC and as such did not require bolding.
- Sample TP29L1 0.0-0.05 on Table 1B indicates VOCs were not analysed, however, a full VOC analysis was conducted on this sample with all results reported at levels <LOR.
- Low levels of SVOCs were reported for sample TP29L1 0.0-0.0.5, however, these results were incorrectly reported as <LOR on Table 1C. All results reported at levels exceeding the laboratory LOR for this sample were below the adopted SAC (where applicable).
- Asbestos analysis corresponding to sample TP29L1 0.0-0.05 was not summarised on Table 1D (no asbestos was detected in this sample).
- Sample SP28L2 as collected from a stockpile on 3 October 2012 is mislabelled as SP29L2 on Table 2D.
- Samples BH22X 0.0-0.05 and BH22X 0.5-0.6 as provided in Envirolab report #79126 are incorrectly labelled on Table 3D as samples BH22Y 0.0-0.05 and BH22Y 0.5-0.6. In addition, sample BH17Y 0.0-0.05 is incorrectly labelled on Table 3D as sampled on 12 September 2012 (this sample was collected on 19 September 2012).
- Asbestos analysis corresponding to samples TP9X and TP46X were not summarised on Table 4D (no asbestos was detected in these samples). In addition, material sample TP47X was note summarised on Table 4D (this material was confirmed as containing asbestos).

- Sample TP1X 0.0-0.05 as collected on 3 October 2012 is mislabelled as TP2X 0.0-0.05 on Table 4D.

Groundwater was present at the site within the natural clay/shale formation, with no indication of significant groundwater contamination by the contaminants identified in the fill and waste material.

The laboratory procedures were generally appropriate for the identified potential contaminants of concern and the adopted site assessment criteria against which the results were compared.

The site plans provided by the consultants (DP 2009 and CDM 2013) were to scale and adequately identified the sampling locations relevant to the main site features such as boundaries and street frontages. Site plans are included in **Appendix D**.

The consultant (CDM 2013) provided an assessment of aesthetic conditions of fill materials at the site. The assessment of these materials revealed ACM, bitumen/road base fill and demolition wastes. These observations were incorporated into consideration of the proposed remedial strategy (**Section 8**) and are considered appropriate for the purposes of this site audit.

The consultant (DP 2009 and CDM 2013) reported the analysed fill/waste and topsoil contained asbestos above the adopted soil criteria. These results were incorporated into consideration of the proposed remedial strategy (**Section 8**) and are considered appropriate for the purposes of this site audit.

Soil waste classifications were conducted by the consultant (CDM 2013) on soils across the site, however the auditor considers these waste classifications preliminary in nature and additional sampling and analyses will be required during the proposed remediation works at the site.

Superlot 3, Area B, Area P and Area Q were not intrusively investigated by CDM Smith (2013) and therefore site suitability has not been assessed. This area was also not assessed during the recent remediation works, as detailed in **Section 8**. Previous investigations undertaken at the site have identified asbestos as the primary contaminant of concern. Based on this, any potential contamination in the unassessed areas, particularly noting Superlot 3, Area B, Area P and Area Q is likely to be asbestos.

In addition, in a letter dated 1 March 2017 (Coffey 2017) clarifying auditor comments in the JBS&G 2015 SAR and clarifying potential contamination issues within unassessed areas, as described above. Coffey (Coffey 2017) reported that "*these nominated areas had no historical activities which were remarkably different from historical activities across other areas of the site*." Coffey considered that "*unexpected finds would be incidents of contamination discovered unexpectedly during the planned remediation works or construction*". The auditor concurs with the consultant's opinion and further notes that any potential contamination arising in these unassessed areas will be managed under the EMP for the site, as detailed in **Section 9**.

The conclusions reached by the consultant in relation to the soil and groundwater contamination issues are considered appropriate and meet the requirements of the site audit. However, additional sampling is required to adequately conduct a waste classification for materials requiring off-site disposal. Overall, the consultant (CDM 2013) is considered to have obtained and reported results in a manner which enables conclusions to be drawn regarding the need for remediation (**Section 8**) and therefore meets the requirements of the site audit.

8. Remediation and Validation

8.1 Remediation Objective

As outlined in the Phase 1 Early Works RAP (Coffey 2015), the objective of the remediation program was to ensure that the site is suitable for the proposed redevelopment. At the time of the preparation of the Revised Phase 1 Early Works RAP, Coffey 2015, the proposed future use of the land is not known, however was based on mixed uses with potential redevelopment to include bulky good and self-storage; retail centres or aged care and/or health facilities; nature reserves; children playground; detention basins; and associated site infrastructure including roads and services.

The remediation and validation works completed at the site (WSP 2017a and WSP 2017b) were completed based on a commercial / industrial landuse for the wider ECBH site; with a proposed child care centre for part of the site identified as part Lot 2 and 3 in Section A DP 8681 and part Lots 7 and 10 in DP 830836.

8.2 Remediation Options

As part of the development of the RAP, the consultant (Coffey 2015) detailed preferred remedial options for the site. In accordance with DEC 2006, the preferred options for remediation and/or management of contaminated land are summarised as follows, in order of preference:

1. Onsite treatment of soil so that the contaminant(s) are either destroyed or the associated hazard is reduced to an acceptable level.
2. Off-site treatment of excavated soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level.
3. Removal of contaminated soil to an appropriate site or facility, followed where necessary by replacement with clean fill.
4. Consolidation and isolation of the soil on-site by containment within a properly designed barrier.

8.3 Preferred Remediation Approach

Based on the nature and extent of the identified contamination, low human health risk and the proposed redevelopment of the site, the consultant (Coffey 2015) considered the following most viable remediation options for the site:

- Areas identified to have ACM in the surface soils and where significant volumes of asbestos contaminated materials are identified (if any), excavation or removal by other means (such as emu picking) of contaminated surface soil materials, and their transfer and placement to a designated containment area and long-term management;
- Areas identified with only small or minor volumes of asbestos contaminated materials are found to be present or where chemical contamination of soils is identified to be present (if any), these materials will be removed for disposal off-site to a landfill appropriately licenced to accept these materials;
- Large areas of the site to be used for parks, open space and recreational uses that will be fenced and not accessible for use by the public and in which no asbestos contamination has been identified, but where the likelihood of contamination may exist in the future, no remediation will be undertaken. However, as a precautionary measure and to ensure protection of future users and to ensure suitability of these areas for the proposed use, a long-term management plan will be required; and
- Areas which no contamination has been or is identified and for which an appropriate sampling and analytical density has been demonstrated to have been conducted no remediation or long-term management will be required in order for these areas to be suitable.

8.4 Remediation Extent

The consultant (Coffey 2015) reported that the areas requiring remediation are those where asbestos impact has been identified or reasonably expected, with asbestos impact identified at the site as being 'high' or 'low' and are summarised as follows:

- 'High' likelihood areas – includes areas in the vicinity of former and current structures where ACM has been used in construction; stockpiles of uncontrolled fill; and fly tipping; and
- 'Low' likelihood areas – which includes the remainder of the site where activities have not involved the use or illegal placement of ACM.

The areas with a 'high' likelihood of asbestos impact will be remediated by excavation, removal of ACM and asbestos impacted soil prior to the bulk earthworks; with the 'low' likelihood areas to be managed through the implementation of a site management plan, where remediation will only be triggered if asbestos impact is encountered.

The consultant (Coffey 2015) reported that previous investigations indicated that heavy metals may pose an unacceptable risk to ecological receptors in designated open space areas. The consultant recommended that a review of the screening level risk assessment is required in these areas prior to considering remediation and assessing the potential risk that these concentrations may pose to ecological receptors, if any. The consultant noted that as part of the bulk earthworks, the landform on the western portion of the site will be substantially modified, as such the available heavy metal information may not be relevant for the site.

Based on the previous groundwater investigations and as discussed previously in **Section 7.4.2**, consultant (Coffey 2015) considered that remediation and / or management of groundwater is not required at the site. As such, further assessment of groundwater conditions was not required as part of the remediation and validation works (WSP 2017a).

8.5 Preparatory Works

8.5.1 Work Plans, Approvals and Licenses

Prior to the commencement of site remediation works, the following preparatory works were undertaken at the site:

- As reported in the revised RAP (Coffey 2015), a Construction and Environment Management Plan (CEMP) was prepared for the site prior to the commencement of construction and remediation works by Enviropacific Services. The CEMP was reviewed by the auditor prior to the commencement of site works.
- Based on the presence of asbestos (both friable and bonded) at the site, an Asbestos Management Plan (AMP) was prepared by Enviropacific Services. The AMP was prepared in accordance with the requirements of RAP and in accordance with auditor requirements (stipulated in audit conditions of the Section B SAS, dated 4/8/15). The AMP was reviewed by the auditor on the 24 January 2017 (email dated 24/1/17, refer to **Appendix B**).
- Notification to WorkCover was also completed for the works associated with the removal of 'friable' asbestos.
- As reported in the revised RAP (Coffey 2015) and in compliance with the A site-specific safety plan (SSP) was also prepared for the site prior to the commencement of the remediation and validation works, in accordance with the NSW *Work Health and Safety Act* 2010 and associated regulations and codes of practice.
- The remediation works form part of the redevelopment of the site which has planning approval as a under SSD # 5175 (refer to **Section 1.3**). Based on the change in the nature and extent of the Phase 1 Early Works, a Section 96 was submitted by the Certifying Authority for an

amendment, with the RAP (Coffey 2015) submitted to support the application, prior to the commencement of the site works.

It is understood that all relevant document and licenses were completed by the Principal Contractor, Enviropacific Services and were obtained prior to the commencement of the remediation works, in accordance with the requirements of the RAP.

8.5.2 Site Establishment and Ground Preparation

Prior to the commencement of the site remediation works, the consultant (Coffey 2015) reported that the following works were required to be completed:

- Installation of permanent and/or temporary fencing to designate the remediation zones at the site and to restrict access by unauthorised personnel and will be maintained throughout the duration of the works.
- Based on the presence of asbestos contamination previously identified at isolated locations across the site within the upper 0.15 m soil profile (comprising topsoil, grass and the root zone of the grass cover), the consultant (Coffey 2015) proposed that the following:
    - Slash the grass across the entire site;
    - In areas where there is a high likelihood of asbestos occurrence, remaining vegetation will be sprayed with a non-persistent herbicide. Once the vegetation has died and dried out, a mechanical rake will be used to remove the residual organic matter.

Photographic documentation provided in the validation report (WSP 2017a) confirms that the above-mentioned works were suitably undertaken by the Principal Contractor, Enviropacific Services, prior to the commencement of the remediation works and were not presented or discussed in the validation report (WSP 2017a).

8.6 Remediation and Validation Works Completed – Wider ECBH

In accordance with the requirements of the RAP (Coffey 2015), and as detailed above in **Section 8.4**, remediation works were undertaken at the wider ECBH site between January and June 2017, with Enviropacific Services acting as the Principal Contractor and WSP as the environmental consultant undertaking asbestos clearance and validation works.

As reported in the validation report (WSP 2017a), the extent of the remediation and validation works was restricted to areas identified as 'high' likelihood areas and included the following:

- Initial surface inspection of the 'high' likelihood remediation areas;
- Assessment of the identified 'high' likelihood remediation areas via the implementation of a testpitting program at an approximate 10 m grid. The testpitting strategy was completed in accordance with the requirements of the WA DoH 2009; and
- Completion of remedial works in each zone comprising the 'chase out' of asbestos impacted soil in the vicinity of the testpits where asbestos was identified. A 5 m lateral buffer was applied, with visual clearance of the excavation walls and floors also being undertaken, supplemented by a grid based laboratory analysis of friable asbestos.

Remediation and validation works were undertaken in accordance with the requirements stipulated in the RAP (Coffey 2015); RAP Addendum (Coffey 2016) and auditor consultation / approval.

A summary of the remediation works and validation of each remediation zone is described in the following sections.

8.6.1 Delineation of Asbestos within the Remediation Zones - Testpit Program

As discussed above, testpits were installed across the identified 'high' likelihood remediation zones in accordance with the WA DoH 2009 and auditor approval (refer to emails as detailed in **Section 1.4**). Targeted testpits were installed by the consultant in areas considered to have a 'high' likelihood of asbestos occurrence. Testpits were visually assessed to determine the extent of fill and the presence of ACM. These areas were generally distributed across the site with a greater occurrence within the north and north-western portions of the wider ECBH.

On the basis of this tespitting program and the presence of visible ACM contamination, several areas were identified as requiring asbestos remediation, further asbestos clearance and validation, including the following:

- Area A, Area B, Area D, Area N, Area R, Area E, Area G, Area H, Area J, Area K, Area P, Area O, Area C, Area Q, Area T, Area U, Area W, Area X and Area Y.

Based on the visual inspection and site observations, the following areas were considered to be suitably validated and did not require further remediation and / or validation:

- Area F – No visible ACM contamination was reported, with minor fill material present.
- Area S – no visible ACM contamination was reported, with minor fill present.

Relevant field notes detailing soil type, observations and presence of asbestos were provided by the consultant and included in the validation report (WSP 2017a).

8.6.2 Remediation and Validation of Asbestos Impacts in 'High' Likelihood Areas

Based on the identification of asbestos impacts, marker stakes were placed in each identified testpit location and a 5 m buffer was measured. The testpit location were asbestos was identified was then excavated out to the buffer marker forming the initial excavation zone. The extent of the excavation was extended laterally and vertically until all visible asbestos was removed.

Where minor occurrence of asbestos were identified (i.e, comprising a few ACM fragments in the excavation area), the ACM fragments were removed via emu-picking. However, the consultant noted that where several fragments were reported, additional scraping of the area was undertaken until no further ACM was visible.

In accordance with the RAP and following the removal of the asbestos impacted material, the consultant (WSP 2017a) undertook visual clearance of the walls and floors of the excavations. Clearance certificates were provided for each excavation footprint within the remediation zone. Where required, the visual clearance was supplemented by a grid based laboratory analysis of friable asbestos.

The consultant reported that a number of the excavations were terminated within the fill and, as such, there is the potential for asbestos to remain in the fill at the site.

A summary of the visual inspections documented by the consultant are provided as follows:

- A number of the excavations were terminated within the fill. The consultant reported that the extent of the excavation depth was based on field observations and was highly variable within each excavation due to the presence of buried waste, pipes and buried fragments. As such, the actual excavation depths are not known and have not been surveyed. However, generally the base of the excavation was terminated based on the absence of any visible asbestos.
- Area B, Area J, Area K, Area T and Area U were extended to a depth of 0.2 m below ground surface.
- Area L was excavated to a depth of 6 m to facilitate the chase-out of buried waste.
- Areas P, O, C were excavated to natural to facilitate the chase-out of buried pipes.

- Area Q was excavated to a variety of depths, with the majority of the excavation extended to a depth of 0.2 m bgs to facilitate the chase-out of buried waste.
- Observations confirmed that the excavation walls and floors were visually clear of bonded asbestos.
- Friable asbestos was reported in excavation Area A (including Area A South); Area K; Area W and Area X.
- All remediation areas were visually inspected and all areas were confirmed to be visually clear of asbestos.
- Following completion of the remediation works, the haul road was visually inspected for the presence of asbestos. Observations made by the consultant confirmed that this area was visually clear of asbestos and no further excavation was required.

The consultant reported that significant fly-tipping and visible ACM was observed immediately adjacent to the Area S surveyed areas. The consultant reported that the likely coordinates provided by the client (WSPT) to the consultant (WSP) for Area S were incorrect. However, confirmation was not provided by the consultant in the validation report. A review of the photographic documentation provided in the validation report, confirms that Area S did not show evidence of fill, with the underlying geology largely comprising natural clay soils.

Based on the information provided, the auditor concludes that Area S investigated by WSP was clear of visible ACM and did not require further remediation.

Where friable asbestos was reported, supplementary sampling was undertaken in these areas. Sampling was undertaken every 5 m along the excavation walls, assuming an excavation depth of < 1 m bgs, with the base of the excavation visually inspected to confirm the absence of ACM. One sample was collected per 25 m^2 of the excavation base, with a minimum of one sample, if the excavation was terminated in the fill. Where the excavation was terminated in natural soils, a base validation sample was not required, however photographic documentation was provided. Samples were submitted for the laboratory analysis for asbestos identification, in accordance with AS 4964-2004.

Laboratory analysis of samples collected from excavations Area A (including Area A South), Area K, Area W and Area X (including Area X.1) confirmed that analytical results were below the adopted criteria for friable asbestos, with no further excavation required in these areas.

A review of the sampling procedures confirms that all validation sampling was undertaken in accordance with the requirements of the RAP and in accordance with the NEPC 2013.

The extent of the excavations were surveyed by a registered surveyor, with the survey plans provided in the validation report (WSP 2017a). Relevant clearance certificates were also provided in the validation report.

8.6.3 Virgin Excavated Natural Material (VENM) Assessment

Materials excavated at depth from the containment cells was temporarily stockpiled within the northern portion of the site. A VENM assessment was undertaken of this material to determine its suitability for reuse onsite and reuse as a capping layer within the containment cell. The VENM assessment was undertaken in June 2017, where the consultant visually inspected the material and collected samples for laboratory analysis for TRH, BTEX, PAHs, OCPs, PCBs, metals and asbestos.

Visual inspection of the material confirmed that the excavated soils comprised natural clays, were not stained and did not show evidence visual olfactory evidence that the material was contaminated. The material was also reported to not contain sulfuric sediments and was free of asbestos fragments.

Laboratory analysis of the three samples collected reported non-detectable levels of contaminants with the exception of minor metal concentrations which were below the adopted criteria and consistent with background levels.

Field observations and laboratory analysis confirmed that the material was classified as VENM and was used as the capping layer for the containment cells (Cell # 1 and # 2). The consultant reported that a total of 12,241 m3 (in-situ survey volume) was excavated from the cell footprint and classified as VENM.

A copy of VENM assessment was included in the validation report (WSP 2017a).

8.6.4 Construction of Containment Cells

In order to facilitate with the encapsulation of the excavated asbestos impacted soil / fill, two onsite cells were excavated within the north-eastern corner of the site, within allotment Lot 5, Section B in DP 8681.

The consultant (WSP 2017a) reported that the surface material within the proposed containment Cell # 1 was excavated and temporarily stockpiled on the western portion of Area I. This material was inspected and was reported to comprise impacted topsoil material. This material was temporarily stockpiled prior to placement within the containment cell.

A review of the survey plan shows that the footprint of containment Cell # 1 overlaps into the eastern portion of Area I. The consultant reported that prior to the bulk excavation of Cell # 1, a partial clearance certificate for the eastern portion of Area I was provided. Findings from these works were included in the VENM assessment, which reported that the materials excavated in this area comprised natural clay, consistent with the natural soils described for western Sydney. The material / area was reported to have no visual or olfactory evidence to suggest that the material was contaminated with no fragments of asbestos observed. Laboratory testing (including TRH, GTEX, PAHs, OCPs, PCBs and asbestos) reported no detectable levels of contaminants in the soil.

Upon completion of the excavation of Cell # 1, the temporarily stockpiled impacted topsoil material was transferred to Cell # 1. The footprint of the temporary stockpile (i.e, western portion of Area I) was also transferred to Cell # 1 and then clearance as part of the Area I clearance works.

Containment Cell # 2 was constructed in the cleared / validated area, comprising Area I.

The consultant (WSP 2017a) reported that the excavation of Cell # 1 was constructed in February 2017, with the cell extended to increase its capacity in May 2017. Survey data provided in the validation report indicates that the final volume of impacted soil / fill was 10,230 m^3 (in-situ excavation void).

Excavation of Cell # 2 was constructed and completed in June 2017, with survey data indicating that the total volume of impacted soil / fill within the cell was 2,011 m^3 (in-situ excavation void).

Asbestos impacted material excavated and removed from each remediation zone was transferred to the containment cells.

A total of 15,554.5 m^3 of soil (ex-situ / bulked volume) was excavated from Area A; Area A South; Area B; Areas D, N, R; Area E; Area G; Area H; Area I; Area J; Area K; Area L; Area M; Area M/Y; Areas P, O,C; Area Q; Area T; Area U; Area W; Area X; Pit B / K; Stockpile 1; Stockpiles 2, 3, 4; Stockpile 5; Stockpile 6; Stockpile 7; and Stockpile I / M and placed in containment Cell # 1.

A total of 4,513.6 m^3 of soil (ex-situ / bulked volume) was excavated from Area A South; Area L and Area X and placed in containment Cell # 2.

Following the placement of the impacted soils / fill within the containment cells, the consultant (WSP 2017a) reported that a geotextile marker layer, consisting of Geofabric Bidim A34 was installed immediately above the levelled fill material. The geotextile marker layer was covered with a

minimum of 0.5 m of virgin excavated natural material (VENM). Both containment Cell # 1 and Cell # 2 were surveyed in accordance with the requirements of the RAP. Final levels showing the impacted soil / fill thickness; level of geotextile layer; and thickness of the VENM layer were surveyed by a registered surveyor. The consultant also provided photographic documentation showing the placement of the material layer; and capping material during the construction of the containment cells.

Copies of the survey plans were provided in the validation report. A review of the survey plans confirmed that he containment cells were constructed in accordance with the requirements of the RAP and in accordance with the ANZECC (1999) *Guidance for the Onsite Containment of Contaminated Soils*.

The containment cells were not vegetated, as required by the RAP (Coffey 2015). However, the consultant reported that the cells will be vegetated in accordance with the Ecological Australia 2016, *Eastern Creek Retail Centre Management Plan*, maintained by WSPT.

The auditor further notes that all relevant waste tracking documentation, field notes and VENM certification have been provided in the validation report (WSP 2017a).

8.6.5 Asbestos Air Monitoring

During the remediation works, where the excavation of asbestos impacted material was being undertaken, the consultant undertook air quality monitoring daily to ensure no unacceptable exposure to surrounding receptors. Air monitoring was undertaken at several locations across the site and along the site boundaries. The consultant (RCA 2015a) reported that all air monitoring results at the site boundaries were <0.01 fibres/mL of air.

8.6.6 Waste Disposal

The consultant (WSP 2017a) confirmed that no excess soils were generated that required offsite disposal. The disposal of waste to an offsite facility only included used asbestos PPE and geofabric that was used for covering loads and stockpiles during the remediation works. Relevant waste disposal documentation for this material was included in the validation report.

8.7 Area Outside of the 'High' Likelihood Remediation Zones

Remediation works undertaken at the site targeted 'high' likelihood areas of asbestos impact, as per the requirements of the RAP (Coffey 2015).

Remaining areas across the site, outside of the identified remediation zones were not remediated. In addition, selected areas of the site remain unassessed, i.e, Superlot 3, Area B, Area P and Area Q. These areas were identified by the consultant (WSP 2017g) as having a moderate likelihood of occurrence of contamination principally including asbestos.

8.8 Validation of the Proposed Childcare Centre

As discussed above, the majority of the ECBH site will be redeveloped primarily for commercial / industrial uses. A small portion of the site will be developed as a childcare centre. The proposed childcare centre is located within the south-western corner of the future Lot 2 of the ECBH site and occupies an area of approximately 700 m^2. A site plan showing the site boundaries of the proposed development has been included in the consultant's report (WSP 2017b) and has been provided in **Appendix C** of this audit report. It is noted that the findings of the assessment of the proposed childcare centre were provided in a separate report and has been presented as an addendum (WSP 2017b) to the validation report (WSP 2017a).

The consultant (WSP 2017b) reported that this area was not part of the 'high' likelihood asbestos areas and was not subject to remediation, as detailed above and reported in WSP 2017a.

For completeness, the consultant considered potential nearby sources of contamination, including areas which had been remediated as part of the wider ECBH site (WSP 2017a). The nearest remediation areas to the childcare centre was Area S, which adjoins the site to the north. However, it is noted that works undertaken in Area S confirms that no asbestos was visibly observed, with minor fill observed, with natural soils underlying Area S from the near surface. The consultant reported that a few localised stockpiles of fly-tipping building rubble containing asbestos were presented between Area A and Area T, north-west of Area S and approximately 25 m or more from the childcare centre boundary. These stockpiles were removed from the site and the resulting surfaces were visually cleared as part of the remediation works. The consultant (WSP 2017b) reported that the risk of the childcare centre being affected by the identified materials in the vicinity of the site is very low, as all known asbestos was bonded and the removal was undertaken in controlled conditions to minimise any potential for cross-contamination.

Sampling was undertaken in this area based on a judgemental sampling approach with selected locations installed for site coverage. A total of seven sampling locations, on a rough grid basis were selected. The number of sampling locations exceeded the recommended number of sampling points as defined in the NSW EPA 1995 *Sampling Design Guidelines*. A summary of fieldworks undertaken in this area is provided as follows:

- Prior to the commencement of the assessment works, the site was cleared to allow access and visual inspection of the surface.
- Soil samples were collected at a depth of 0.1 m bgs using hand tools and were placed in dedicated laboratory supplied containers.
- All samples were submitted for the laboratory analysis of TRH, BTEX, PAHs, heavy metals, OCPs, OPPs and asbestos (quantification method).

Observations provided in the report (WSP 2017b) indicated that the site was covered in large reeds and was in a low lying waterlogged area. The surface was uneven, with the presence of surface rubbish (including brick and plastic). No asbestos was observed on the ground surface. The site was underlain by natural clay soils with no visual or olfactory evidence of contamination.

A summary of the laboratory results were provided in tables in the consultant's report, with a summary of relevant findings provided as follows:

- Concentrations of TRH, BTEX, PAHs, OCPs and OPPs were all reported at concentrations below the laboratory LOR.
- Metals were generally detected in all soil samples, with reported concentrations below health and ecological screening criteria.
- Asbestos was not detected in any of the soil samples above the laboratory limit of reporting.

The consultant (WSP 2017b) concluded that based on the field observations and laboratory results, the site is considered suitable for the proposed childcare development. However, the consultant noted that due to its low locality, the site may be required to be raised during the site redevelopment. The consultant recommended that the importation of material to the site requires assessment and recommends the importation of VENM only.

8.9 Deviations from the RAP

A revised RAP (Coffey 2015) was prepared for the site and reviewed by the auditor, with a Section B SAS and accompanying SAR issued on the 4 August 2015 (JBS&G 2015). The RAP and associated auditor opinion in the SAS / SAR detailed a remedial and validation approach which would render the site suitable for the proposed landuses. An Addendum to the RAP was issued by Coffey in 2016 and was reviewed and approved by the auditor. It is noted that the RAP was prepared based on a variety of mixed uses with potential redevelopment to include bulky good and self-storage; retail

centres or aged care and/or health facilities; nature reserves; children playground; detention basins; and associated site infrastructure including roads and services.

A summary of the remediation and validation works undertaken at the site have been included above in **Section 8.5** and **8.6**, respectively.

The auditor notes that all remediation and validation works were undertaken in accordance with the RAP and Addendum to the RAP and associated documentation and auditor approvals, noting the following:

1. The RAP was prepared based on a variety of mixed landuses. Taking into account advice from the client, WSPT, the future redevelopment of the wider ECBH site will be primarily commercial / industrial, with future use as a bulky good and retail businesses. A portion of the site will be developed as a childcare centre and includes part of Lots 2 and 3, Section A in DP 8681; and part Lots 7 and 10 in DP 830836. Based on this, the remediation and validation works were targeted on a primarily commercial / industrial landuse. If redevelopment to a more sensitive landuse is proposed for the site, reassessment will be required.
2. Assessment of part of Lots 2 and 3, Section A in DP 8681; and part Lot 7 and Part Lot 10 in DP 830836 for proposed use as a childcare centre.
3. At the time of the preparation of this audit, growing medium had not been placed over the capping layer at the completion of the construction phase. However, it is understood that these works will be completed by WSPT in the future in accordance with the *Vegetation Management Plan* by ELA dated 4 July 2016.

8.10 Audit Findings

Extent of Remediation Works for 'High' Likelihood Areas

The consultant's nominated remediation objectives were appropriate and consistent with the proposed uses of the site.

The consultant (WSP 20107a) reported that works were generally conducted in accordance with the RAP (Coffey 2015), Addendum to the RAP (Coffey 2016) and auditor approvals, with deviations to the RAP reported above in **Section 8.9**. The auditor notes however that the deviations to the RAP were not significant and were only relevant to the validation criteria for the site due to changes in the future site landuse, with the remediation objectives being met.

The consultant reported that, due to the absence of asbestos and occurrence of minor fill in Area S, remediation of this area was not required. However, the consultant reported the presence significant fly-tipping and visible ACM observed immediately adjacent to the Area S surveyed areas. The consultant reported that the likely coordinates provided by the client (WSPT) to the consultant (WSP) for Area S were incorrect. Review of the photographic documentation provided in the validation report, confirms that Area S did not show evidence of fill, with the underlying geology largely comprising natural clay soils.

The site plans provided by the consultant (WSP 2017a) were generally to scale and adequately identified the remediation zones and sampling locations relevant to main site features such as boundaries and street frontage, with the exception of Area S and Area F not being shown on the site plans. Relevant site plans were provided during the testpitting program showing the location of the testpits within Area F and Area S. However, the location of these areas relevant to the site boundaries and other relevant site features was not provided by the consultant. The auditor also notes that these areas / testpits were not surveyed. The auditor considers however that the lack of this information in the site plan does not affect the remediation outcome and findings of the audit.

Relevant survey plans were also provided showing coordinates for each boundary of the remediation excavation. It is noted however that excavation depths were not provided and were not surveyed.

However, the consultant reported that the majority of the excavations were terminated within the fill. This is consistent with the consultant's characterisation of the risk for further potential occurrence of asbestos to be present in non-remediated areas of the site as moderate.

All impacted soils / fill excavated from the remediation zones were transported to the containment cells, with no excess soils disposed offsite. Relevant tracking documentation, detailing total volumes of soils excavated and total volumes of soil within the containment cells was provided by the consultant during the remediation works. All volumes of soil excavated and contained within the cells were confirmed by the site survey, included in the consultant's report (WSP 2017a).

Relevant survey plans were provided for the containment cells, showing the locations of the cells relevant to the site boundary and lot boundary. Survey plans were also provided including levels of the top of the impacted soil / fill material; top of the geotextile / marker layer; and top of the capping layer. The auditor has reviewed the survey plans and considers that sufficient survey points were placed within each containment cell to suitably confirm that the containment strategy adopted for the site was suitably constructed and in accordance with the requirements of the RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016).

The RAP (Coffey 2015) detailed relevant regulatory requirements relating the remediation works. It is noted that the consultant did not provide detail or a copy of records regarding notifications to WorkCover NSW and any other relevant notifications required during the works. It is understood however that the notifications were undertaken by the Principal Contractor, Enviropacific Services prior to the commencement of site works.

The remediation works described by the consultant were also consistent with observations made by the site auditor during the audit inspection undertaken during and nearing completion of remediation works as outlined in **Section 1.5**.

Validation Works for 'High' Likelihood Areas

As part of the construction of the containment cells, visual inspection of the placement of the marker layer and capping layer was undertaken to ensure that a suitable 'cap and containment' system had been installed within the cells. The containment cells were also surveyed to ensure suitable construction as per the requirements of the RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016). The consultant (WSP 2017a) provided photographic documentation confirming the installation of the layer; installation of the capping layer; and final condition of the site.

Overall, the auditor considers that the 'capping' layer and the construction of the containment cell is suitably designed and provides a suitable barrier to ensure that any risks to human health and the environment are mitigated, as they relate to the proposed uses of the site.

The consultant (WSP 2017a) provided tables which adequately summarised the soil laboratory results during the validation works. The reported concentrations of contaminants by the consultant (WSP 2017a) were checked against and were found to be consistent with those reported by the laboratory. The laboratory procedures were also appropriate for the identified contaminants of concern and the adopted site validation criteria against which the results were compared.

Visual inspection and supplementary soil sampling was undertaken as part of the validation program, as per the requirements of the RA (Coffey 2015). The consultant (WSP 2017a) provided detailed field notes and inspection records noting aesthetic observations, presence / absence of asbestos; condition of asbestos (if present) and relevant site conditions. Photographic documentation was also provided by the consultant, confirming site conditions.

Supplementary validation soil samples were also collected in remediation zones were friable asbestos was observed. Validation samples were collected in accordance with the requirements of the RAP (Coffey 2017a).

A VENM assessment was undertaken of the natural soils excavated from the footprint of the containment cells located within the north-eastern corner of the site. The VENM assessment confirmed that the natural clay soils beneath the site were natural, uncontaminated and did not show evidence of sulfuric sediments. Visual inspection of the material by the consultant (WSP 2017a), confirmed that the material was not contaminated with other waste materials. Laboratory results of the natural soils also confirmed that the material was classified as VENM. This material was excavated and reused onsite, as the capping layer for the containment cells.

The auditor concurs with the consultant (WSP 2017a), that the 'high' likelihood remediation areas have been remediated of known asbestos impacts and that the excavation walls and floors have been visually inspected and absent of asbestos, with friable asbestos areas also absent of friable asbestos above the adopted criteria. The consultant also concluded that the potential for asbestos impacts and other impacts at the site, particularly at depth in the fill, un-remediated and unassessed areas across the wider ECBH site still exists, and the auditor also concurs with this conclusion.

Assessment of Proposed Childcare Centre

Due to proposed changes in the site development and the proposed use of the portion of the site as a childcare centre, additional assessment works were undertaken in this area. The assessment works were restricted to the proposed childcare area only, located within the south-western corner of future Lot 2. A survey of the proposed area of the childcare centre is provided as Plan # 1003A, provided in **Appendix C** of this report.

A review of the assessment report (WSP 2017b) confirms that the consultant provided tables that were generally accurate and complete, with relevant laboratory reports also provided. The site plans provided were not to scale, however were produced relevant to site features such as boundaries and street frontages. In addition, at the request of the auditor, a site survey was prepared for the site defining the property boundary coordinates.

The number of sampling locations installed during the assessment works were appropriate and consistent with relevant guidelines.

Based on field and laboratory results, the soil has been confirmed as consisting of natural soils with levels of chemical constituents consisted with anticipated background levels in natural soils in proximity of the site. No levels of chemical constituents and / or actual occurrence of asbestos has been found to exceed the adopted criteria.

The auditor concurs with the consultant's findings that this area is suitable to be used for a childcare centre, subject to implementation of the EMP consistent with the advice from the consultant (refer to **Section 9**).

Overall Conclusions

The auditor concurs with the consultant's conclusions of a moderate risk of occurrence of asbestos outside of the extent of the remediation areas. The consultant has reported:

- The uncertainty as to ground conditions and / or occurrence of asbestos in potentially widespread areas of the site consequent of the limited intrusive characterisation preceding the design of the RAP; and
- Uncertainty that locations of remediation as advised by the client were consistent with all locations where previous assessments had identified the presence of asbestos.

The auditor considers that these uncertainties can be appropriately addressed with the implementation of the EMP (refer to **Section 9**). It is noted by the auditor that the EMP deals with the potential for the occurrence of asbestos outside the extent of the remediated areas, which is considered by the auditor to be appropriate.

9. Ongoing Management

9.1 Long Term Site Management

Previous investigations undertaken at the site identified the presence of asbestos contamination at various locations across the site. The source of contamination was most likely attributed to buildings and structures previously located at the site, uncontrolled burial/filling and uncontrolled fill stockpiles. Subsequently a Revised Phase 1 Early Works RAP (Coffey 2015) was prepared. As part of the remedial strategy for the site, areas with a 'high' likelihood of asbestos impact were remediated by excavation, removal of ACM and asbestos impacted soil / fill and placement of the asbestos impacted soils / fill, in two containment cells, as discussed in **Section 8**. Areas outside the remediation zones were considered to be 'low' likelihood areas of asbestos and the residual risk would be managed through the implementation of a site management plan, where remediation will be triggered if asbestos impact is encountered during the development phase or during the operational phase where ground disturbance activities may occur in the future.

The consultant (WSP 2017g) prepared an Environmental Management Plan (EMP) for the site, to ensure appropriate steps are followed in the event that further contamination is uncovered during the future site development and / or ground disturbance works following development; and to ensure that the capping material covering the containment cells are appropriately maintained.

A separate Long-term EMP was prepared by the consultant, specific to the containment cells and the allotment (Lot 5 ECBH) containing the containment cells. The objective of the long-term EMP was to ensure the protection of future site users, following development via ongoing monitoring of site conditions, particularly the integrity of the containment cell capping layer; and the protection of the health of maintenance staff involved in subsurface works within the vicinity of the containment cells (Lot 5) following development. This document was included as Appendix C of the EMP.

The EMP (WSP 2017g) contained the following main provisions:

- Assessment of residual risk
- Allocation of roles and responsibilities for the implementation of the plan during the site development phase.
- Asbestos management and unexpected finds protocol, including the following:
    - Details on the types and nature of unexcepted finds to be encountered;
    - Control and management actions in the event that asbestos and / or other unexpected finds are encountered, also detailing roles and responsibilities to ensure that all measures are followed; and
    - Documentation procedures.
- Management for the offsite disposal of material.
- Environmental management requirements of the two containment cells located in allotment, Lot 5 of the site, including the followings:
    - Allocation of roles and responsibilities for the implementation of the plan;
    - Environmental training requirements;
    - Control measures to ensure the protection of site users, future maintenance workers and maintenance personnel;
    - Management measures and controls required for ongoing maintenance and repair works, including excavation works.

- Monitoring and review program to ensure that the long-term EMP is current and up to date.

- Requirement to prepare and implement a separate Construction Environmental Management Plan (CEMP) by the Principal Contractor for the development works. The CEMP should reference the WSP 2017g EMP.

The consultant (WSP 2017g) reported that the EMP and long-term EMP are 'dynamic' document and will require review and updating, where required, where site conditions are substantially different from those described in the plans.

The consultant reported the following key responsible stakeholders for implementation of the plans:

- The site developer / project manager or principal contractor (i.e, Frasers) will be responsible for implementing and maintaining the EMP. This also includes the review and update of the EMP, as required and to assess the performance of the EMP and whether changes are required.
- WSPT is responsible for the implementation of the Long-term EMP and ensure the protection of site users and future maintenance workers within the containment cells and associated allotment.

The consultant (WSP 2017g) further noted that the Long-term EMP is required to be reviewed regularly, with the consultant nominating a review of the EMP on a two-yearly basis.

The provisions of the EMP are legally enforceable, since they form a condition of the Site Audit Statement (SAS).

9.2 Audit Findings

The EMP prepared by the consultant (WSP 2017g) is considered by the auditor to be consistent with the requirements of the DEC 2006, with the following noted:

- The EMP suitably details the framework for the management of residual risks relating to the presence of asbestos within the containment cell (and associated allotment, Lot 5) and the potential for asbestos, or other contaminants of concern, to be uncovered in the remainder of the site during future stages of the site development, or potentially during ground disturbance works following development.
- The site owner (WSPT) is aware of the potential for residual risk of soil contamination, as asbestos or other contaminants of concern, at the site.
- The site developer / project manager, will be responsible for the maintenance and management of the site during the development phase of the works and will incorporate the EMP into their management responsibilities.
- The site owner, WSPT is responsible for the maintenance and management of the two containment cells and associated allotment (Lot 5) and will incorporate the EMP into their management responsibilities.
- Routine site inspections will be required during the works, with any changes to site conditions being observed and changes to the development phases, the EMP will be required to be updated.

The auditor notes that the EMP (WSP 2017g) has been prepared to manage 'low' likelihood areas of asbestos (as stipulated in the Coffey 2015 RAP) and the potential for unexpected finds to be encountered during the development phase of the works. The auditor concurs with the consultant's opinion, that at the time of the completion of the remediation works (as discussed in **Section 8**), all known asbestos in the 'high' likelihood areas and other areas discovered elsewhere during the works, were remediated. However, based on the size of the site, the historical heterogenous distribution of asbestos across the site, the presence of fill remaining at the site, potentially

contaminated soil / fill (asbestos and / or other) may be uncovered during future ground disturbance works. The potential for contamination may also occur in previously unassessed and unremediated areas (outside the scope of works already completed); and at depth. The auditor considers that the asbestos management and unexcepted finds protocol and associated procedures prepared by the consultant (WSP 2017g) in the EMP are acceptable to address these remaining unknown/potential contamination issues.

The auditor notes that the EMP applies to the entire ECBH site, comprising the allotments, as defined in **Table 2.1**, **Section 2** of this audit. In addition, relevant survey plans have been included as part of this audit confirming the extent of the site boundary to which this audit and EMP apply.

The auditor is satisfied that the EMP will be reasonably able to be legally enforceable, as the audit is a requirement of the development consent, hence the audit statement and accompanying EMP will be enforceable under the consent. A copy of the audit statement and accompanying EMP will also be provided to the local council for inclusion on the relevant s.149 certificates, based on current requirements, so the auditor is also satisfied that there is a public notification mechanism for the EMP. The requirement for an ongoing EMP was included in the RAP for the site which formed part of the consent requirements. Hence, separate agreement was not sought from the consent authority in relation to their acceptance of the EMP, as it had already been made a requirement of consent.

10. Evaluation of Landuse Suitability

In assessing the suitability of a site for an existing or proposed landuse in an urban context, the decision process for assessing urban redevelopment sites should be followed (Page 50 and 51, DEC 2006), as discussed in the following sections.

This audit was undertaken with the objective of independently reviewing the previous site investigation reports (DP 2009 and CDM 2013); the revised Phase 1 Early Works RAP (Coffey 2015); Validation report for the wider ECBH site (WSP 2017a); Validation Report for the proposed childcare centre (WSP 2017b); and EMP (WSP 2017g) to determine if the land can be made suitable for the proposed landuses.

For the purposes of this audit, the future use of the wider ECBH site is for commercial / industrial landuse, for use as a bulk goods and large retail businesses; with a childcare centre proposed for a portion of the site, identified as part Lot 2 and 3 in Section A DP 8681 and part Lot 7 and Part Lot 10 in DP 830836.

10.1 Reporting in accordance with EPA requirements

The documents provided by the consultant have been checked against, and meet the requirements of, OEH 2011. As such, the reporting of the site investigation process and the proposed remediation and validation process is considered to be appropriate and meets the requirements of this audit.

10.2 Aesthetic have been addressed

In general, the consultants (DP 2009 and CDM 2013) provided a detailed assessment and adequate consideration to contaminant odours emanating from the site, soil discolouration and the presence of asbestos containing materials during the site investigation process.

The consultant (WSP 2017a and WSP 2017b) reported that no asbestos containing materials were visible in the surface soils and / or excavations following the remediation works in the 'high' likelihood remediation zones. Photographic documentation was provided by the consultant to confirm these findings. In addition, a post-remediation site inspection was conducted by the auditor in June 2017 confirming the consultant's observations.

The consultant (WSP 2017a) reported that remediation activities did not extend to natural soils, with the majority of the excavations terminating within the fill material. The consultant reported that visual inspection of the surface of the excavations reported no visible asbestos containing materials, however noted that there is a potential for asbestos containing materials to be present in the fill material at depth. However, any potential risks to future users with residual asbestos and other contamination in the soils / fill during the development phase of the works will be managed through the EMP (WSP 2017g), as detailed in **Section 9**.

Material excavated from the basement of the containment cell was visually inspected and sampled by the consultant (WSP 2017a) during the remediation works. Based on the visual inspection and laboratory results, the material, natural clay soils, was classified as VENM and was suitable for reuse onsite as part of the capping layer within the two containment cells. As part of the VENM assessment, consultant (WSP 2017a) also assessed the material for the presence of odours, soil discolouration, asbestos containing materials and / or the presence of anthropogenic materials to ensure its suitability onsite.

As such, aesthetic issues are considered to have been adequately addressed.

10.3 Soils have been assessed against the appropriate investigation levels

The chemical criteria adopted by the consultants (DP 2009, CDM 2013 and WSP 2017b) have been checked against, and are consistent with, appropriate criteria endorsed by the EPA for the proposed

uses. As such the soils are considered to have been assessed against appropriate investigation levels.

The consultant (CDM 2013) adopted WA DoH 2009 for the asbestos criteria. It is noted that these criteria are endorsed by the EPA and are considered appropriate and accepted by the auditor for use in the assessment of asbestos in soil at the site.

As part of the validation works, the consultant (WSP 2017a) completed site inspections / visual clearance inspections following completion of the remediation works. Where required, validation samples were collected for asbestos and assessed against the NEPC 2013. The remediation and validation works were conducted in general accordance with the revised Phase 1 Early Works RAP (Coffey 2015); RAP Addendum (Coffey 2016); auditor approved validation plans (as per email correspondence, detailed in **Section 1.4** and **Appendix B** of this audit); and criteria endorsed by the EPA.

10.4 Background soil concentrations have been adequately addressed

The consultants (DP 2009 and CDM 2013) generally sampled to depths which provided penetration into natural soils within the site to give an indication and representation of local natural soil profiles.

The consultant (WSP 2017a) reported that remediation activities did not extend to natural soils, with the majority of the excavations terminating within the fill material. The consultant reported that visual inspection of the surface of the excavations reported no visible asbestos containing materials, however noted that there is a potential for asbestos containing materials to be present in the fill material at depth. However, any potential risks to future users with residual asbestos and other contamination in the soils / fill during the development phase of the works will be managed through the EMP (WSP 2017g), as detailed in **Section 9**.

The chemical concentrations in soil samples from the natural soil profile were below the appropriate soil criteria and were generally within published background ranges (where available). As such, background soil concentrations are considered to have been adequately addressed.

10.5 All impacts of chemical mixtures have been assessed

No issues relating to chemical mixtures in relation to the identified contaminants of concern were identified by the consultant. Hence, there was no requirement to give any further consideration to the impact of chemical mixtures.

10.6 Site Management Strategy is Appropriate

Based on the remedial strategy adopted for the site, a management plan (WSP 2017g) has been prepared for the site. The site management strategy has been prepared residual risks relating to the presence of asbestos within the containment cell (and associated allotment, Lot 5) and the potential for asbestos, or other contaminants of concern, to be uncovered in the remainder of the site during future stages of the site development, or potentially during ground disturbance works following development.

The site management strategy is considered acceptable for the following reasons:

- The containment cells have been suitably constructed and are generally consistent with the requirements of EPA 1999, noting that the identified contaminants of concern are neither leachable (e.g., asbestos in fill materials) nor volatile.
- The requirements of the management strategy are able to be made legally enforceable as a condition of development consent.
- The site owner, WSPT and site developer will be able to ensure that the appropriate management controls are able to be realistically implemented at the site to ensure future site

users are not at risk during any ground disturbance works and / or during the development phase of the works.

- There will be an appropriate public notification mechanism through the s.149 certificate, given that the audit is statutory in nature and there are requirements for councils to include such information on s.149 certificates.

10.7 Contaminant migration (actual or potential) has been addressed

The consultant addressed both the potential and actual migration of the identified contaminants of concern through an assessment of soil and groundwater at locations across the site.

Groundwater assessment works previously undertaken at the site (CDM 2013) reported that with the exception of manganese, nickel and zinc, no detectable heavy metals were reported in the groundwater. In addition, no detectable levels of organic compounds were reported the groundwater. The consultant reported that the presence of manganese, nickel and zinc are attributed to natural occurrence of these elements in the shale bedrock, which is the water bearing zone beneath the site.

Based on the observed groundwater quality at the site, there is considered not to be any migration of contamination via groundwater which poses any unacceptable risks to any off-site human or ecological receptors. As such, the requirements of the site audit in relation to consideration of contaminant migration have been met.

11. Audit Summary Opinion

On the basis of the findings of the site audit, and subject to the limitations in **Section 12**, the following summary opinions are provided:

- The site investigation works and remediation and validation works are considered to have met the requirements of the Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition) (DEC 2006).
- The site investigation activities identified historically imported and/or buried fill and waste materials within various areas of the site which contained reworked silty clay, demolition wastes, and fragments of asbestos containing materials. The levels of asbestos in fill/waste soils in parts of the site were considered to require remediation or management to make the site suitable for the proposed uses.
- Given the nature of the identified contamination (i.e., asbestos), there was no evidence of potential or actual migration of contaminants from the site which may result in unacceptable risks to surrounding human or ecological receptors.
- The revised Phase 1 Early Works RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016) prepared for the site addressed the identified contamination issues, with the remediation approach checked by the auditor and found to be: technically feasible; environmentally justifiable given the nature and extent of the identified contamination; and consistent with relevant laws, policies and guidelines.
- The remediation works completed at the site included the removal of known asbestos impacted in 'high' likelihood areas, as defined in the RAP (Coffey 2015). All asbestos impacted soils were excavated and placed within the capped containment cells, Cell #1 and Cell # 2, located within the north-eastern corner of the site. The containment cells were suitably constructed, as per the requirements of the RAP (Coffey 2015) and Addendum to the RAP (Coffey 2016).
- The auditor considers that the remediation and validation works were generally completed in accordance with the requirements of the revised Phase 1 Early Works RAP (Coffey 2015), audit conditions as stated in SAS dated 4 August 2015 (JBS&G 2015), Addendum to the RAP (Coffey 2016) and auditor approvals.
- Whilst the remediation works have been documented as being successful in addressing the known areas of impact, as with any site where there has been historic uncontrolled filling/burial of fill materials including demolition rubble, the potential exists for unexpected asbestos to remain at the site. Whilst the auditor is satisfied that such unexpected impacts do not affect the suitability of the site for the proposed use, this residual potential risk has been adequately and appropriately addressed through the development of an EMP for the site (WSP 2017g).
- The suitability of the site for the proposed landuses is therefore subject to the implementation of the EMP prepared for the site (WSP 2017g). The auditor is satisfied that the EMP will be reasonably able to be legally enforceable, as the audit is a requirement of the development consent, hence the audit statement and accompanying EMP will be enforceable under the consent. A copy of the audit statement and accompanying EMP will also be provided to the local council for inclusion on the relevant s.149 certificates, based on current requirements, so the auditor is also satisfied that there is a public notification mechanism for the EMP.

12. Limitations

This audit was conducted with a reasonable level of scrutiny, care and diligence on behalf of the client for the purposes outlined in the *Contaminated Land Management Act 1997*. The data used to support the conclusions reached in this audit were obtained by other consultants and the limitations which apply to the consultant's report(s) apply equally to this audit report.

Every reasonable effort has been made to identify and obtain all relevant data, reports and other information that provide evidence about the condition of the site, and those that were held by the client and the client's consultants, or that were readily available. No liability can be accepted for unreported omissions, alterations or errors in the data collected and presented by other consultants. Accordingly, the data and information presented by others are taken and interpreted in good faith.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations reviewed, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this audit are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G and the Site Auditor reserve the right to review the report in the context of the additional information, subject to meeting relevant guideline requirements imposed by the EPA.

Appendix A Guidelines made or approved by the EPA

Guidelines made or approved by the EPA (s.105 CLM Act 1997)

Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, Paper No 4, 2000 (ANZECC/ARMCANZ 2000)

Australian Drinking Water Guidelines, National Health and Medical Research Council and Agriculture and Resource Management Council of Australia and New Zealand, 2011 (NHMRC/NRMMC 2011)

Composite Sampling, Lock, W. H., National Environmental Health Forum Monographs, Soil Series No.3, 1996, SA Health Commission, (NEHF 1996)

Contaminated Sites: Sampling Design Guidelines, NSW EPA, 1995 (EPA 1995)

Contaminated Sites: Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land, NSW EPA, 1995 (EPA 1995b)

Contaminated Sites: Guidelines for the Assessment and Clean Up of Cattle Tick Dip Sites for Residential Purposes, NSW Agriculture and CMPS&F Environmental, February 1996 (NSW Agr. 1996)

Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, 1997 (EPA 1997, reprinted and updated 2011)

Contaminated Sites: Guidelines for Assessing Banana Plantation Sites, NSW EPA, 1997 (EPA 1997b)

Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens, NSW EPA, 2005 (EPA 2005)

Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition), NSW EPA, 2006 (DEC 2006)

Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination, NSW EPA, March 2007 (EPA 2007)

Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997, NSW EPA, June 2009 (EPA 2009)

Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards, Department of Health and Ageing and EnHealth Council, Commonwealth of Australia, June 2002 (EnHealth 2002)

National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013, National Environment Protection Council (NEPC 2013)

Appendix B Audit Correspondence

Rita Sirianni

From: Tim Ireson <TIreson@hansenyuncken.com.au>
Sent: Wednesday, 1 June 2016 10:48 AM
To: Michael Dunbavan
Cc: Andrew Lau; Colee Quayle; Luke Wilson; Sahani Gunatunge
Subject: Re: Development Management Agreement Terminology: Remediation (ECRC)

Hi Luke,

Can you please send Andrew the initial and s96 approval consent?

Andrew - on initial review there does not seem to be any "prior to commencement" conditions - rather during construction.

Tim Ireson
0437 945 499

On 1 Jun 2016, at 10:39 AM, Michael Dunbavan <Michael.Dunbavan@coffey.com> wrote:

> Tim and Andrew – given the planning approval process for developing Pads 1 &2, I suggest that a Site Audit Statement would carry more weight than an Interim Audit Advice. Although there would be slightly higher overall site audit costs, a benefit of having Pads 1 & 2 "fully" signed off means that there would be no related timing constraints for completing Pads 3 & 4, and no condition requiring completion of the SAS for the entire area before issue of an Occupation Certificate for developments on Pads 1 or 2..
>
> Just a thought.
>
> Regards
>
> Dr Michael Dunbavan CP SAM
> Senior Principal Consultant
> Environments Leader, Sydney
>
> Chatswood NSW
>
> t: +61 2 9406 1206
> m: +61 419 395 971
> w: coffey.com

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Wednesday, 1 June 2016 10:26 AM
To: Tim Ireson
Cc: Michael Dunbavan; Colee Quayle; Luke Wilson; Andrew Lau; Sahani Gunatunge
Subject: Re: Development Management Agreement Terminology: Remediation (ECRC)

Hi Tim

The terminology for the agreement would be 'Interim Audit Advice'.

If you haven't already done so, I'd also suggest that you ensure the project approval requirements for the site audit align with any commercial agreement you enter into.



BULK EARTHWORKS PLAN
SCALE 1:1000

VOLUMES BREAKDOWN

PHASE 1
CUT - 8,650m³
FILL + 36,200m³

PHASE 1b
CUT - 6,200m³
FILL + 76,000m³

PHASE 2
CUT - 20,400m³
FILL + 85,300m³

VOLUMES SUMMARY NOTES

LEVELS DATUM IS AHD.

PRELIMINARY BULK EARTHWORKS VOLUMES BASED ON DIFFERENCE BETWEEN PROPOSED FLAT PAD OPTION AND EXISTING SURFACE WITH A NOMINAL TOPSOIL STRIP OF 200mm.

TOTAL:

CUT	= - 32,250m³
DETAILED EXCAVATION	= - 16,000m³
ACCESS ROAD BOXING	= - 4,000m³
FILL	= +197,500m³
BALANCE	= +145,250m³ (i.e. IMPORT)

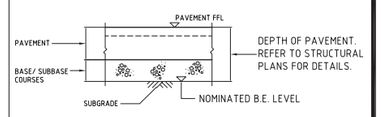
DETAIL EXCAVATION ALLOWANCE OF 1,000m³/ha FOR 16 Ha FOR TRENCHES, FOOTINGS, ETC.
NO ALLOWANCE HAS BEEN MADE FOR RETAINING WALLS, BULKING OR COMPACTION OF FILLED SOILS.

NOTE:
ABOVE VOLUMES INCLUDE ALLOWANCE FOR:
200mm TOPSOIL STRIP
650mm PAVEMENT DEPTH FOR ACCESS ROAD

LEGEND

LEVELS DATUM IS AHD.

- EXISTING CONTOUR
- 30.50 - B.E.L. CONTOUR (MAJOR - 0.5m)
- 30.40 - B.E.L. CONTOUR (MINOR - 0.1m)



NOMINATED B.E.L. DETAIL
N.T.S.

10m 0 10 20 30 40 50 60 70 80 90 100m
SCALE 1:1000 AT A0 SIZE SHEET

FOR SECTION 96

AMENDMENTS	DATE	ISSUE
ISSUED FOR SECTION 96	21.07.15	B
FOR INFORMATION ONLY	30.03.15	A

ARCHITECT

CLIENT
Western Sydney Parklands Trust
WESTERN SYDNEY PARKLANDS TRUST
LEVEL 7, 10 VALENTINE AVE
PARRAMATTA NSW 2150

PROJECT
EASTERN CREEK BUSINESS HUB
WESTERN SYDNEY PARKLANDS

DESIGNED	DRAWN	DATE	CHECKED	SIZE	SCALE	CAD. REF:
M.W.	X.C.	MAR 2015		A0	AS SHOWN	12693.00-DA30

Costin Roe Consulting Pty Ltd.
Consulting Engineers
Level 1, 8 Windmill Street
Walsh Bay, Sydney NSW 2000
Tel: (02) 9251-7099 Fax: (02) 9241-5721
email: mail@costinroe.com.au ©

CostinRoe Consulting
Value in Engineering and Management

DRAWING TITLE
BULK EARTHWORKS PLAN

DRAWING No C012693.00-DA30 ISSUE B

Development consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As the Minister for Planning, I determine:

(a) to grant consent to the development application referred to in Schedule 1, subject to the conditions in Schedule 2 and Schedule 3.
(b) pursuant to section 89D(2) of the *Environmental Planning and Assessment Act 1979*, I determine that any subsequent stage of the development having a capital investment value less than $10 million is to be determined by the relevant authority and that stage of the development ceases to be State significant development.

The conditions the subject of this approval are required to:

- prevent, minimise, and/or offset adverse environmental impacts including economic and social impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

The Hon Pru Goward MP
Minister for Planning

Sydney 2014 7 January 2015

SCHEDULE 1

Application No.: SSD 5175

Applicant: Western Sydney Parklands Trust

Consent Authority: Minister for Planning and Environment

Land: Rooty Hill Road South, Rooty Hill (Western Sydney Parklands)

Development: Eastern Creek Business Hub Staged Development Application, including:

- A concept proposal for a new retail centre comprising 52,800 sqm gross floor area to accommodate 'retail premises', 'bulky goods premises' and 'business premises' uses and a development structure including:
  - land uses;
  - site layout;
  - building envelopes; and
  - design parameters.

- Stage 1 subdivision and early works including:
  - super lot subdivision to create three developable allotments and one residual allotment;
  - construction of an access road;
  - bulk and detailed earthworks;
  - stormwater management;
  - civil engineering works;
  - landscaping; and
  - rehabilitation of the existing woodland areas identified for open space/conservation.

DEFINITIONS

Advisory Notes	Advisory information relating to the consent but do not form a part of this consent
Applicant	Western Sydney Parklands Trust or anyone else entitled to act on this consent
Application	The staged development application and the accompanying drawings plans and documentation described in Condition A4 of Schedule 2 and Condition A2 of Schedule 3
BCA	Building Code of Australia
Construction	Any works, including earth and building works
Council	Blacktown City Council
Certifying Authority	Means a person who is authorised by or under section 109D of the EP&A Act to issue a construction certificate under Part 4A of the EP&A Act
Day Time	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Environment, or its successors
ECBH	Eastern Creek Business Hub
Evening	The period from 6pm to 10pm
Environmental Impact Statement (EIS)	Environmental Impact Statement titled *Staged Development Proposal – Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement*, prepared by Architectus Group Pty Ltd, dated September 2012
EPA	Environmental Protection Authority, or its successor
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation or Regulation	*Environmental Planning and Assessment Regulation 2000*
Minister	Minister for Planning and Environment, or nominee
Night Time	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OEH	Office of Environment and Heritage, or its successor
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering considerations and what is practical to build
RMS	Roads and Maritime Services, or its successor
Secretary	Secretary of the Department of Planning and Environment, or nominee/delegate
Secretary's approval, agreement or satisfaction	A written approval from the Director-General (or nominee/delegate). Where the Secretary's approval, agreement or satisfaction is required under a condition of this approval, the Secretary will endeavour to provide a response within one month of receiving an approval, agreement or satisfaction request. The Secretary may ask for additional information if the approval, agreement or satisfaction request is considered incomplete. When further information is requested, the time taken for the Applicant to respond in writing will be added to the one month period.
Subject Site	Rooty Hill Road South, Rooty Hill (Western Sydney Parklands)

SCHEDULE 2

PART A TERMS OF APPROVAL FOR CONCEPT PROPOSAL

Development Description

A1. Consent is granted to the 'concept proposal' as described in Schedule 1 and the Environmental Impact Statement, as amended by the Response to Submissions and the conditions contained in this development consent.

Determination of Future Development Applications

A2. In accordance with section 83B(3) of the EP&A Act the subsequent stages are to be subject of future development applications.

A3. The determination of future development applications is to be generally consistent with the terms of development consent SSD 5175 as described in **Schedule 1** and subject to the conditions in Part B **Schedule 2**.

Development in Accordance with Plans and Documents

A4. The applicant shall carry out the development generally in accordance with the:

a) *Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement* prepared by Architectus dated September 2012, as amended by the

b) *Eastern Creek Business Hub State Significant Development SSD 5175 Response to Submissions* prepared by Architectus dated April 2014; and

c) *Eastern Creek Business Hub Design Guidelines* prepared by Architectus dated 12 February 2014; and

d) following drawings, except for:

i) any modifications which are 'Exempt' or 'Complying Development'; and

ii) otherwise provided by the conditions of this consent.

Concept Proposal			
Concept Plans prepared by Architectus			
Drawing No.	**Revision**	**Name of Plan**	**Date**
EIS-01 (G)		Structure Plan	24 July 2013
EIS-05 (H)		Preferred Indicative Plan	24 July 2013
EIS-03 (G)		Enabling Infrastructure Works	24 July 2013
Landscape Plans prepared by Urbis			
LA01	06	Illustrative Landscape Masterplan	27 August 2012

Lapsing of Approval

A5. This consent will lapse five (5) years from the date of consent unless the works associated with Stage 1 have physically commenced.

Legal Notices

A6. Any advice or notice to the consent authority shall be served on the Secretary.

Maximum Gross Floor Area (GFA)

A7. The maximum GFA for the total development shall not exceed 52,800 sqm and the individual land use components shall have a maximum GFA as follows:

Land Use	Maximum GFA (sqm)
bulky goods	**29,300**
large format retail	**14,000**
convenience retail - supermarket - specialty shops/small business	**9,500** (4,000) (5,500)
TOTAL	**52,800**

Restriction on Large Format Retail

A8. The large format retail component shall be operated by a maximum of two retailers and/or tenants for non-food or beverage purposes.

PART B CONDITIONS TO BE MET IN FUTURE DEVELOPMENT APPLICATIONS

Building Design

B1. To ensure a high quality urban design and architectural response is achieved, the site layout and architectural design of the ECBH shall have regard to, and be generally consistent with, the Design Guidelines prepared by Architectus dated 12 February 2014 accompanying the Response to Submissions.

B2. Details are to be provided with the development application for the detailed design and construction of the ECBH demonstrating compliance with Condition B1 above, unless it can be satisfactorily demonstrated to the approval authority that a superior built form and/or urban design outcome can be achieved.

B3. Future development applications for the construction of buildings shall include plans, elevations and sections to sufficiently detail the design, including height, setback, gross floor area, modulation and articulation of all buildings.

B4. Future development applications for the construction of buildings shall also include photomontages.

Landscaping

B5. Future development applications for the construction of buildings shall include detailed landscape plans identifying the vegetation to be removed and the location of any additional landscaping, and must be generally in accordance with the landscape and public domain principles and development guidelines in the Design Guidelines prepared by Architectus dated 12 February 2014.

B6. The detailed landscape plans should include relevant details of the species to be used in the various landscape areas (preferably species indigenous to the area) and other soft and hard landscape treatments, including any pavement areas.

Traffic, Access and Car Parking

B7. Future development applications shall be accompanied by a detailed assessment of the traffic, and transport impacts on the surrounding road network and intersection capacity, and shall detail provisions demonstrating that sufficient loading/unloading, access and car parking has

been provided having regard to RMS's Guide to Traffic Generating Developments, and details to promote non-car travel modes. The traffic and transport impact assessment shall also have specific regard to the scope and timing of road infrastructure works in the surrounding road network.

Operational Noise

B8. Future development applications shall include a site specific noise assessment and demonstrate that appropriate acoustic amenity is achieved and include mitigation measures, where necessary.

Construction

B9. Future development applications shall analyse and address the impacts of construction and include:

a) Construction Transport Management Plan, addressing traffic and transport impacts during construction;

b) Noise and Vibration Impact Assessments, addressing noise and vibration impacts during construction;

c) Construction Waste Management Plan, addressing waste during construction;

d) Air Quality Management Plan, addressing air quality during construction;

e) Water Quality Impact Assessment and an erosion and sediment control plan (including water discharge considerations) in accordance with *Managing Urban Stormwater, Soils and Construction (Landcom 2005)*; and

f) Acid Sulphate Soil and Assessment and Management Plan.

g) Salinity Assessment Management Plan

Contamination

B10. Future development applications for the construction of buildings shall include a Remediation Action Plan addressing the potential contamination of the land including mitigation measures in accordance with *State Environmental Planning Policy No.55 – Remediation of Land,* where necessary.

Ecologically Sustainable Development

B11. Future development applications shall demonstrate how the development incorporates the principles of ESD in the design, construction and on-going operation of the development.

Stormwater

B12. Future development applications for the construction of buildings shall include a stormwater management plan in accordance with the *Water Cycle Management Strategy Report Incorporating Water Sensitive Urban Design Techniques* prepared by J. Wyndham Prince dated March 2013 and council's *Engineering Guide for Development 2005.*

Flooding

B13. Future development applications for the construction of buildings shall include a detailed flood impact assessment in accordance with the *NSW Floodplain Development Manual (2005)* identifying minimum floor levels for buildings and flood evacuation strategies, where necessary.

Crime Prevention

B14. Future development applications shall include a *Crime Prevention Through Environmental Design (CPTED)* assessment, including mitigation measures, where necessary.

Bushfire

B15. Future development applications for the construction of buildings shall demonstrate compliance with the relevant provisions of *Planning for Bushfire Protection (PBP) NSW Rural Fire Service 2006 and* the Asset Protection Zones recommended in the *Bushfire Protection Assessment – Subdivision and Early Works, Eastern Creek Business Hubs,* prepared by Ecological, dated August 2012.

Disability Access

B16. Future development applications shall include a Disability Access Review to demonstrate an appropriate degree of accessibility in accordance with the *Disability (Access to Premises - buildings) Standards 2010* (the Premises Standards).

Building Code of Australia

B17. Future development applications for the construction of buildings shall demonstrate compliance with the *Building Code of Australia*, as relevant.

Waste

B18. Future development applications shall include a Waste Management Plan to address storage, collection, and management of waste and recycling within the development.

Outdoor Lighting

B19. Future development applications shall include details of any outdoor lighting within the site and compliance with *AS/NZ1158.3:1999 Pedestrian Area (Category P) Lighting and AS4282: 1997 Control of Obtrusive Effects of Outdoor Lighting.*

Advertising Signage

B20. Future development applications shall include details of any external advertising signage to demonstrate compliance with council's requirements for external advertising signage and *State Environmental Planning Policy No. 64 – Advertising and Signage,* as relevant.

Staging Plan

B21. Future development applications for the construction of buildings shall include a detailed staging plan showing the development being carried out in a sequential manner and the timing for road infrastructure works.

SCHEDULE 3

CONDITIONS OF CONSENT FOR STAGE 1 SUBDIVISION AND EARLY WORKS

PART A ADMINISTRATIVE CONDITONS

Obligation to Minimise Harm to the Environment

A1. In addition to meeting the specific performance criteria established under this approval, the applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the development.

Development in Accordance with Plans and Documents

A2. The applicant shall carry out the 'Stage 1 subdivision and early works' generally in accordance with the:

a) *Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement* prepared by Architectus dated September 2012, as amended by the

b) *Eastern Creek Business Hub State Significant Development SSD 5175 Response to Submissions* prepared by Architectus dated April 2014; and

c) *Eastern Creek Business Hub Design Guidelines* prepared by Architectus dated 12 February 2014; and

d) following drawings, except for:

i) any modifications which are 'Exempt' or 'Complying Development'; and

ii) otherwise provided by the conditions of this consent.

Stage 1 Subdivision			
Subdivision drawing prepared by Landpartners			
Drawing No.	**Revision**	**Name of Plan**	**Date**
S073106	AMD 7b	Proposed Subdivision of Eastern Creek Business Hub Rooty Hill Road South, Eastern Creek	24 May 2013
Early works drawing prepared by Architectus			
EIS-04(H)		Stage 1 Early Works Phasing Plan	24 July 2013
Road Improvement Works Sketch prepared by J. Wyndham Prince			
8801/SK04	H	Proposed Works Sketch	22 May 2013
Landscape Plans prepared by Urbis			
LA06	00	Phase 1 – Recommended Plant Species	27 August 2012
LA07	00	Phase 1 – Landscape furniture Palette	24 August 2012
LA08	02	Phase 1 – Street Tree Planting Works	10 September 2012
LA09	02	Phase 1 – Street Tree Planting Works	10 September 2012
LA10	00	Phase 1 – Street Tree Planting Works	30 August 2012

Inconsistency between Documents

A3. If there is any inconsistency between the plans and documentation referred to above, the most recent document shall prevail to the extent of the inconsistency. However, conditions of this approval prevail to the extent of any inconsistency. Where there is an inconsistency between approved elevations and plans, the elevations prevail.

Lapsing of Approval

A4. This consent will lapse five years from the date of consent unless the works associated with the development have physically commenced.

Prescribed Conditions

A5. The applicant shall comply with all relevant prescribed conditions of development consent under Part 6, Division 8A of the Regulation.

Dispute Resolution

A6. In the event of a dispute between the applicant and a public authority in relation to an applicable requirement in this approval or relevant matter to the Development, either party may refer to the matter to the Secretary for resolution. The Secretary's resolution of the matter shall be binding on the parties.

Long Service Levy

A7. For work costing $25,000 or more, a Long Service Levy shall be paid. For further information please contact the Long Service Payments Corporation on their Helpline 13 14 41.

Legal Notices

A8. Any advice or notice to the consent authority shall be served on the Secretary.

PART B PRIOR TO COMMENCEMENT OF WORKS

Certified Plans

B1. Plans certified in accordance with section 109R of the EP&A Act are to be submitted to the Certifying Authority prior to commencement of each stage of the works and shall include details required by any of the following conditions.

Biodiversity Offset Strategy

B2. The applicant shall retire 46.3 ecosystem credits of Grey Box-Forest Red Gum woodland at the Chandos Street West Biobank Site (Biobank Site 70) in accordance with the offset strategy in the ecological assessment prepared by Ecological Australia dated August 2012 to offset the loss of 1.93 hectares of Cumberland Plain Woodland (sub community) on the subject site.

Flood Risk Management

B3. A detailed flood study prepared by a suitably qualified person in accordance with the NSW Floodplain Manual (2005) providing further flood risk management investigations to address the following:

a) rare floods between 1 in 100 year event to the probable maximum flood event;

b) impact of development on flood behaviour, levels, velocities, duration on adjacent downstream and upstream areas;

c) impact of flooding up to the probable maximum flood event on the proposed development; and

d) sensitivity analysis to determine the impact from climate change.

B4. Findings and recommendations from the above investigations should be incorporated in the final stormwater and drainage works design, as relevant.

Stormwater and Drainage Works Design

B5. Final design plans of the stormwater drainage systems, prepared by a qualified practicing professional and in accordance with council's Engineering Guide for Development 2005 shall be submitted to the Certifying Authority prior to commencement of works. The hydrology and hydraulic calculations shall be based on models described in the current edition of Australian Rainfall and Runoff.

Road Design

B6. Final road design plans shall be prepared by a qualified practising Civil Engineer and submitted to the Certifying Authority prior to the commencement of works. The plans shall include kerb and gutter, stormwater drainage, full road width pavement including traffic facilities (roundabouts, median islands etc.) and paved footpaths shall be constructed along the full length of the new access road. The new access road shall be designed in accordance with council's Engineering Guide for Development 2005 and the Roads and Maritime Services.

Cable Place Intersection

B7. Final intersection design plans shall be prepared by a qualified practising Civil Engineer and submitted to the Certifying Authority prior to the commencement of works. The new signalised intersection at Cable Place shall be designed in accordance with Austroads Guide to Road Design Part 3 Geometric Design (2010 edition), Part 4 Intersections and Crossings – General (2009 edition) and Part 4A Unsignalised and Signalised Intersections (2010 edition). The applicant shall obtain section 138 consent under the Roads Act 1993 for all works on Rooty Hill Road South.

Road Closure

B8. Prior to the commencement of works evidence shall be provided to the Certifying Authority demonstrating an application for the closure of the Beggs and Belmore Roads easements has been submitted to *NSW Trade and Investment Crown Lands*.

Road Infrastructure Works

B9. The applicant shall provide written evidence to the Certifying Authority that it has entered into a Deed agreement with Roads and Maritime Services in accordance with the details outlined in the correspondence from Roads and Maritime Services dated 6 June 2014, and the Proposed Works Sketch prepared by J Wyndham Prince No. 8801/SK04 issue H dated 22 May 2013.

Vegetation Management Plan (VMP)

B10. Prior to the commencement of works, a Vegetation Management Plan (VMP) shall be provided to the Certifying Authority addressing the restoration and rehabilitation of the conservation area in the eastern part of the site and the retained woodland in the developable areas of the site in accordance with the criteria identified in the *Vegetation Management Plan Guidelines*, prepared by the *Department of Water and Energy, (February 2008)*. The VMP is to be prepared by a suitably qualified person and should address but not be limited to, the following:

a) provide details of vegetation to be retained and measures to protect vegetation during the construction and operation phases of the development;

b) identify areas to be rehabilitated and details of the vegetation species, composition, planting, layout and densities of plants to re-vegetate these areas;

c) outline ongoing management arrangements, including but not limited to responsibilities, funding and long term maintenance; and

d) provide details monitoring and timing of revegetation works within the retained vegetation and the areas to be revegetated.

The plan is to span the entire project duration from pre-construction to through to construction and post construction.

Operational Environmental Management Plan (OEMP)

B11. Prior to commencement of works, an Operational Environmental Management Plan (OEMP) identifying environmental management practices for the conservation area in the eastern part of the site and the retained woodland in the developable areas of the site shall be provided to the Certifying Authority. The Plan shall address but not be limited to, the following matters where relevant:

a) weed management;

b) vegetation clearing procedures;

c) pre-clearing survey procedures to minimise impacts on fauna;

d) installation of habitat boxes for microbats;

e) injured animal responses;

f) retention of hollow-bearing trees;

g) stop work incidents and procedures;

h) erosion and sediment control; and

i) topsoil management.

The plan is to span the entire project duration from pre-construction to through to construction and post construction.

Construction Environmental Management Plan (CEMP)

B12.

a) Prior to the commencement of works, a Construction Environmental Management Plan (CEMP) shall be submitted to the Certifying Authority. The CEMP shall be consistent with the *Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).* The CEMP shall include details sufficient to understand and avoid, mitigate and remedy all potential environmental impacts of the project during construction. The Plan shall address, but not be limited to, the following matters where relevant:

i) hours of work;

ii) 24 hour contact details of site manager;

iii) traffic management, in consultation with the council;

iv) construction noise and vibration management, prepared by a suitably qualified person;

v) management of dust to protect the amenity of the neighborhood;

vi) erosion and sediment control;

vii) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the subject site;

viii) archaeological deposits;

ix) salinity assessment management plan; and

x) flora and fauna management.

b) The CEMP must not include works that have not been explicitly approved in the development consent. In the event of any inconsistency between the consent and the CEMP, the consent shall prevail.

c) The applicant shall submit a copy of the CEMP to council, prior to commencement of work.

Safety Management Study

B13. A Safety Management Study prepared by a suitably qualified person addressing the safety issues associated with the high pressure gas pipeline traversing the western part of the site in accordance with *Australian Standard AS 2885-Pipelines-Gas and Liquid Petroleum* shall be submitted to the Certifying Authority prior to the commencement of any works on the subject site.

Construction Traffic & Pedestrian Management Plan

B14.

a) Prior to the commencement of any works on the subject site, a Traffic and Pedestrian Management Plan prepared by a suitably qualified person shall be submitted to the Certifying Authority and council. The Plan shall address, but not limited to, the following measures:

i) ingress and egress of vehicles to the subject site;

ii) hours of operation;

iii) loading and unloading, including construction zones;

iv) construction traffic and construction car parking arrangements;

v) predicted traffic volumes, types and routes; and

vi) pedestrian and traffic management methods.

Sydney Water Notice of Requirements

B15.

a) An application shall be made to Sydney Water for a Certificate under Part 6, Division 9, section 73 of the Sydney Water Act 1994 (Compliance Certificate) prior to the issue of any Construction Certificate.

b) The Application must be made through an authorised Water Servicing Coordinator. Please refer to the "Your Business" section of the web site www.sydneywater.com.au then follow the "e-Developer" icon or telephone 13 20 92 for assistance.

c) Following application a "Notice of Requirements" will advise of water and sewer extensions to be built and charges to be paid. Please make early contact with the Coordinator, since building of water/sewer extensions can be time consuming and may impact on other services and building, driveway or landscape design.

Geo-technical Investigation

B16. Prior to the commencement of work on the subject site, a Geo-technical investigation prepared by a suitably qualified person shall be submitted to the Certifying Authority addressing the following:

a) subsoil conditions for pavement design;

b) soil characteristics for retaining wall construction;

c) salinity parameters; and

d) groundwater affectation due to the civil works.

Utility Services

B17. Prior to the commencement of work, the applicant is to negotiate with the utility authorities (e.g. Ausgrid and Telecommunications Carriers) in connection with the relocation and/or adjustment of the services affected by the construction of the underground structure.

B18. Prior to the commencement of works, written advice shall be obtained from the electricity supply authority, an approved telecommunications carrier and an approved gas carrier (where relevant) stating that satisfactory arrangements have been made to ensure provision of adequate services.

Erosion and Sedimentation Control

B19. Soil erosion and sediment control measures shall be designed in accordance with the document *Managing Urban Stormwater–Soils & Construction Volume 1* (2004) by Landcom. Details are to be submitted to the satisfaction of the Certifying Authority and council.

Demolition

B20. Any demolition work shall comply with the provisions of *Australian Standard AS2601: 2001 The Demolition of Structures*. The work plans required by AS2601: 2001 shall be accompanied by a written statement from a suitably qualified person that the proposals contained in the work plan comply with the safety requirements of the Standard. The work plans and the statement of compliance shall be submitted to the satisfaction of the Certifying Authority prior to the commencement of works.

Remediation

B21. Remediation approved as part of this development consent shall be carried out in accordance with the *Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub* prepared by Consara dated 25 June 2013. A site audit must be carried out by a site auditor prior to the commencement of remediation works.

Notice of Commencement of Works

B22. The Certifying Authority and council shall be given written notice, at least 48 hours prior to the commencement of building works on the subject site.

Historical Archaeological Management Plan

B23. Prior to the commencement of any works a Historical Archaeological Management Plan prepared by a suitably qualified person shall be submitted to the Certifying Authority. The plan shall address the monitoring and management of potential remains of the school and the Begg family homes including Bee Hive Wells in the vicinity of The Great Western Highway.

PART C DURING CONSTRUCTION

Hours of Work

C1. The hours of construction, including the delivery of materials to and from the subject site, shall be restricted as follows:

a) between 7:00 am and 6:00 pm, Mondays to Fridays inclusive;

b) between 8:00 am and 1:00 pm, Saturdays;

c) no work on Sundays and public holidays; and

d) works may be undertaken outside these hours where:

i) the delivery of materials is required outside these hours by the Police or other authorities;

ii) it is required in an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm; and

iii) variation is approved in advance in writing by the Secretary or his/her nominee.

Erosion and Sediment Control

C2. All erosion and sediment control measures are to be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as a source of sediment.

Site Remediation

C3. The site the subject of the early works is to be remediated in accordance with the *Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub* prepared by Consara dated 25 June 2013.

Waste Management Plan

C4.

a) Prior to the commencement of any works on the subject site, a Construction Waste Management Plan prepared by a suitably qualified person in consultation with the council, shall be submitted to the Certifying Authority. The Plan shall address, but not be limited to, the following matters:

   i) recycling of demolition materials, including concrete; and

   ii) removal of hazardous materials and disposal at an approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of any building works.

b) Details demonstrating compliance with the relevant legislative requirements, associated with the removal of hazardous waste, particularly the method of containment and control of emission of fibres to the air, are to be submitted to the satisfaction of the Certifying Authority prior to the removal of any hazardous materials.

c) The applicant shall submit a copy of the Plan to the council, prior to commencement of work.

d) The applicant must notify the Roads and Maritime Services Traffic Management Centre (TMC) of the truck route(s) to be followed by trucks transporting waste material from the subject site, prior to the commencement of the removal of any waste material from the subject site.

e) All demolition, excavation and construction waste dockets are to be retained on site, or at suitable location, in order to confirm which facility received materials generated from the site for recycling or disposal.

   i) Each docket is to be an official receipt from a facility authorised to accept the material type, for disposal or processing; and

   ii) This information is to be made available at the request of an authorised officer of council.

Disposal of Seepage and Stormwater

C5. Any seepage or rainwater collected on-site during construction or groundwater shall not be pumped to the street stormwater system unless separate prior approval is given in writing by council.

Approved Plans to be On-site

C6. A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the subject site at all times and shall be readily available for perusal by any officer of the Department, council or the certifying authority.

Site Notice

C7.

a) A site notice(s) shall be prominently displayed at the boundaries of the subject site for the purposes of informing the public of the project details including, but not limited to the details of the Builder and Certifier.

b) The notice(s) is to satisfy all, but not be limited to, the following requirements:

   i) Minimum dimensions of the notice are to measure 841mm x 594mm (A1) with any text on the notice to be a minimum of 30 point type size;

ii) The notice is to be durable and weatherproof and is to be displayed throughout the works period;

iii) The approved hours of work, the name of the site/project manager, the responsible managing company (if any), its address and 24 hour contact phone number for any inquiries, including construction/noise complaint are to be displayed on the site notice; and

iv) The notice(s) is to be mounted at eye level on the perimeter hoardings/fencing and is to state that unauthorised entry to the subject site is not permitted.

Construction Noise Management

C8. The development shall be constructed with the aim of achieving the construction noise management levels detailed in the *Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009).* All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the Construction Noise and Vibration Management Plan.

Vibration Criteria

C9. Vibration caused by construction at any residence or structure outside the subject site must be limited to:

a) for structural damage vibration, German Standard DIN 4150 Part 3 Structural Vibration in Buildings. Effects on Structures;

b) for human exposure to vibration, the evaluation criteria presented in *British Standard BS 6472- Guide to Evaluate Human Exposure to Vibration in Buildings (1Hz to 80 Hz)* for low probability of adverse comment;

c) Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified above; and

d) These limits apply unless otherwise outlined in a Construction Noise and Vibration Management Plan.

Work Cover Requirements

C10. To protect the safety of work personnel and the public, the work site shall be adequately secured to prevent access by unauthorised personnel, and work shall be conducted at all times in accordance with relevant Work Cover requirements.

Hoarding Requirements

C11. The following hoarding requirements shall be complied with:

a) No third party advertising is permitted to be displayed on the subject hoarding/fencing; and

b) The construction site manager shall be responsible for the removal of all graffiti from any construction hoardings or the like within the construction area within 48 hours of its application.

Impact of Below Ground (sub-surface) Works – Non-Aboriginal Relics

C12. Archaeological monitoring in accordance with the Archaeological Management Plan is to be carried out in relation to all ground works in areas of high or moderate archaeological potential as outlined in the Historical Archaeological Management Plan. If any archaeological relics are uncovered during the course of the work, then all works shall cease immediately in that area and the OEH Heritage Branch is to be contacted. Depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the NSW Heritage Act 1977 may be required before further works can continue in that area.

Discovery of Aboriginal Heritage

C13. In the event that surface disturbance identifies a new Aboriginal object, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitably qualified archaeologist and a registered Aboriginal representatives must be contacted to determine the significance of the object(s). The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) which is managed by OEH and the management outcome for the site included in the information provided to AHIMS. The applicant must consult with the Aboriginal community representatives, the archaeologist and the OEH to develop and implement management strategies for all objects/sites. Aboriginal heritage Management is to be carried out in accordance with an AHIP applicable to the site.

PART D PRIOR TO ISSUE OF A SUBDIVISION CERTIFICATE

Subdivision and Infrastructure Works – Works-As-Executed

D1. Prior to the issue of a subdivision certificate, detailed "work as executed" drawings shall be prepared and signed by a registered surveyor, which show the finished surface levels of the access road, road shoulder, driveway, inter-allotment drainage and any lot filling, carried out under this consent. The "work as executed" drawing shall be submitted to the certifying authority and council prior to the issue of a subdivision certificate.

On Site Detention – Works-As-Executed

D2. On completion of the drainage works and prior to the issue of the Engineering Compliance Certificate, Works-As-Executed plans certified by a Registered Surveyor are to be submitted to the Certifying Authority to verify that the drainage works have been completed in accordance with the approved plans.

On Site Detention – Registration of Restriction and Covenant

D3. Prior to the issue of the Engineering Compliance Certificate, proof of the creation of a 'restriction on use of land' and 'positive covenant' over the on-site detention system shall be submitted to the Certifying Authority.

On Site Detention – Certification of Works

D4. A Certificate shall be issued to the Certifying Authority upon completion of the drainage works and prior to issue of the Engineering Compliance Certificate, certifying the following:

a) That the On-Site Detention system will function in accordance with the approved drainage design.

b) Any variations from the approved drainage design.

c) That these variations will not impair the performance of the On-Site Detention system, or alternatively provide details of the remedial works required to make the system function according to design control standards.

Registration of Easements

D5. Prior to the issue of a subdivision certificate, the applicant shall provide to the Certifying Authority evidence that all matters required to be registered on title including easements required by this consent, approvals, and other consents have been lodged for registration or registered at the NSW Land and Property Information.

Sydney Water Compliance

D6. A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water Corporation.

Application must be made through an authorised Water Servicing Coordinator. Please refer to the "Your Business" section of the web site www.sydneywater.com.au then follow the "e-Developer" icon or telephone 13 20 92 for assistance.

The Section 73 Certificate must be submitted to the Certifying Authority prior to the issue of a subdivision certificate.

Road Damage

D7. The cost of repairing any damage caused to council or other Public Authority's assets in the vicinity of the subject site as a result of construction works associated with the approved development, is to be met in full by the applicant.

Dedication

D8. The internal access road shall be constructed by the applicant and is to be dedicated to council as a public road. Prior to any dedication, the applicant shall ensure that the construction of the road has been completed to the satisfaction of council. Despite any formal dedication, the applicant shall remain responsible for the maintenance of the road for the duration of the maintenance period, being 12 month from the date of dedication of the road to council.

Site Remediation

D9. Upon completion of the remediation works on the subject site, the applicant shall submit to the Certifying Authority and council a final salinity management plan, validation report, notice of completion and site audit statement prepared by a site auditor. The validation report and site audit statement must verify that the land is suitable for the proposed future uses. should be submitted

Note: The applicant must comply with clauses 17 and 18 of *State Environmental Planning Policy No.55 - Remediation of Land*.

Note: Words and expressions used in these conditions have the same meaning as in the *Contaminated Land Management Act 1997*.

Utilities

D10. Prior to the issue of a subdivision certificate, a certificate from an electricity and telecommunications provider shall be submitted to the Certifying Authority.

ADVISORY NOTES

Appeals

AN1. The applicant has the right to appeal to the Land and Environment Court in the manner set out in the Environmental Planning and Assessment Act, 1979 and the Environmental Planning and Assessment Regulation, 2000 (as amended).

Other Approvals and Permits

AN2. The applicant shall apply to the council for all necessary permits including crane permits, road opening permits, hoarding or scaffolding permits, footpath occupation permits and/or any other approvals under Section 68 (Approvals) of the Local Government Act, 1993 or Section 138 of the Roads Act, 1993.

Responsibility for other Consents / Agreements

AN3. The applicant is solely responsible for ensuring that all additional consents and agreements are obtained from other authorities, as relevant.

Temporary Structures

AN4.

a) An approval under State Environmental Planning Policy (Temporary Structures) 2007 must be obtained from the council for the erection of any temporary structures. The application must be supported by a report detailing compliance with the provisions of the Building Code of Australia.

b) Structural certification from an appropriately qualified practicing structural engineer must be submitted to the council with the application under State Environmental Planning Policy (Temporary Structures) 2007 to certify the structural adequacy of the design of the temporary structures.

Disability Discrimination Act

AN5. This application has been assessed in accordance with the Environmental Planning and Assessment Act 1979. No guarantee is given that the proposal complies with the Disability Discrimination Act 1992. The applicant/owner is responsible to ensure compliance with this and other anti-discrimination legislation. The Disability Discrimination Act 1992 covers disabilities not catered for in the minimum standards called up in the Building Code of Australia which references AS 1428.1 - Design for Access and Mobility. AS1428 Parts 2, 3 & 4 provides the most comprehensive technical guidance under the Disability Discrimination Act 1992 currently available in Australia.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

AN6.

a) The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 provides that a person must not take an action which has, will have, or is likely to have a significant impact on a matter of national environmental significance (NES) matter; or Commonwealth land, without an approval from the Commonwealth Environment Minister.

b) This application has been assessed in accordance with the New South Wales Environmental Planning & Assessment Act, 1979. The determination of this assessment has not involved any assessment of the application of the Commonwealth legislation. It is the applicant's responsibility to consult the Department of Sustainability, Environment, Water, Population and Communities to determine the need or otherwise for Commonwealth approval and you should not construe this grant of approval as notification to you that the Commonwealth Act does not have application. The Commonwealth Act may have application and you should obtain advice about this matter. There are severe penalties for non-compliance with the Commonwealth legislation.

Asbestos Removal

AN7. All excavation works involving the removal and disposal of asbestos must only be undertaken by contractors who hold a current WorkCover Asbestos or "Demolition Licence" and a current WorkCover "Class 2 (Restricted) Asbestos Licence and removal must be carried out in accordance with NOHSC: "Code of Practice for the Safe Removal of Asbestos".

Site contamination issues during construction

AN8. Should any new information come to light during demolition or construction works which has the potential to alter previous conclusions about site contamination then the applicant must be immediately notified and works must cease. Works must not recommence on site until the consultation is made with the Department.

Modification of Minister's Approval

Section 75W of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 16 February 2015, we determine the modification of the State Significant Development approval referred to in Schedule 1, subject to the Conditions in Schedule 2.

Ben Lusher
Director
Key Sites Assessments

Sydney 2016

SCHEDULE 1

Application No.:	SSD 5175 MOD 1
Applicant:	Western Sydney Parklands Trust
Approval Authority	Minister for Planning
Land:	Eastern Park Business Hub, Rooty Hill (Western Sydney Parklands)
Project:	Eastern Creek Business Hub Staged Development Application, including: • A concept proposal for a new retail centre comprising 52,800 sqm gross floor area to accommodate 'retail premises', 'bulky goods premises' and 'business premises' uses and a development structure including land uses; site layout; building envelopes; and design parameters. • Stage 1 subdivision and early works including super lot subdivision to create three developable allotments and one residual allotment; construction of an access road; bulk and detailed earthworks; stormwater management; civil engineering works; landscaping; and rehabilitation of the existing woodland areas identified for open space/conservation.
Modification:	Modifications to: • transfer the Beggs Road easement into Phase 1B and Phase 2 of the business hub land; • maintain and incorporate the proposed pedestrian link to Church Street into Phase 2 of the development; • reconfigure the stormwater drainage system including provision of a second on-site detention basin; • undertake additional bulk earthworks to include remediation, establishing pad sites 1, 2, 3 and 4, reducing the need for retaining walls, and accommodate the amended stormwater drainage system; and • allow any residual large format retail gross floor area (GFA) up to the approved maximum to be used as bulky goods GFA, and a maximum of 500m^2 of residual supermarket GFA to be used as specialty shops/small business GFA.

DRAFT

SCHEDULE 2

CONDITIONS

The above approval is modified as follows:

*(a) The following conditions are included or amended by the insertion of the **bold and underlined** words /numbers and deletion of the ~~struck out~~ words / numbers as follows:*

SCHEDULE 2 – TERMS OF APPROVAL FOR CONCEPT PROPOSAL

Development Description

A1 Consent is granted to the 'concept proposal' as described in Schedule 1 and the Environmental Impact Statement, as amended by the Response to Submissions**, associated documents submitted with Modification 1,** and the conditions contained in this development consent.

Development in Accordance with Plans and Documents

A4 The applicant shall carry out the development generally in accordance with the:

a) *Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement* prepared by Architectus dated September 2012, as amended by the

b) *Eastern Creek Business Hub State Significant Development SSD 5175 Response to Submissions* prepared by Architectus dated April 2014; and

c) *Eastern Creek Business Hub Design Guidelines* prepared by Architectus dated 12 February 2014; and

d) ***S.96(2) SSD Modification 5175 Eastern Creek Business Hub*** **prepared by JBA Urban Planning Consultants Pty Ltd dated August 2015; and**

e) ***State Significant Development (SSD 5175) MOD 1 Rooty Hill Road South, Eastern Creek Response to Submissions*** **prepared by JBA Urban Planning Consultants Pty Ltd dated January 2016; and**

f) following drawings, except for:

i) any modifications which are 'Exempt' or 'Complying Development'; and

ii) otherwise provided by the conditions of this consent.

Concept Proposal			
Concept Plans ~~prepared by Architectus~~			
Drawing No.	**Revision**	**Name of Plan**	**Date**
~~EIS-01 (G)~~	**A**	Structure Plan	~~24 July 2013~~ **19 August 2015**
	D	**Stage 1 Early Works – Phasing Plan**	**19 August 2015**
~~EIS-05 (H)~~	**C**	Preferred Indicative Plan	~~24 July 2013~~ **19 August 2015**
~~EIS-03 (G)~~	**B**	Enabling Infrastructure Works	~~24 July 2013~~ **19 August 2015**
Landscape Plans prepared by Urbis			
LA01	06	Illustrative Landscape Masterplan	27 August 2012

Maximum Gross Floor Area (GFA)

A7 The maximum GFA for the total development shall not exceed 52,800 sqm and the individual land use components shall have a maximum GFA as follows:

Land Use	**Maximum GFA (sqm)**	
bulky goods	**29,300**	**Any residual large format retail GFA may be transferable to bulky goods GFA provided the combined maximum GFA for bulky goods and large format retail does not exceed 43,300m^2.**
large format retail	**14,000**	

convenience retail - supermarket - specialty shops/small business	**9,500** (4,000) (5,500)	**A maximum of 500m^2 of residual supermarket GFA may be transferable to specialty shops/small business GFA provided the maximum GFA for convenience retail does not exceed 9,500m^2.**
TOTAL	**52,800**	

Ownership

A9 Western Sydney Parklands Trust (WSPT) is to retain ownership of the basins and the internal roads.

Stormwater

B12 Future development applications for the construction of buildings shall include a stormwater management plan in accordance with the *Water Cycle Management Strategy Report Incorporating Water Sensitive Urban Design Techniques* prepared by J. Wyndham Prince dated March 2013 **and as amended by Civil Engineering Report: Amendment to State Significant Development 5175-2012 prepared by Costin Roe dated 4 August 2015 and Response Letter dated 23 December 2015** and council's *Engineering Guide for Development 2005*.

SCHEDULE 3 - CONDITIONS OF CONSENT FOR STAGE 1 SUBDIVISION AND EARLY WORKS

Development in Accordance with Plans and Documents

A2 The applicant shall carry out the 'Stage 1 subdivision and early works' generally in accordance with the:

a) *Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement* prepared by Architectus dated September 2012, as amended by the

b) *Eastern Creek Business Hub State Significant Development SSD 5175 Response to Submissions* prepared by Architectus dated April 2014; and

c) *Eastern Creek Business Hub Design Guidelines* prepared by Architectus dated 12 February 2014; and

d) ***S.96(2) SSD Modification 5175 Easter Creek Business Hub*** **prepared by JBA Urban Planning Consultants Pty Ltd dated August 2015; and**

e) ***State Significant Development (SSD 5175) MOD 1 Rooty Hill Road South, Eastern Creek Response to Submissions*** **prepared by JBA Urban Planning Consultants Pty Ltd dated January 2016; and**

f) following drawings, except for:

i) any modifications which are 'Exempt' or 'Complying Development'; and

ii) otherwise provided by the conditions of this consent.

Stage 1 Subdivision			
Subdivision drawing prepared by Land partners			
Drawing No.	**Revision**	**Name of Plan**	**Date**
S073106	AMD 7b	Proposed Subdivision of Eastern Creek Business Hub Rooty Hill Road South, Eastern Creek	24 May 2013
Early works drawings ~~prepared by Architectus~~			
EIS-04(H)	**D**	Stage 1 Early Works Phasing Plan	~~24 July 2013~~ **19 August 2015**
	B	**Enabling Infrastructure Works**	**19 August 2015**
Civil Works Plan prepared by Costin Roe Consulting			
C012693.00-DA15	**B**	**Overall Site Plan**	**21 July 2015**
C012693.00-DA20	**B**	**Erosion & Sediment Control Plan**	**21 July 2015**
C012693.00-DA25	**B**	**Erosion & Sediment Control Details**	**21 July 2015**

C012693.00-DA30	**C**	**Bulk Earthworks Plan**	**4 August 2015**
C012693.00-DA31	**A**	**Retaining Wall Plan**	**4 August 2015**
C012693.00-DA32	**A**	**Retaining Wall Details**	**4 August 2015**
C012693.00-DA35	**C**	**Bulk Earthworks Sections Sheet 1**	**4 August 2015**
C012693.00-DA40	**C**	**Stormwater Drainage Plan**	**4 August 2015**
C012693.00-DA41	**B**	**Stormwater Catchment Plan**	**21 July 2015**
C012693.00-DA42	**B**	**Stormwater Drainage Longsections – Sheet 1**	**21 July 2015**
C012693.00-DA45	**B**	**Stormwater Drainage Details – Sheet 1**	**21 July 2015**
C012693.00-DA46	**B**	**Stormwater Drainage Details – Sheet 2**	**21 July 2015**
C012693.00-DA50	**B**	**Road 1 Finished Levels Plan**	**21 July 2015**
C012693.00-DA55	**B**	**Road Typical Cross Sections**	**21 July 2015**
Road Improvement Works Sketch prepared by J. Wyndham Prince			
8801/SK04	H	Proposed Works Sketch	22 May 2013
Landscape Plans prepared by Urbis			
LA06	00	Phase 1 – Recommended Plant Species	27 August 2012
LA07	00	Phase 1 – Landscape furniture Palette	24 August 2012
LA08	02	Phase 1 – Street Tree Planting Works	10 September 2012
LA09	02	Phase 1 – Street Tree Planting Works	10 September 2012
LA10	00	Phase 1 – Street Tree Planting Works	30 August 2012

European Archaeological Heritage

A9 The key recommendations of the Archaeological Assessment Management Plan prepared by Biosis shall be implemented during all stages of the development

Biodiversity Offset Strategy

B2 The applicant shall retire 46.3 ecosystem credits of Grey Box-Forest Red Gum woodland at the Chandos Street West Biobank Site (Biobank Site 70) in accordance with the offset strategy in the ecological assessment prepared by Ecological Australia dated August 2012 to offset the loss of 1.93 hectares of Cumberland Plain Woodland (sub community) on the subject site **prior to any clearing**.

~~**Historical Archaeological Management Plan**~~

~~B23 Prior to the commencement of any works a Historical Archaeological Management Plan prepared by a suitably qualified person shall be submitted to the Certifying Authority. The plan shall address the monitoring and management of potential remains of the school and the Begg family homes including Bee Hive Wells in the vicinity of The Great Western Highway.~~

Aboriginal Interpretation Strategy

B24 An interpretation strategy for the site affected by the former Eastern Creek School and other relevant areas of the site as established in the AMP, is to be established in consultation with the Mount Druitt Historical Society.

Engineering

B25 Once a minimum of 90% of all the upstream building works, retaining walls and driveways have been completed as agreed with Council for each bioretention basin, the filter media and plants are to be installed within 6 months. Once these are installed:

a) A Geotechnical Engineer is to undertake in-situ Saturated Hydraulic Conductivity Testing of each of the bio-retention systems in accordance with Practice Note 1 of the FAWB

guidelines. For bio-retention systems with a filter area less than 50 m^2, *in situ* hydraulic conductivity testing should be conducted at three points. For systems with a filter area greater than 50 m^2, an extra test point should be added for every additional 100 m^2 or part thereof. Points are to be spatially distributed. Where the hydraulic conductivity of the soil differs from the rate specified in MUSIC of by 100 mm/hr (tolerance -0% to +400%), remediation works will be required over the filter area to restore the conductivity and the test repeated until the hydraulic conductivity is achieved. A Geotechnical Engineer is to then certify that in accordance with Practice Note 1 of the FAWB guidelines, the Saturated Hydraulic Conductivity is within tolerance to the rate specified in MUSIC for each of the bio-retention systems; and

b) After the hydraulic conductivity has been certified by the Geotechnical Engineer, a horticulturalist that has relevant tertiary qualifications and technical knowledge with a minimum of 5 years demonstrated experience is to certify that the planting within the bio-retention area including bank areas, is of the same quality in type and quantity as per the construction certificate approved landscape plans, that any plants lost have been replaced and that any areas of scour or disrepair have been restored.

Water Quality

B26 The development must at all times maintain the water quality system to achieve the following minimum pollutant removal targets for the entire site in perpetuity including the approved bioretention plant species:

Required percentage reductions in post development average annual load of pollutants

Pollutant	% post development pollutant reduction targets
Gross Pollutants	90
Total Suspended Solids	85
Total Phosphorous	65
Total Nitrogen	45
Total Hydrocarbons	90

Stormwater Drainage

B27 Amended drainage plans by Costin Roe, are to be provided to meet the requirements under Councils DCP Part R 2006 and Councils Engineering Guide for Development 2005. The amended plans must address the following:

a) Provide additional detailed sections through each of the channels clearly identifying batter slopes and finishes.

b) Redesign the culvert crossing of channel 01 to Pad 1 to assume a 50% blockage in the culvert. Where no blockage was previously assumed it is acceptable to double the culvert size to compensate. Details are to be provided.

c) The HEC-RAS modelling to be revised to provide for the existing creek and channel 04 a Mannings n of 0.07 for the BASE and n = 0.1 for the overbank (with larger shrubs and trees).

d) The channelization of the 100 year flows through Channel 01 to the existing creek will lead to increased scour and deterioration of the existing creek as previous high flows would have spread over a much wider area. A review of the geomorphology of the existing creek to cope with the increased flow is to be undertaken with recommended improvements detailed such as ponds and riffles, bank armouring of bends, scour protection, etc. as required.

e) The rainwater tanks are required all the developments are to be designed to achieve a minimum 80% of non-potable demand to be met through rainwater. When sizing the rainwater tank increase the calculated volume by 20 % to account for anaerobic zones, mains water top up levels and overflow levels.

f) To protect the bioretention systems from harmful sediments and pollutants a Gross Pollutant Trap (GPT) is required for any discharge from future developments in Pads 2, 3, or 4 to the external drainage system, including discharges direct to basin 2. The GPTs are to remove a minimum 50% TSS and have an oil baffle able to trap and contain oil or hydrocarbons and sized to treat a minimum six month ARI flow.

g) To provide a water source to ensure ongoing viability of the bioretention plants a saturated zone is required comprising a 300 mm transition layer and a gravel layer sized as the larger of 200 mm, or 50 mm above the largest subsoil pipe. The saturated zone is set to the underside of the filter media and standard pit details are available from Council. On Costin Roe Plan CD12693.00-DA45(C) under "TYPICAL BIO-RETENTION DETAIL" amend the detail to match this requirement.

h) **The un-socked subsoil drains within the saturated bioretention filter bed can be laid flat, however any non-slotted collection pipes discharging the subsoil flows away from the basin are to have a minimum grade of 0.5 %. Where subsoil lines connect with a larger subsoil collection pipe, the subsoil pipes are to connect via two 45 degree bends with a minimum 300 mm straight section between to allow for rodding. The collection pipe is to have its own rodding point. Provide details of sizing to ensure a minimum of twice the capacity based on both pipe capacity and flow through the slots.**

i) **On Costin Roe Plan CD12693.00-DA45(C) under "TEMPORARY BIO-RETENTION PROTECTION DETAIL" set the geotextile immediately above the transition layer (i.e. no filter media at all) with "COARSE SAND & TURF, NOM 100 - 150" above plus previous amendments as above. The bioretention notes are to be adjusted to match;**

j) **Provide a detail of a subsoil riser for flushing and maintenance of the subsoil collection pipe. The riser is to include two 45^0 bends with a short section of un-slotted straight (minimum 300 mm) in between. The vertical riser is to stop 50 mm above the filter media and sealed with a removable screw cap.**

k) **Provide an intermediate riser detail for long subsoil lines, or subsoil collection pipes at maximum 20 m intervals.**

l) **Provide a separate pit for the collection of flows from the bioretention subsoil drainage from Basin 2 that is independent of the overflow pit or discharge control pit for on-site detention. The top of the pit is to be either sealed or set a minimum of 100 mm above the top of the 1 in 100 year detention storage. The subsoil drainage is to discharge downstream of the discharge control pit. Provide a separate subsoil collection pit for bio basin 1.**

m) **Provide minimum 3.5 m maintenance access tracks into bio basin 1, basin 1 and Basin 2. Tracks greater than 5% must be concreted, but must not exceed 10%. A minimum 3 m wide access track must be provided at the base of the embankment for the basin 2 bioretention system to allow for future bioretention maintenance set to 100 mm above the extended detention depth. Provide a general vehicular maintenance access plan.**

n) **The existing outlet control for basin 2 is incorrect. Electronic hydrologic models are to be provided for the detention basin design to ensure that the predevelopment flows do not exceed the post development flows for all storm durations and for all ARIs from 1 year to 100 year. Allow for an initial pervious loss of 15 mm for the pre development case and the post development losses (5 mm) as per the Engineering Guide for Development. RAFTS itself or the RAFTS hydrological model in DRAINS is preferred to allow for the 15 mm initial loss. There are currently no modelled pre development nodes for this catchment to compare to. Review storages which is not to be less than 5600 m^3 that excludes the bioretention extended storage.**

o) **Bothe detention basins are to install a concrete cutoff wall under the full extent of the spillways to minimise risk of seepage flows and failure.**

p) **Provide a stilling basin at the base of the downstream spillway of both detention basins.**

B28 Maintenance schedule requirements are to be provided for each of the Stormwater Quality Improvement Devices including the rainwater tank. For bioretention systems these are to include the temporary bio-retention system and ultimate bioretention system replacement. Where these devices are located in roadway/parking areas these are to include traffic management requirements. The designer of the stormwater treatment system must prepare the Maintenance schedule and this schedule must show the designer's name, signature and date on it.

B29 A certificate from a Professional Geotechnical Engineer registered with NPER must be obtained and submitted to Council verifying that the detention basin and it's embankments can withstand a 1 in 100 year ARI event and a PMF event. The modelling is to consider both independent events and local interaction with floods in the creek. Any requirements of the Geotechnical Engineer as to lining the crest and spillway or other necessary protection is to be incorporated into the design.

Landscaping

B30 Amended landscape plans are to be provided to meet the requirements under Councils DCP Part R 2006 and Handbook. The amended plans must address the following:

a) **For the bioretention system include appropriate species in accordance with the BCC Handbook Part 5 - Vegetation Selection Guide (October 2012 or as revised) for the 500 mm deep filter media. Planting within the filter area should incorporate several growth forms, including shrubs and tufted plants and be densely planted (tufted plants at a**

minimum of 10 plants per square metre) to ensure plant roots occupy all parts of the media. Groundcover species must not be used. To ensure diversity and disease resistance a minimum of 10 different species (including one or more shrubs) is required planted as a matrix. All plants within the filter area are to be planted from tubestock or virotube and not pots.

b) Provide a turf specie for channel 01 capable of sustaining a 1V: 3H batter. Detail any geogrids or other enhanced support to sustain such a steep batter slope.

c) Provide a Vegetation Management Plan for the existing creek channel from channel 01 to basin 1 including endemic riparian native plants.

d) Provide a Vegetation Management Plan for the remainder of the site outside the development area including endemic native plants and additional Cumberland Plains Woodland.

e) Replace the proposed turf channel 04 with a riparian landscaped channel with Cumberland Plain Woodland surrounds to support and enhance the local environment.

Cut and Fill

B31 All cut and fill details are to be provided to the Certifying Authority. Cut and fill is to be limited to ensure the original topography of the site remains understood.

Retaining Walls

B32 Details of any retaining walls, including height and material, to be constructed on site as part of the development are to be submitted to the Certifying Authority. Masonry retaining walls (i.e. no timber walls) are to be provided. All retaining walls shall be in maximum 3 metres high sections and stepped with 1 metre wide minimum planting bays which are to be landscaped. Where retaining walls 1.5m or greater are provided, these should not be provided in long expanses.

Hours of Work

C1 The hours of construction, including the delivery of materials to and from the subject site, shall be restricted as follows:

a) between 7:00 am and 6:00 pm, Mondays to Fridays inclusive;
b) between 8:00 am and 1:00 pm, Saturdays;
c) no work on Sundays and public holidays; and
d) works may be undertaken outside these hours where:
   i) the delivery of materials is required outside these hours by the Police or other authorities;
   ii) it is required in an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm;
   iii) it is for non offensive noise-generating works; and
   iv) variation is approved in advance in writing by the Secretary or his/her nominee.

Any objectionable noise, dust, concussion, vibration or other emission from the development works shall not exceed the limit prescribed in the Protection of the Environment Operations Act 1997.

C1A Activities generating noise with particularly annoying or intrusive characteristics should be a regime of intra-day respite periods where:

a) they are only undertaken after 8:00am;

b) they are only undertaken over continuous periods not exceed 3 hours with at least a 1 hour respite every 3 hours; and

c) 'continuous' means any period during which there is less than an uninterrupted 60 minutes respite between temporarily halting and recommencing any of the work referred in Interim Construction Noise Guideline (2009).

Site Remediation

C3 The site the subject of the early works is to be remediated in accordance with the *Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub* prepared by Consara dated ~~25 June 2013~~ **28 July 2015 and as amended from time to time with consent from an NSW Accredited Auditor.**

C5A Concrete waste and rise water are not to be disposed of on the development site.

C14 As part of the on-site demolition works and initial bulk excavation of the site, areas of high and medium archaeological potential within the project area (as identified in the Archaeological Assessment Plan prepared by BIOSYS) are to be subject to a program of monitoring. Should intact archaeological remains be identified, the excavation and recording techniques as detailed in the Archaeological Assessment Management Plan are being undertaken. It is intended to excavate the areas to a maximum depth of 1.2 metres. However, this may need to be revised in the event that deep archaeological structures or deposits are encountered. Should substantial archaeological remains be located the excavations must cease once the nature of the structural and depositional archaeological remains have been established.

Asbestos

C15 All works shall comply with the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 'asbestos wastes'. This shall include consultation with WorkCover NSW concerning the handling of asbestos.

Construction Vehicles

C16 Construction vehicles (including concrete agitator trucks) involved in construction and construction-related activities are not to arrive at the site or in surrounding residential precincts outside approved construction hours.

Dust Control

C17 During all stages of construction, measures and practices shall be in place to:

- **a) minimise dust emissions on site; and**
- **b) prevent dust emissions from the site.**

Drainage

C18 Prior to placement of the filter media layer, certification for the following is to be provided:

- **a. A minimum hydraulic conductivity as defined by ASTM F1815-06 of 200 mm/hr (actual, not predicted**
- **b. A maximum hydraulic conductivity as defined by ASTM F1815-06 of 700 mm/hr (actual, not predicted)**
- **c. An Orthophosphate content < 20 mg/kg**
- **d. A Total Nitrogen content < 1000 mg/kg**
- **e. Is not hydrophobic.**

C19 The 200 micron Enviropods supplied by Stormwater 360 as detailed on the approved drainage plan are not to be reduced in size or quantity, nor replaced with an alternate manufacturer's product.

C20 The filter media in the bioretention area is not to be installed or bioretention plants installed until a minimum of 90% of all the upstream building works, retaining walls and driveways have been completed.

Drainage

D11 A positive covenant is to be provided over each lot for future development to achieve a minimum of 80% of the non-potable water uses on-site using rainwater or stormwater.

D12 A positive covenant is to be provided over each lot for future development to provide a Gross Pollutant Trap (GPT) prior to any discharge from future developments in Pads 2, 3, or 4. The GPTs are to remove a minimum 50% TSS and have an oil baffle able to trap and contain oil or hydrocarbons and sized to treat a minimum six month ARI flow.

D13 A restriction to user and positive covenant is to be provided over the conservation areas for restoration works to be in accordance with the Vegetation Management Plan (VMP).

D14 A restriction to user and positive covenant is to be provided over the On-Site Detention System in Basins 1 and 2 in accordance with the requirements of Council's Engineering Guide for Development 2005. The restriction to user and positive covenant must be registered with Land & Property Information.

D15 A restriction to user and positive covenant is to be provided over the Stormwater Quality Improvement Devices in accordance with the requirements of Council's Engineering Guide for Development 2005. The covenant requirements are to include the submission of an annual report on water treatment by the first business day on or after 1 September each year. The Restriction to User and Positive Covenant must be registered with Land & Property Information prior to the final occupation certificate.

D16 A horticulturalist that has relevant tertiary qualifications and technical knowledge with a minimum of five (5) years demonstrated experience is to certify that the planting within the basins including bank areas (excluding the bio-retention area), the creek restoration and restoration is of the same quality in type and quantity as per the construction certificate approved landscape plans and Vegetation Management Plan, that any plants lost have been replaced and that any areas of scour or disrepair have been restored.

Rita Sirianni

From: Andrew Lau
Sent: Thursday, 2 June 2016 8:19 AM
To: Tim Ireson
Cc: Luke Wilson; Michael Dunbavan; Colee Quayle; Sahani Gunatunge; Andrew Lau
Subject: Re: Development Management Agreement Terminology: Remediation (ECRC)

Tim

I've read the consent conditions. The interim advice approach might be fine for the staged validation process (with a final SAS/SAR issued) at the end, so long as you don't require the subdivision as part of the earlier handover of the stages, since only a SAS/SAR will satisfy the condition in order to obtain the subdivision.

The main problem I see is if the 3m depth won't be achieved until completion of the bulk earthworks and the soils less than 3m from the final finish level contain asbestos at concentrations exceeding the criteria. If this is he case, then the interim advice prior to handover for bulk earthworks won't be able to state that you've met the requirements of the RAP. The same problem exists if you attempt to issue a SAS/SAR before the 3m cover is achieved.

I suggest that if the subdivision isn't an issue and you're wording up your agreements around interim advices, that you call for the interim advice(s) to confirm "that the requirements of the RAP that are able to be achieved prior to bulk earthworks have been completed in accordance with the RAP and previous section b SAS/SAR".

Hope this helps.

Andrew

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

On 1 Jun 2016, at 17:58, Tim Ireson <TIreson@hansenyuncken.com.au> wrote:

> Hi Andrew,
>
> If you could confirm that the likely interim result will be “Interim Audit Advice” following review of the conditions it would be appreciated.
>
> Mike – regarding your comments below – given we have no timing restraints on the delivery of Pad 3 & 4 (1 & 2 are the focus) – I’d assume that by obtaining Interim Audit Advice (allowing Bulk Earthworks to proceed in that particular area) we should be better off time/cost wise – while we complete the asbestos containment cell to the north of the site – whilst not imposing on the southern portion of the development where the action will be taking place.
>
> Regards,
>
> **Tim Ireson**
> Hansen Yuncken Pty Ltd
> 0437 945 499

From: Luke Wilson
Sent: Wednesday, 1 June 2016 10:57 AM
To: Tim Ireson; Michael Dunbavan
Cc: Andrew Lau; Colee Quayle; Sahani Gunatunge
Subject: RE: Development Management Agreement Terminology: Remediation (ECRC)

Andrew,

Please find attached as requested.

Regards,

Luke Wilson
Assistant Development Manager

Hansen Yuncken Pty Ltd
M 0400 506 926 **T** 02 9770 7600

From: Tim Ireson
Sent: Wednesday, 1 June 2016 10:48 AM
To: Michael Dunbavan <Michael.Dunbavan@coffey.com>
Cc: Andrew Lau <ALau@jbsg.com.au>; Colee Quayle <Colee.Quayle@coffey.com>; Luke Wilson <LWilson@hansenyuncken.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: Re: Development Management Agreement Terminology: Remediation (ECRC)

Hi Luke,

Can you please send Andrew the initial and s96 approval consent?

Andrew - on initial review there does not seem to be any "prior to commencement" conditions - rather during construction.

Tim Ireson
0437 945 499

On 1 Jun 2016, at 10:39 AM, Michael Dunbavan <Michael.Dunbavan@coffey.com> wrote:

> Tim and Andrew – given the planning approval process for developing Pads 1 &2, I suggest that a Site Audit Statement would carry more weight than an Interim Audit Advice. Although there would be slightly higher overall site audit costs, a benefit of having Pads 1 & 2 “fully” signed off means that there would be no related timing constraints for completing Pads 3 & 4, and no condition requiring completion of the SAS for the entire area before issue of an Occupation Certificate for developments on Pads 1 or 2..
>
> Just a thought.
>
> Regards
>
> Dr Michael Dunbavan CP SAM
> Senior Principal Consultant
> Environments Leader, Sydney
>
> Chatswood NSW
>
> t: +61 2 9406 1206
> m: +61 419 395 971
> w: coffey.com

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Wednesday, 1 June 2016 10:26 AM
To: Tim Ireson
Cc: Michael Dunbavan; Colee Quayle; Luke Wilson; Andrew Lau; Sahani Gunatunge
Subject: Re: Development Management Agreement Terminology: Remediation (ECRC)

Hi Tim

The terminology for the agreement would be 'Interim Audit Advice'.

If you haven't already done so, I'd also suggest that you ensure the project approval requirements for the site audit align with any commercial agreement you enter into.

Happy to assist in in this regard if you can send over the conditions of consent and any subsequent modifications (I think I noticed one in today's paper?).

Regards
Andrew

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

On 1 Jun 2016, at 08:21, Tim Ireson <TIreson@hansenyuncken.com.au> wrote:

> Hi Andrew,
>
> We are drafting up the Development Management Agreement (DMA) for Eastern Creek Retail Centre and seek clarification for the below terminology to be used.
>
> As per the attached Earthworks Plan – we anticipate handing over the pads in a staged manner during the remediation works in the following order:
>
> - **Stage 1**: PAD 2
> - **Stage 2**: PAD 1
> - **Stage 3**: PAD 3 & PAD 4
>
> We anticipate that prior to the final Site Audit Report / Site Audit Statement issued for the site – we can get an interim sign off on the above Pads (mainly PAD 2 & PAD 1) to allow the developer to commence Bulk Earthworks immediately following the remediation.
>
> Can you please let me know the document title / terminology of the interim sign off that we will be aiming for above so we can insert it into our agreement drafting?
>
> We don't anticipate the overall remediation works to take that long – however by clearing certain stages of the site earlier will provide comfort to the developer.

Thanks and we look forward to hearing from you.

Regards,

Tim Ireson
Development Manager

Hansen Yuncken Pty Ltd
Sydney Corporate Park
Building 1, L3, 75-85 O'Riordan Street
Alexandria NSW 2015
PO Box 7002 Alexandria NSW 2015
T 02 9770 7600 **F** 02 9770 7601 **M** 0437 945 499
tireson@hansenyuncken.com.au
www.hansenyuncken.com.au

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<Earthworks Plan.pdf>

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Rita Sirianni

From: Luke Wilson <LWilson@hansenyuncken.com.au>
Sent: Wednesday, 6 July 2016 4:03 PM
To: Andrew Lau
Cc: Tim Ireson; George Henien
Subject: RE: Eastern Creek Retail Centre (ECRC) – Request for Fee Proposal (RFP): Accredited Auditor Services
Attachments: Modified Development Consent.pdf; 160706_ECRC_RFP_JBS&G.pdf

Hi Andrew,

As discussed, Western Sydney Parklands Trust (Trust) intends to commence the remediation works for the Eastern Creek Retail Centre project. The Trust invites you to provide a fee for the Site Auditor Services to achieve the site audit statement at completion of the remediation works for the site. Please see attached RFP letter.

The remediation works are to be performed in one stage across the entire site, a containment cell will be used and appropriately capped. On completion we intend for the SAS to be signed off by the auditor – this will be prior commencement of any bulk earthworks at the site (by others).

Please also note that there will be a 1500m2 childcare located at lot 2 which will require assessing as per the relevant guidelines. This will be pegged out by the contractor.

For your reference, a full outline of the development and relevant planning policy frameworks can be found on the Major Projects (DP&E) website as follows;
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5175

Please provide a fee no later than Thursday, 14th July 2016. If you have any questions or require any further information, please do not hesitate to contact me.

Regards,

Luke Wilson
Assistant Development Manager

hansen yuncken

Hansen Yuncken Pty Ltd
Sydney Corporate Park
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Modification of Development Consent

Section 96(2) of the *Environmental Planning & Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 16 February 2015, I determine the modification of the State Significant Development consent referred to in Schedule 1, subject to the conditions in Schedule 2.

Ben Lusher
Director
Key Sites Assessments

Sydney 28 APRIL 2016

SCHEDULE 1

Application No.:	SSD 5175 MOD 1
Applicant:	Western Sydney Parklands Trust
Consent Authority	Minister for Planning
Land:	Eastern Park Business Hub, Rooty Hill (Western Sydney Parklands)
Project:	Eastern Creek Business Hub Staged Development Application, including: • A concept proposal for a new retail centre comprising 52,800 sqm gross floor area to accommodate 'retail premises', 'bulky goods premises' and 'business premises' uses and a development structure including land uses; site layout; building envelopes; and design parameters. • Stage 1 subdivision and early works including super lot subdivision to create three developable allotments and one residual allotment; construction of an access road; bulk and detailed earthworks; stormwater management; civil engineering works; landscaping; and rehabilitation of the existing woodland areas identified for open space/conservation.
Modification:	Modifications to: • transfer the Beggs Road easement into Phase 1B and Phase 2 of the business hub land; • maintain and incorporate the proposed pedestrian link to Church Street into Phase 2 of the development; • reconfigure the stormwater drainage system including provision of a second on-site detention basin; • undertake additional bulk earthworks to include remediation, establishing pad sites 1, 2, 3 and 4 and accommodate the amended stormwater drainage system; • allow any residual large format retail gross floor area (GFA) up to the approved maximum to be used as bulky goods GFA, and a maximum of 500m^2 of residual supermarket GFA to be used as specialty shops/small business GFA; and • amend the timing of the Deed of Agreement with RMS.

SCHEDULE 2

CONDITIONS

The above approval is modified as follows:

*(a) The following conditions are included or amended by the insertion of the **bold and underlined** words /numbers and deletion of the ~~struck out~~ words / numbers as follows:*

SCHEDULE 2 – TERMS OF APPROVAL FOR CONCEPT PROPOSAL

Development Description

A1 Consent is granted to the 'concept proposal' as described in Schedule 1 and the Environmental Impact Statement, as amended by the Response to Submissions**, associated documents submitted with Modification 1,** and the conditions contained in this development consent.

Development in Accordance with Plans and Documents

A4 The applicant shall carry out the development generally in accordance with the:

a) *Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement* prepared by Architectus dated September 2012, as amended by the

b) *Eastern Creek Business Hub State Significant Development SSD 5175 Response to Submissions* prepared by Architectus dated April 2014; and

c) *Eastern Creek Business Hub Design Guidelines* prepared by Architectus dated 12 February 2014; and

d) ***S.96(2) SSD Modification 5175 Eastern Creek Business Hub*** **prepared by JBA Urban Planning Consultants Pty Ltd dated August 2015; and**

e) ***State Significant Development (SSD 5175) MOD 1 Rooty Hill Road South, Eastern Creek Response to Submissions*** **prepared by JBA Urban Planning Consultants Pty Ltd dated January 2016; and**

f) following drawings, except for:

i) any modifications which are 'Exempt' or 'Complying Development'; and

ii) otherwise provided by the conditions of this consent.

Concept Proposal			
Concept Plans ~~prepared by Architectus~~			
Drawing No.	**Revision**	**Name of Plan**	**Date**
~~EIS-01 (G)~~	**A**	Structure Plan	~~24 July 2013~~ **19 August 2015**
	D	**Stage 1 Early Works – Phasing Plan**	**19 August 2015**
~~EIS-05 (H)~~	**C**	Preferred Indicative Plan	~~24 July 2013~~ **19 August 2015**
~~EIS-03 (G)~~	**B**	Enabling Infrastructure Works	~~24 July 2013~~ **19 August 2015**
Landscape Plans prepared by Urbis			
LA01	06	Illustrative Landscape Masterplan	27 August 2012

Maximum Gross Floor Area (GFA)

A7 The maximum GFA for the total development shall not exceed 52,800 sqm and the individual land use components shall have a maximum GFA as follows:

Land Use	**Maximum GFA (sqm)**	
bulky goods	**29,300**	**Any residual large format retail GFA may be transferable to bulky goods GFA provided the combined maximum GFA for bulky goods and large format retail does not exceed 43,300m^2.**
large format retail	**14,000**	

convenience retail - supermarket - specialty shops/small business	**9,500** (4,000) (5,500)	**A maximum of 500m^2 of residual supermarket GFA may be transferable to specialty shops/small business GFA provided the maximum GFA for convenience retail does not exceed 9,500m^2.**
TOTAL	**52,800**	

Ownership

A9 Western Sydney Parklands Trust (WSPT) is to retain ownership of the basins and the internal roads.

Stormwater

B12 Future development applications for the construction of buildings shall include a stormwater management plan in accordance with the *Water Cycle Management Strategy Report Incorporating Water Sensitive Urban Design Techniques* prepared by J. Wyndham Prince dated March 2013 **and as amended by Civil Engineering Report: Amendment to State Significant Development 5175-2012 prepared by Costin Roe dated 4 August 2015 and Response Letter dated 23 December 2015** and council's *Engineering Guide for Development 2005*.

SCHEDULE 3 - CONDITIONS OF CONSENT FOR STAGE 1 SUBDIVISION AND EARLY WORKS

Development in Accordance with Plans and Documents

A2 The applicant shall carry out the 'Stage 1 subdivision and early works' generally in accordance with the:

a) *Eastern Creek Business Hub State Significant Development SSD 5175 Environmental Impact Statement* prepared by Architectus dated September 2012, as amended by the

b) *Eastern Creek Business Hub State Significant Development SSD 5175 Response to Submissions* prepared by Architectus dated April 2014; and

c) *Eastern Creek Business Hub Design Guidelines* prepared by Architectus dated 12 February 2014; and

d) ***S.96(2) SSD Modification 5175 Eastern Creek Business Hub*** **prepared by JBA Urban Planning Consultants Pty Ltd dated August 2015; and**

e) ***State Significant Development (SSD 5175) MOD 1 Rooty Hill Road South, Eastern Creek Response to Submissions*** **prepared by JBA Urban Planning Consultants Pty Ltd dated January 2016; and**

f) following drawings, except for:

i) any modifications which are 'Exempt' or 'Complying Development'; and

ii) otherwise provided by the conditions of this consent.

Stage 1 Subdivision			
Subdivision drawing prepared by Land partners			
Drawing No.	**Revision**	**Name of Plan**	**Date**
S073106	AMD 7b	Proposed Subdivision of Eastern Creek Business Hub Rooty Hill Road South, Eastern Creek	24 May 2013
Early works drawings ~~prepared by Architectus~~			
EIS-04(H)	**D**	Stage 1 Early Works Phasing Plan	~~24 July 2013~~ **19 August 2015**
	B	**Enabling Infrastructure Works**	**19 August 2015**
Civil Works Plan prepared by Costin Roe Consulting			
C012693.00-DA10	**B**	**Drawing List & General Notes**	**21 July 2015**
C012693.00-DA15	**B**	**Overall Site Plan**	**21 July 2015**
C012693.00-DA20	**B**	**Erosion & Sediment Control Plan**	**21 July 2015**

C012693.00-DA25	**B**	**Erosion & Sediment Control Details**	**21 July 2015**
C012693.00-DA30	**B**	**Bulk Earthworks Plan**	**21 July 2015**
C012693.00-DA31	**A**	**Retaining Wall Plan**	**4 August 2015**
C012693.00-DA32	**A**	**Retaining Wall Details**	**4 August 2015**
C012693.00-DA35	**C**	**Bulk Earthworks Sections Sheet 1**	**4 August 2015**
C012693.00-DA40	**C**	**Stormwater Drainage Plan**	**4 August 2015**
C012693.00-DA41	**B**	**Stormwater Catchment Plan**	**21 July 2015**
C012693.00-DA42	**B**	**Stormwater Drainage Longsections – Sheet 1**	**21 July 2015**
C012693.00-DA45	**B**	**Stormwater Drainage Details – Sheet 1**	**21 July 2015**
C012693.00-DA46	**B**	**Stormwater Drainage Details – Sheet 2**	**21 July 2015**
C012693.00-DA50	**B**	**Road 1 Finished Levels Plan**	**21 July 2015**
C012693.00-DA51	**B**	**Toad 1 Longitudinal Section**	**21 july 2015**
C012693.00-DA55	**B**	**Road Typical Cross Sections**	**21 July 2015**
Road Improvement Works Sketch prepared by J. Wyndham Prince			
8801/SK04	H	Proposed Works Sketch	22 May 2013
Landscape Plans prepared by Urbis			
LA06	00	Phase 1 – Recommended Plant Species	27 August 2012
LA07	00	Phase 1 – Landscape furniture Palette	24 August 2012
LA08	02	Phase 1 – Street Tree Planting Works	10 September 2012
LA09	02	Phase 1 – Street Tree Planting Works	10 September 2012
LA10	00	Phase 1 – Street Tree Planting Works	30 August 2012

European Archaeological Heritage

A9 The key recommendations of the Archaeological Assessment Management Plan prepared by Biosis shall be implemented during all stages of the development

Biodiversity Offset Strategy

B2 The applicant shall retire 46.3 ecosystem credits of Grey Box-Forest Red Gum woodland at the Chandos Street West Biobank Site (Biobank Site 70) in accordance with the offset strategy in the ecological assessment prepared by Ecological Australia dated August 2012 to offset the loss of 1.93 hectares of Cumberland Plain Woodland (sub community) on the subject site **prior to any clearing**.

~~**Road Infrastructure Works**~~

~~B9 The applicant shall provide written evidence to the Certifying Authority that it has entered into a Deed agreement with Roads and Maritime Services in accordance with the details outlined in the correspondence from Roads and Maritime Services dated 6 June 2014, and the Proposed Works Sketch prepared by J Wyndham Prince No. 8801/SK04 issue H dated 22 May 2013.~~

Vegetation Management Plan (VMP)

B10 Prior to the commencement of works, a Vegetation Management Plan (VMP) shall be provided to the Certifying Authority addressing the restoration and rehabilitation of the conservation area ~~in the~~ **including:**

- **the** eastern part of the site**;**
- **the existing creek channel from channel 01 to basin 1 including endemic riparian native plants;**

- **outside the development area including endemic native plants and additional Cumberland Plains Woodland; and**
- ~~and~~ the retained woodland in the developable areas of the site.

The VMP shall be in accordance with the criteria identified in the *Vegetation Management Plan Guidelines*, prepared by the *Department of Water and Energy, (February 2008)*. The VMP is to be prepared by a suitably qualified person and should address but not be limited to, the following:

a) provide details of vegetation to be retained and measures to protect vegetation during the construction and operation phases of the development;
b) identify areas to be rehabilitated and details of the vegetation species, composition, planting,
c) layout and densities of plants to re-vegetate these areas;
d) outline ongoing management arrangements, including but not limited to responsibilities, funding and long term maintenance; and
e) provide details monitoring and timing of revegetation works within the retained vegetation and the areas to be revegetated.

The plan is to span the entire project duration from pre-construction to through to construction and post construction.

~~**Historical Archaeological Management Plan**~~

~~B23 Prior to the commencement of any works a Historical Archaeological Management Plan prepared by a suitably qualified person shall be submitted to the Certifying Authority. The plan shall address the monitoring and management of potential remains of the school and the Begg family homes including Bee Hive Wells in the vicinity of The Great Western Highway.~~

Historical Interpretation Strategy

B24 The applicant shall consult with the Mount Druitt Historical Society and Council and prepare an interpretation strategy for the former Eastern Creek School and other relevant areas of the site based upon the outcome of the historical monitoring program. Should an interpretation strategy be deemed not necessary by both the Mount Druitt Historical Society and Council, documentary evidence shall be submitted to the Council's satisfaction.

Engineering

B25 Once a minimum of 90% of all the upstream building works, retaining walls and driveways have been completed as agreed with Council for each bioretention basin, the filter media and plants are to be installed within 6 months. Once these are installed:

a) A Geotechnical Engineer is to undertake in-situ Saturated Hydraulic Conductivity Testing of each of the bio-retention systems in accordance with Practice Note 1 of the FAWB guidelines. For bio-retention systems with a filter area less than 50 m^2, *in situ* hydraulic conductivity testing should be conducted at three points. For systems with a filter area greater than 50 m^2, an extra test point should be added for every additional 100 m^2 or part thereof. Points are to be spatially distributed. Where the hydraulic conductivity of the soil differs from the rate specified in MUSIC of by 100 mm/hr (tolerance -0% to +400%), remediation works will be required over the filter area to restore the conductivity and the test repeated until the hydraulic conductivity is achieved. A Geotechnical Engineer is to then certify that in accordance with Practice Note 1 of the FAWB guidelines, the Saturated Hydraulic Conductivity is within tolerance to the rate specified in MUSIC for each of the bio-retention systems; and

b) After the hydraulic conductivity has been certified by the Geotechnical Engineer, a horticulturalist that has relevant tertiary qualifications and technical knowledge with a minimum of 5 years demonstrated experience is to certify that the planting within the bio-retention area including bank areas, is of the same quality in type and quantity as per the construction certificate approved landscape plans, that any plants lost have been replaced and that any areas of scour or disrepair have been restored.

Water Quality

B26 The development must at all times maintain the water quality system to achieve the following minimum pollutant removal targets for the entire site in perpetuity including the approved bioretention plant species:

Required percentage reductions in post development average annual load of pollutants

Pollutant	% post development pollutant reduction targets
Gross Pollutants	90
Total Suspended Solids	85

Total Phosphorous	**65**
Total Nitrogen	**45**
Total Hydrocarbons	**90**

Stormwater Drainage

B27 Amended drainage plans by a suitably qualified Civil Engineer, are to be provided to meet the requirements under Councils DCP Part R 2006 and Councils Engineering Guide for Development 2005. The amended plans must address the following:

- **a) Provide additional detailed sections through each of the channels clearly identifying batter slopes and finishes.**
- **b) Redesign the culvert crossing of channel 01 to Pad 1 to assume a 50% blockage in the culvert. Where no blockage was previously assumed it is acceptable to double the culvert size to compensate. Details are to be provided.**
- **c) The channelization of the 100 year flows through Channel 01 to the existing creek will lead to increased scour and deterioration of the existing creek as previous high flows would have spread over a much wider area. A review of the geomorphology of the existing creek to cope with the increased flow is to be undertaken with recommended improvements detailed such as ponds and riffles, bank armouring of bends, scour protection, etc. as required.**
- **d) The rainwater tanks are required to all the developments and are to be designed to achieve a minimum 80% of non-potable demand to be met through rainwater. When sizing the rainwater tank increase the calculated volume by 20 % to account for anaerobic zones, mains water top up levels and overflow levels.**
- **e) To protect the bioretention systems from harmful sediments and pollutants a Gross Pollutant Trap (GPT) is required for any discharge from future developments in Pads 2, 3, or 4 to the external drainage system, including discharges direct to basin 2. The GPTs are to remove a minimum 50% TSS and have an oil baffle able to trap and contain oil or hydrocarbons and sized to treat a minimum six month ARI flow.**
- **f) To provide a water source to ensure ongoing viability of the bioretention plants a saturated zone is required comprising a 300 mm transition layer and a gravel layer sized as the larger of 200 mm, or 50 mm above the largest subsoil pipe. The saturated zone is set to the underside of the filter media and standard pit details are available from Council. On Costin Roe Plan CD12693.00-DA45(C) under "TYPICAL BIO-RETENTION DETAIL" amend the detail to match this requirement.**
- **g) The un-socked subsoil drains within the saturated bioretention filter bed can be laid flat, however any non-slotted collection pipes discharging the subsoil flows away from the basin are to have a minimum grade of 0.5 %. Where subsoil lines connect with a larger subsoil collection pipe, the subsoil pipes are to connect via two 45 degree bends with a minimum 300 mm straight section between to allow for rodding. The collection pipe is to have its own rodding point. Provide details of sizing to ensure a minimum of twice the capacity based on both pipe capacity and flow through the slots.**
- **h) On Costin Roe Plan CD12693.00-DA45(C) under "TEMPORARY BIO-RETENTION PROTECTION DETAIL" set the geotextile immediately above the transition layer (i.e. no filter media at all) with "COARSE SAND & TURF, NOM 100 - 150" above plus previous amendments as above. The bioretention notes are to be adjusted to match;**
- **i) Provide a detail of a subsoil riser for flushing and maintenance of the subsoil collection pipe. The riser is to include two 45^0 bends with a short section of un-slotted straight (minimum 300 mm) in between. The vertical riser is to stop 50 mm above the filter media and sealed with a removable screw cap.**
- **j) Provide an intermediate riser detail for long subsoil lines, or subsoil collection pipes at maximum 20 m intervals.**
- **k) Provide a separate pit for the collection of flows from the bioretention subsoil drainage from Basin 2 that is independent of the overflow pit or discharge control pit for on-site detention. The top of the pit is to be either sealed or set a minimum of 100 mm above the top of the 1 in 100 year detention storage. The subsoil drainage is to discharge downstream of the discharge control pit. Provide a separate subsoil collection pit for bio basin 1.**
- **l) Provide minimum 3.5 m maintenance access tracks into bio basin 1, basin 1 and Basin 2. Tracks greater than 5% must be concreted, but must not exceed 10%. A minimum 3 m wide access track must be provided at the base of the embankment for the basin 2 bioretention system to allow for future bioretention maintenance set to 100 mm above the extended detention depth. Provide a general vehicular maintenance access plan.**

m) The existing outlet control for basin 2 is incorrect. Electronic hydrologic models are to be provided for the detention basin design to ensure that the predevelopment flows do not exceed the post development flows for all storm durations and for all ARIs from 1 year to 100 year. Allow for an initial pervious loss of 15 mm for the pre development case and the post development losses (5 mm) as per the Engineering Guide for Development. RAFTS itself or the RAFTS hydrological model in DRAINS is preferred to allow for the 15 mm initial loss. There are currently no modelled pre development nodes for this catchment to compare to. Review storages which is not to be less than 5600 m^3 that excludes the bioretention extended storage.

n) Both detention basins are to install a concrete cutoff wall under the full extent of the spillways to minimise risk of seepage flows and failure.

o) Provide a stilling basin at the base of the downstream spillway of both detention basins.

B28 Maintenance schedule requirements are to be provided for each of the Stormwater Quality Improvement Devices including the rainwater tank. For bioretention systems these are to include the temporary bio-retention system and ultimate bioretention system replacement. Where these devices are located in roadway/parking areas these are to include traffic management requirements. The designer of the stormwater treatment system must prepare the Maintenance schedule and this schedule must show the designer's name, signature and date on it.

B29 A certificate from a Professional Geotechnical Engineer registered with NPER must be obtained and submitted to Council verifying that the detention basin and it's embankments can withstand a 1 in 100 year ARI event and a PMF event. The modelling is to consider both independent events and local interaction with floods in the creek. Any requirements of the Geotechnical Engineer as to lining the crest and spillway or other necessary protection is to be incorporated into the design.

Landscaping

B30 Amended landscape plans are to be provided to meet the requirements under Councils DCP Part R 2006 and Handbook. The amended plans must address the following:

a) For the bioretention system include appropriate species in accordance with the BCC Handbook Part 5 - Vegetation Selection Guide (October 2012 or as revised) for the 500 mm deep filter media. Planting within the filter area should incorporate several growth forms, including shrubs and tufted plants and be densely planted (tufted plants at a minimum of 10 plants per square metre) to ensure plant roots occupy all parts of the media. Groundcover species must not be used. To ensure diversity and disease resistance a minimum of 10 different species (including one or more shrubs) is required planted as a matrix. All plants within the filter area are to be planted from tubestock or virotube and not pots.

b) Provide a turf specie for channel 01 capable of sustaining a 1V: 3H batter. Detail any geogrids or other enhanced support to sustain such a steep batter slope.

c) Replace the proposed turf channel 04 with a riparian landscaped channel with Cumberland Plain Woodland surrounds to support and enhance the local environment.

Cut and Fill

B31 All cut and fill details are to be provided to the Certifying Authority.

Retaining Walls

B32 Details of any retaining walls, including height and material, to be constructed on site as part of the development are to be submitted to the Certifying Authority. Masonry retaining walls (i.e. no timber walls) are to be provided. All retaining walls shall be in maximum 3 metres high sections and stepped with 1 metre wide minimum planting bays which are to be landscaped. Where retaining walls 1.5m or greater are provided, these should not be provided in long expanses.

Hours of Work

C1 The hours of construction, including the delivery of materials to and from the subject site, shall be restricted as follows:

a) between 7:00 am and 6:00 pm, Mondays to Fridays inclusive;
b) between 8:00 am and 1:00 pm, Saturdays;
c) no work on Sundays and public holidays; and
d) works may be undertaken outside these hours where:

i) the delivery of materials is required outside these hours by the Police or other authorities;
ii) it is required in an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm;
iii) it is for non offensive noise-generating works; and
iv) variation is approved in advance in writing by the Secretary or his/her nominee.

Any objectionable noise, dust, concussion, vibration or other emission from the development works shall not exceed the limit prescribed in the Protection of the Environment Operations Act 1997.

C1A Scheduled intra-day 'respite periods' are required for construction activities identified in the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers, including surrounding residents and schools. These activities generating noise with particularly annoying and/or intrusive characteristics should be subject to regime of intra-day respite periods where:

a) they are only undertaken after 8:00am;
b) they are only undertaken over continuous periods not exceeding 3 hours with at least a 1 hour respite every 3 hours; and
c) 'continuous' means any period during which there is less than an uninterrupted 60 minutes respite between temporarily halting and recommencing any of the work referred in Interim Construction Noise Guideline (2009).

Respite periods may be waived subject to approval by the Department. Any waiver request to the Department shall be supported by an acoustic assessment and an acoustic construction management plan demonstrating how construction acoustic impacts may be managed to minimise annoying and/or intrusive noise to nearby residents and schools.

Site Remediation

C3 The site the subject of the early works is to be remediated in accordance with the *Remediation Action Plan Phase 1 Early Works for Eastern Creek Business Hub* prepared by **Coffey** ~~Consara~~ dated ~~25 June 2013~~ **28 July 2015 and as amended from time to time with consent from an NSW Accredited Auditor.**

C5A Concrete waste and rise water are not to be disposed of on the development site.

C14 As part of the on-site demolition works and initial bulk excavation of the site, areas of high and medium archaeological potential within the project area (as identified in the Archaeological Assessment Plan prepared by BIOSIS) are to be subject to a program of monitoring. Should intact archaeological remains be identified, the excavation and recording techniques as detailed in the Archaeological Assessment Management Plan are being undertaken. It is intended to excavate the areas to a maximum depth of 1.2 metres. However, this may need to be revised in the event that deep archaeological structures or deposits are encountered. Should substantial archaeological remains be located the excavations must cease once the nature of the structural and depositional archaeological remains have been established.

Asbestos

C15 All works shall comply with the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 'asbestos wastes'. This shall include consultation with WorkCover NSW concerning the handling of asbestos.

Construction Vehicles

C16 Construction vehicles (including concrete agitator trucks) involved in construction and construction-related activities are not to arrive at the site or in surrounding residential precincts outside approved construction hours.

Dust Control

C17 During all stages of construction, measures and practices shall be in place to:

a) minimise dust emissions on site; and
b) prevent dust emissions from the site.

Drainage

C18 Prior to placement of the filter media layer, certification for the following is to be provided:

- **a. A minimum hydraulic conductivity as defined by ASTM F1815-06 of 200 mm/hr (actual, not predicted**
- **b. A maximum hydraulic conductivity as defined by ASTM F1815-06 of 700 mm/hr (actual, not predicted)**
- **c. An Orthophosphate content < 20 mg/kg**
- **d. A Total Nitrogen content < 1000 mg/kg**
- **e. Is not hydrophobic.**

C19 The 200 micron Enviropods supplied by Stormwater 360 as detailed on the approved drainage plan are not to be reduced in size or quantity, nor replaced with an alternate manufacturer's product.

Drainage

D11 A positive covenant is to be provided over each lot for future development to achieve a minimum of 80% of the non-potable water uses on-site using rainwater or stormwater.

D12 A positive covenant is to be provided over each lot for future development to provide a Gross Pollutant Trap (GPT) prior to any discharge from future developments in Pads 2, 3, or 4. The GPTs are to remove a minimum 50% TSS and have an oil baffle able to trap and contain oil or hydrocarbons and sized to treat a minimum six month ARI flow.

D13 A restriction to user and positive covenant is to be provided over the conservation areas for restoration works to be in accordance with the Vegetation Management Plan (VMP).

D14 A restriction to user and positive covenant is to be provided over the On-Site Detention System in Basins 1 and 2 in accordance with the requirements of Council's Engineering Guide for Development 2005. The restriction to user and positive covenant must be registered with Land & Property Information.

D15 A restriction to user and positive covenant is to be provided over the Stormwater Quality Improvement Devices in accordance with the requirements of Council's Engineering Guide for Development 2005. The covenant requirements are to include the submission of an annual report on water treatment by the first business day on or after 1 September each year. The Restriction to User and Positive Covenant must be registered with Land & Property Information prior to the final occupation certificate.

D16 A horticulturalist that has relevant tertiary qualifications and technical knowledge with a minimum of five (5) years demonstrated experience is to certify that the planting within the basins including bank areas (excluding the bio-retention area), the creek restoration and restoration is of the same quality in type and quantity as per the construction certificate approved landscape plans and Vegetation Management Plan, that any plants lost have been replaced and that any areas of scour or disrepair have been restored.

Road Infrastructure Works

D17 Prior to the issue of the first subdivision certificate, the applicant shall provide written evidence to the Certifying Authority that it has entered into a Deed of Agreement with Roads and Maritime Services in accordance with the details outlined in the correspondence from Roads and Maritime Services dated 6 June 2014, and the Proposed Works Sketch prepared by J Wyndham Prince No. 8801/SK04 issue H dated 22 May 2013.

Western Sydney Parklands Trust

Western Sydney Parklands

6th July 2016

Hansen Yuncken Pty Ltd
Sydney Corporate Park
Building 1, L3, 75-85 O'Riordan
Street, Alexandria NSW 2015
PO Box 7002 Alexandria NSW 2015

Andrew Lau
Managing Director
JBS&G
Level 1, 50 Margaret Street
Sydney NSW 2000

Mailto: ALau@jbsg.com.au

Dear Andrew,

Re: Eastern Creek Retail Centre (ECRC) – Request for Fee Proposal (RFP): Accredited Auditor Services

Western Sydney Parklands Trust (Trust) intends to commence the remediation works for the Eastern Creek Retail Centre project. The Trust invites you to provide a fee for the Site Auditor Services to achieve the site audit statement at completion of the remediation works for the site and prior to commencement of the bulk earthworks by others. The service is to comply with the relevant Guidelines and Authority requirements. The following documents should be carefully considered in your fee proposal;

- DP&E (2016) Modification of Development Consent
- JBS&G (2015) Site Audit Statement and Report prepared by JBS&G
- Coffey (2015) Phase 1 Early Works Remediation Action Plan prepared by Coffey
- Douglas Partners (2009) Proposed Redevelopment Parcel 2.4 Western Sydney Parklands
- CDM Smith Australia (2012) Sampling, Analytical and Quality Plan
- CDM Smith Australia (2013) Eastern Creek Business Hub Environmental Site Assessment
- Consara (2013a) Concept RAP for Eastern Creek Business Hub
- Consara (2013b) RAP Phase 1 Early Works for Eastern Creek Business Hub
- E3 Consulting Australia (2012) Advice Relating to the Contamination Status of Soil and Groundwater, Formerly Precinct 2.4 of Western Sydney Parklands
- JBS Environmental (2013) Site Audit Report for Eastern Creek Business Hub

The remediation works are to be performed in one stage across the entire site and we intend for the SAS to be signed off by the auditor prior to the commencement of the bulk earthworks by others. The Trust will engage an environmental consultant to provide a validation report to assist with meeting the requirements for a site audit statement.

Please note that there will be a 1500m2 childcare located at lot 2 which will require assessing as per the relevant guidelines. We will have the contractor peg the childcare area out to assist with this.

For your reference, a full outline of the development and relevant planning policy frameworks can be found on the Major Projects (DP&E) website as follows; [http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=5175]

Please provide a fee no later than Friday, 15th July 2016. If you have any questions or require any further information, please do not hesitate to contact me.

Yours sincerely

Luke Wilson
Assistant Development Manager
Hansen Yuncken Pty Ltd
M 0400 506 926

Rita Sirianni

From: Tim Ireson <TIreson@hansenyuncken.com.au>
Sent: Thursday, 28 July 2016 4:53 PM
To: Andrew Lau
Subject: RE: ECRC: Site Audit Statement Requirements

Hi Andrew,

We are looking at potential civil contractors for ECRC – have you worked with any recently who you think would be appropriate for this project?

Tim Ireson
Hansen Yuncken Pty Ltd
0437 945 499

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Thursday, 28 July 2016 3:13 PM
To: Tim Ireson
Cc: Sahani Gunatunge; Andrew Lau
Subject: RE: ECRC: Site Audit Statement Requirements

Hi Tim,

In response to your question:

If a playground is proposed, then yes, a different standard of remediation will be required in this area. If the playground is a typical playground that you find in a public park, then the standard will be `parks/open space/recreational use'. If the playground is part of a children's day care centre, then the standard required would be the more stringent childcare/day care standard (which happens to be the same as the standard residential use with gardens and accessible soil).

Hope this makes sense. If you have further queries, please call.

Kind regards,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
Contaminated Land | Groundwater Remediation | Auditing and Compliance | Assessments and Approvals | Occupational Hygiene and Monitoring
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From: Tim Ireson [mailto:TIreson@hansenyuncken.com.au]
Sent: Thursday, 28 July 2016 1:09 PM
To: Andrew Lau <ALau@jbsg.com.au>
Subject: ECRC: Site Audit Statement Requirements

Hi Andrew,

A comment has been raised in regards to Eastern Creek Retail Centre Agreement Negotiations.

If the developer proposes a playground (landscaped area) within their retail centre (which we are currently signing off as “Industrial/Commercial”) – will a different standard of remediation be required in this area? We won’t be proposing to do it however we should let the developer know.

Thanks mate

Tim Ireson
Development Manager

Hansen Yuncken Pty Ltd
Sydney Corporate Park
Building 1, L3, 75-85 O’Riordan Street
Alexandria NSW 2015
PO Box 7002 Alexandria NSW 2015
T 02 9770 7600 **F** 02 9770 7601 **M** 0437 945 499
tireson@hansenyuncken.com.au
www.hansenyuncken.com.au

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Rita Sirianni

From: Sahani Gunatunge
Sent: Thursday, 19 January 2017 3:08 PM
To: Luke Wilson
Cc: tim.ireson@wspt.nsw.gov.au; Andrew Lau
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Hi Luke,

Thank you for your email confirming Andrew Lau's engagement as site auditor for Eastern Creek Retail Centre. I will be assisting Andrew with this audit and we look forward to working with you. Two hard copies of the signed professional services agreement have been returned to you via express post.

Timing of works as indicated in your email below is noted. Please provide the AMP/CEMP for auditor review prior to commencement of remediation works by EPS.

If you have any queries, please do not hesitate to contact me.

Kind Regards,

Sahani Gunatunge | Environmental Engineer / Auditor Assistant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0410 240 607 | www.jbsg.com.au
Contaminated Land | Groundwater Remediation | Environmental Impact Assessment | Auditing and Compliance | Hygiene and Hazardous Materials | Due Diligence and Liability

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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Wednesday, 18 January 2017 5:06 PM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>; tim.ireson@wspt.nsw.gov.au
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Andrew,

Thank you for your fee proposal dated 21st October 2015. I left a VM with your operator, we inform you that the review of your fee proposal has been completed and JBS&G was successful in their submission.

Please find attached professional service agreement for you to sign and return 2 x original copies.

I will be in touch with you to arrange timing of the works, generally;

- EPS have provided the management plans for the works – I will send you the AMP/CEMP shortly
- Site will be setup by EPS early next week to commence works
- EPS have proposed a 7 week duration for the works (Validation reports expected early March)

Should you have any questions please feel free to contact me or Tim Ireson.

We look forward to working with you on this project.

Sincerely,

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark





Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Thursday, 19 January 2017 4:53 PM
To: Sahani Gunatunge
Cc: Andrew Lau; Adam Gillis
Subject: RE: AMP for ECRC Remediation Works
Attachments: YO7030 - WP03 - Asbestos Removal Control Plan (ARCP).pdf; Remediation Plans (For information).zip

Sahani,

Please find attached AMP by EPS for your approval. I have also attached remediation plans for your information.

We look forward to hearing back from you.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark





Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Monday, 23 January 2017 10:11 AM
To: Sahani Gunatunge
Cc: Andrew Lau
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre
Attachments: A00 Site Plan.pdf; Appendix B.pdf

Sahani,

Here are some additional documents to assist with your site auditor services for the Eastern Creek remediation project.

- RAP addendum letter by Coffey
- Final Site Layout plan by Coffey

All of the original documents can be found on the major projects website;
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7240

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Luke Wilson
Sent: Friday, 20 January 2017 8:37 AM
To: 'Sahani Gunatunge' <SGunatunge@jbsg.com.au>
Cc: Andrew Lau <ALau@jbsg.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Sahani,

That's great news regarding timing. EPS have confirmed that they will address any comments on the Tuesday.

Also please let me know at what stage in the works JBS&G would be interested performing the site inspection(s).

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Sahani Gunatunge [mailto:SGunatunge@jbsg.com.au]
Sent: Thursday, 19 January 2017 5:22 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Andrew Lau <ALau@jbsg.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Hi Luke,

Following documents received:

- QHSE Plan
- WP1-Site establishment and preliminaries
- WP2-Remediation Excavation

- WP3-Asbestos removal control plan

I have discussed timing with Andrew, and he is able to review and provide comments by Monday (23rd). Provided these comments are addressed by COB Tuesday (24th), Andrew will be able to review finalised documents on Wednesday (25th) in order to meet the timing requirements indicated in your email below.

Regards,

Sahani Gunatunge | Environmental Consultant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0410 240 607 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Thursday, 19 January 2017 5:01 PM
To: Sahani Gunatunge <SGunatunge@jbsg.com.au>
Cc: Andrew Lau <ALau@jbsg.com.au>; tim.ireson@wspt.nsw.gov.au
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Thanks Sahani,

Just sent you a separate email with the reports attached. Please let me know immediately if anything is missing or if the files are not working.

As mentioned previously EPS are setting up site on Monday and anticipate commencing remediation late next week under a contractual arrangement. I know this is short notice but can you please prioritise review of the AMP with confirmation by Wednesday next week? I'll give you a call tomorrow morning to discuss.

We look forward to working with you and Andrew.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Sahani Gunatunge [mailto:SGunatunge@jbsg.com.au]
Sent: Thursday, 19 January 2017 3:08 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Tim Ireson <tim.ireson@wspt.nsw.gov.au>; Andrew Lau <ALau@jbsg.com.au>
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Hi Luke,

Thank you for your email confirming Andrew Lau's engagement as site auditor for Eastern Creek Retail Centre. I will be assisting Andrew with this audit and we look forward to working with you. Two hard copies of the signed professional services agreement have been returned to you via express post.

Timing of works as indicated in your email below is noted. Please provide the AMP/CEMP for auditor review prior to commencement of remediation works by EPS.

If you have any queries, please do not hesitate to contact me.

Kind Regards,

Sahani Gunatunge | Environmental Engineer / Auditor Assistant | JBS&G
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Level 1, 50 Margaret Street Sydney NSW 2000
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Wednesday, 18 January 2017 5:06 PM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>; tim.ireson@wspt.nsw.gov.au
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Andrew,

Thank you for your fee proposal dated 21st October 2015. I left a VM with your operator, we inform you that the review of your fee proposal has been completed and JBS&G was successful in their submission.

Please find attached professional service agreement for you to sign and return 2 x original copies.

I will be in touch with you to arrange timing of the works, generally;

- EPS have provided the management plans for the works – I will send you the AMP/CEMP shortly
- Site will be setup by EPS early next week to commence works
- EPS have proposed a 7 week duration for the works (Validation reports expected early March)

Should you have any questions please feel free to contact me or Tim Ireson.

We look forward to working with you on this project.

Sincerely,

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
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Twitter: @parrapark | @westernsydpark




SYMPHONY
UNDER THE STARS
THE CRESCENT, PARRAMATTA PARK
FREE
28 JANUARY
AT 8PM
SYDNEY FESTIVAL
sydney symphony orchestra
PARRAMATTA PARK
THE CRESCENT LIVE

Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Tuesday, 24 January 2017 10:16 AM
To: Andrew Lau
Cc: Sahani Gunatunge
Subject: RE: ECRC - audit comments on RAP addendum (i.e., Final RAP)

Thanks Andrew,

I just spoke with Adam (Senior Project Manager from EPS), he is going to give you a brief call regarding AMP.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Tuesday, 24 January 2017 9:51 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>; Andrew Lau <ALau@jbsg.com.au>
Subject: ECRC - audit comments on RAP addendum (i.e., Final RAP)

Hi Luke,

I have reviewed the RAP addendum and do not have any comments. Am satisfied with what is proposed.

Regards,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Monday, 23 January 2017 10:11 AM
To: Sahani Gunatunge <SGunatunge@jbsg.com.au>
Cc: Andrew Lau <ALau@jbsg.com.au>
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Sahani,

Here are some additional documents to assist with your site auditor services for the Eastern Creek remediation project.

- RAP addendum letter by Coffey
- Final Site Layout plan by Coffey

All of the original documents can be found on the major projects website;
http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7240

Regards

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Western Sydney Parklands Trusts
Mob: 0400 506 926

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Sahani,

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Also please let me know at what stage in the works JBS&G would be interested performing the site inspection(s).

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Western Sydney Parklands Trusts
Mob: 0400 506 926

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- WP3-Asbestos removal control plan

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We look forward to working with you and Andrew.

Regards

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Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Sahani Gunatunge [mailto:SGunatunge@jbsg.com.au]
Sent: Thursday, 19 January 2017 3:08 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Tim Ireson <tim.ireson@wspt.nsw.gov.au>; Andrew Lau <ALau@jbsg.com.au>
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Hi Luke,

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If you have any queries, please do not hesitate to contact me.

Kind Regards,

Sahani Gunatunge | Environmental Engineer / Auditor Assistant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Wednesday, 18 January 2017 5:06 PM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>; tim.ireson@wspt.nsw.gov.au
Subject: RE: Site Audit Statement Fee Proposal - Eastern Creek Retail Centre

Andrew,

Thank you for your fee proposal dated 21st October 2015. I left a VM with your operator, we inform you that the review of your fee proposal has been completed and JBS&G was successful in their submission.

Please find attached professional service agreement for you to sign and return 2 x original copies.

I will be in touch with you to arrange timing of the works, generally;

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Should you have any questions please feel free to contact me or Tim Ireson.

We look forward to working with you on this project.

Sincerely,

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark





Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Wednesday, 25 January 2017 1:32 PM
To: Andrew Lau; Sahani Gunatunge
Subject: RE: Updated QHSE plan and AMP - ECBH

Andrew,

Thanks for the quick turnaround on this.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

-----Original Message-----
From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Wednesday, 25 January 2017 1:31 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Cc: Andrew Lau <ALau@jbsg.com.au>
Subject: RE: Updated QHSE plan and AMP - ECBH

Hi Luke,

I have reviewed the revised documents. I am satisfied with the changes made to address my previous comments and I have no further comments. Please issue as final and provide for my records.

Regards,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au Contaminated Land | Groundwater Remediation | Environmental Impact Assessment | Auditing and Compliance | Hygiene and Hazardous Materials | Due Diligence and Liability This email message is intended only for the addressee(s) and contains information that may be confidential and/or copyright. If you are not the intended recipient please delete this email immediately. Use, disclosure or reproduction of this email by anyone other than the intended recipient(s) is strictly prohibited. No representation is made that this email or any attachments are free of viruses and the recipient is responsible for undertaking appropriate virus scanning. Any advice provided in or attached to this email is subject to limitations.

-----Original Message-----
From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Wednesday, 25 January 2017 11:47 AM
To: Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: FW: Updated QHSE plan and AMP - ECBH

Andrew,

Please find attached AMP taking into account your recent comments.

As discussed with Adam from EPS, the document has been amended to the correct naming convention.

The QHSE plan has also been revised and now includes the protection of the Cumberland Woodlands in section 14.2.7 (Flora and Fauna Management Plan) to address your comment about the protected species at the site.

Other comments for the QHSE plan:

'no details are provided on the procedures and controls around compaction of the ACM impacted materials' - this is included within the WP02 (Remediation Excavation) document sent previously

'The clearance process for completion of friable works is not documented in either this document or the ARCP, noting that the visual inspection is inadequate for friable clearance' - This will be included into WP02.

We look forward to your timely response. Please feel free to call if you have any queries.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark

Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Wednesday, 25 January 2017 2:04 PM
To: Andrew Lau
Cc: Sahani Gunatunge
Subject: Final QHSE plan and AMP - ECBH
Attachments: YO7030 - WP03 - AMP ARCP.pdf

Andrew,

Please find attached final AMP for your records.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

-----Original Message-----
From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Wednesday, 25 January 2017 1:52 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>
Subject: RE: Updated QHSE plan and AMP - ECBH

Hi Luke, see final attached

Regards

Adam Gillis
Senior Project Manager

M0447 611 605
Wenviropacific.com.au

-----Original Message-----
From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Wednesday, 25 January 2017 1:34 PM
To: Adam Gillis <adamg@enviropacific.com.au>
Subject: FW: Updated QHSE plan and AMP - ECBH

Adam,

The auditor has reviewed and approved your AMP.

Please issue as final for everyone's records.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
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Twitter: @parrapark | @westernsydpark

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Rita Sirianni

From: Andrew Lau
Sent: Tuesday, 7 February 2017 8:57 AM
To: Luke Wilson
Cc: Andrew Lau; Sahani Gunatunge
Subject: RE: Cartage of Asbestos Impacted Soils on site

Hi Luke,

The management and monitoring of issues related to friable asbestos on site must be advised by a WorkCover Licensed Asbestos Assessor (LAA), as per relevant WHS regulations.

I'm unable to determine from the email chain below whether the proposed measures have been proposed/agreed to by the nominated LAA in the AMP/ARCP that was provided for my review a week or two back.

On this basis, I'm unable to comment on whether the appropriate processes have been followed to develop the alternate management measures and, on this basis, am unable to confirm that they are consistent with relevant guidelines/regulations.

Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Monday, 6 February 2017 3:14 PM
To: Andrew Lau <ALau@jbsg.com.au>
Subject: FW: Cartage of Asbestos Impacted Soils on site

Hi Andrew,

The Environmental Consultant (WSP) and Contractor (ESP) have proposed to wet the loads being transported within the site instead of applying a cover to the truck. They believe this has been done before and can be safely managed.

Is this deviation from the RAP acceptable by JBS&G?

See below advice from WSP.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Monday, 6 February 2017 3:06 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>

Cc: Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; Dane Magnus <dane.magnus@enviropacific.com.au>
Subject: FW: Cartage of Asbestos Impacted Soils on site

Hi Luke, see below e-mail chain showing the correspondence with WSP PB regarding acceptable alternatives to the covering of the loads for soils containing either bonded or friable asbestos.

In summary:

- For the bonded loads we agreed that wetting the load would be adequate along with additional controls including a checking process overseen by WSP PB documenting that each load has not been overfilled and at the completion of the excavation clearance would also include checking the surface of the haulage route.

- For the friable loads use of both the water cart to initially wet the load then spraying with an additional binding layer (hydromulch). Additional controls would also include ensuring the application process does not generate dust (unlikely as the material will already be wet down), initial check of loads to ensure that there is no significant movement of the soil in transit that could expose fresh, untreated surfaces in the truck and asbestos monitoring on a point on the haul road.

Regards

Adam Gillis
Senior Project Manager

ENVIROPACIFIC SERVICES

M 0447 611 605
W enviropacific.com.au

Start Safe Stay Safe

From: McKay, Colin [mailto:colin.mckay@wspgroup.com]
Sent: Monday, 6 February 2017 1:47 PM
To: Adam Gillis <adamg@enviropacific.com.au>
Cc: Jalali, Farzad <FJalali@pb.com.au>; Dane Magnus <dane.magnus@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; Marshall, Holly <MarshallH@pbworld.com>
Subject: RE: Cartage of Asbestos Impacted Soils on site

Hi Adam,

As discussed this morning, I have not seen spraying of hydromulch in action, though I have seen the results on stockpiles and batters and it looks like it would work well as it is designed to stabilise surfaces. I assuming that you would wet the soil first, which is our primary control, and then apply the mulch as a layer over exposed surface to provide an additional binding layer.

I think the hydromulch would have similar properties to the other products I listed below and could be quite good as visually it should be easy to see that the mulch has been evenly spread over the whole surface.

A couple of additional points if you go down this route:

- You will need to ensure that the application process itself does not generate dust (eg blasting this product onto the surface). Probably not an issue if the material is applied wet to a freshly wet surface.
- You will need to make sure the drivers take it easy and perhaps institute a check of loads (at least initially) at the stockpile receiveal point to ensure that there is no significant movement of the soil in transit that could expose fresh, untreated surfaces in the truck.
- Daily monitoring of the haul route with a contingency plan if results fail.

Faz and Holly – if either of you (being Asbestos Assessors) have any further advice please email it around.

Cheers

Colin

Colin McKay
Principal Environmental Scientist

D: +61 2 8925 6724
M: +61 4 4897 7926
colin.mckay@wspgroup.com

From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Friday, 3 February 2017 11:48 AM
To: McKay, Colin <colin.mckay@wspgroup.com>
Cc: Jalali, Farzad <FJalali@pb.com.au>; Dane Magnus <dane.magnus@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>
Subject: RE: Cartage of Asbestos Impacted Soils on site

Thanks Colin, for covering of the Friable asbestos loads we have just had a talk about this with our QHSE officer.

We have come up with the idea of using a hydro-seeder to cover these loads. Would this be something WSP PB would accept.

Regards

Adam Gillis
Senior Project Manager

ENVIROPACIFIC SERVICES

M 0447 611 605
W enviropacific.com.au
Start Safe Stay Safe

From: McKay, Colin [mailto:colin.mckay@wspgroup.com]
Sent: Wednesday, 1 February 2017 10:32 AM
To: Adam Gillis <adamg@enviropacific.com.au>
Cc: Jalali, Farzad <FJalali@pb.com.au>
Subject: RE: Cartage of Asbestos Impacted Soils on site

Hi Adam,

Covering loads is best practice but as the works are all onsite I'm not aware of any particular legislative requirement to cover the loads while moving the materials around the site (Faz may have an opinion on this). From a practical point of view keeping the material wet during the short transit from the excavation to the stockpiling area should result in no greater risk as the material presumably won't be in transit long enough for the surface to dry out and release fibres. It could be argued that there are OHS risks around climbing onto trucks to apply the covers and that the covers themselves will become a potential source of contamination and risk to those having the handle them for every load.

My recommendation is that **for bonded areas**:

- we put in place a checking process that is overseen by the consultant. This would include documenting that each load has not been overfilled (eg at least 30 cm freeboard around the trucks walls) and that the surface has been wet.
- At completion of the excavation the clearance includes checking the surface of the haulage route.

The risk related to the **friable areas** is higher (obviously). As there are only two such zones I would suggest:

- you consider a method of covering the loads as well as wetting them, as per the RAP. This could be via a tarp or possibly a dust supressing polymer product sprayed onto the surface (eg Asbestoguard® or Gluon® - note I have never used these products but know there are products available).

- Implementing the same checking system for each load;
- Clearance of the site surface on completion; and
- Bringing in some of the boundary air monitoring stations to monitor the haulage route during the works.

Please let me know your thoughts.

Kind regards

Colin

Colin McKay
Principal Environmental Scientist

D: +61 2 8925 6724
M: +61 4 4897 7926
colin.mckay@wspgroup.com

From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Tuesday, 31 January 2017 1:02 PM
To: McKay, Colin <colin.mckay@wspgroup.com>
Cc: Jalali, Farzad <FJalali@pb.com.au>
Subject: FW: Cartage of Asbestos Impacted Soils on site

Hi Colin, see below as discussed.

Regards

Adam Gillis
Senior Project Manager

ENVIROPACIFIC SERVICES

M 0447 611 605
W enviropacific.com.au

Start Safe Stay Safe

From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Tuesday, 31 January 2017 12:35 PM
To: Adam Gillis <adamg@enviropacific.com.au>
Subject: RE: Cartage of Asbestos Impacted Soils on site

Hi Adam,

Before we discuss this, does your Environmental Consultant have any comment on whether this is an acceptable approach and/or if it will be compliant with EPA guidelines etc.?

I feel that Coffey would have recommended the approach of covering the load for a reason and this is what has been approved under our DA.

Let me know please.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Tuesday, 31 January 2017 12:31 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Subject: Cartage of Asbestos Impacted Soils on site

Luke, as I mentioned the other day would WSPT consider wetting of the soil in the trucks as opposed to covering.

Please note that we will have a water cart during the excavation and loading works dedicated to the excavation areas. The water cart will have a water cannon capable of wetting the soil in the trucks once loaded to prevent any dust emissions during transport to the cell. I actually did this on a similar job in Bass Hill and it worked to prevent dust emissions.

Thanks Luke, please give me a call to discuss when you get a spare minute.

Regards

Adam Gillis
Senior Project Manager

ENVIROPACIFIC SERVICES

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T 02 9882 4200
E adamg@enviropacific.com.au
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16/390 Eastern Valley Way, Roseville NSW 2069

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Rita Sirianni

From: Rose Cocks <Rose.Cocks@epa.nsw.gov.au> on behalf of EPA HIEH NSW Auditors Mailbox <nswauditors@epa.nsw.gov.au>
Sent: Tuesday, 14 February 2017 11:42 AM
To: Sahani Gunatunge
Cc: Andrew Lau; EPA HIEH NSW Auditors Mailbox
Subject: RE: SAS for Sec B Western Sydney Parklands

Hi Sahani

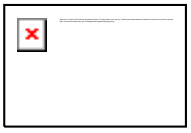
EPA reference to Andrew Lau's SAS No.0503-1301 for Western Sydney Parklands dated 4 August 2015 is DOC17/48615.

Please note the second Site Audit Notification (SAN) submitted on 23 January 2017 for this site has been recalled and deleted.

As discussed, once the Section A audit is completed, Andrew may use a suffix A after the audit number to identify it from the Section B SAS.

Kind regards,

Rose Cocks
Audit Officer – Contaminated Land Management
Hazardous Incidents and Environmental Health, NSW Environment Protection Authority
+61 2 9995 5647
rose.cocks@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555



From: Sahani Gunatunge [mailto:SGunatunge@jbsg.com.au]
Sent: Tuesday, 14 February 2017 9:37 AM
To: EPA HIEH NSW Auditors Mailbox <nswauditors@epa.nsw.gov.au>
Cc: Andrew Lau <ALau@jbsg.com.au>
Subject: RE: query - Western Sydney Parklands

Hi Rose,

As discussed, please find attached the Section B Site Audit Statement issued by Andrew Lau for the Western Sydney Parklands. This is a multi-stage audit with a Section A audit anticipated to be completed shortly.

Reflecting this, I'd like to recall the second Site Audit Notification submitted for this site on 23 January 2017.

Thank you for your assistance. If you have any further queries, please do not hesitate to contact me.

Kind Regards,

Sahani Gunatunge | Environmental Engineer / Auditor Assistant | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000

T: 02 8245 0300 | M: 0410 240 607 | www.jbsg.com.au
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From: Andrew Lau
Sent: Monday, 13 February 2017 4:41 PM
To: Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: FW: query - Western Sydney Parklands

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Rose Cocks [mailto:Rose.Cocks@epa.nsw.gov.au] **On Behalf Of** EPA HIEH NSW Auditors Mailbox
Sent: Monday, 13 February 2017 4:08 PM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: EPA HIEH NSW Auditors Mailbox <nswauditors@epa.nsw.gov.au>; Rita Sirianni <RSirianni@jbsg.com.au>
Subject: query - Western Sydney Parklands

Dear Andrew

Our record shows there are two Site Audit Notifications of same audit number (attached) for the Western Sydney Parklands. Please could you shed light on the status of this audit.
Your Annual Return 2016 indicated that a Sec B Site Audit Statement was issued (but not received).

Please call should you wish to discuss.
Thank you.

Rose

Rose Cocks
Audit Officer – Contaminated Land Management
Hazardous Incidents and Environmental Health, NSW Environment Protection Authority
+61 2 9995 5647
rose.cocks@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Wednesday, 15 February 2017 8:24 AM
To: Andrew Lau
Cc: Sahani Gunatunge
Subject: Cartage of Asbestos Impacted Soils on site
Attachments: LAA Approval.pdf; 2270540A-ASB-ARCP -Enviropacific-RevA.PDF; YO7030 - WP03 - AMP ARCP rev03.pdf

Andrew,

Please see below proposal from the Contractor to modify the method of soil haulage.

The Contractor intends to commence haulage on site tomorrow, we apologies for the late notification but if you are able to get back to me as soon as possible it would be very helpful.

I have attached an approval email from the Environmental Consultants Licensed Asbestos Assessor - Farzad Jalali. The AMP has been amended to reflect the change in soil haulage method.

Please confirm your approval.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Friday, 10 February 2017 11:03 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; Dane Magnus <dane.magnus@enviropacific.com.au>
Subject: RE: Cartage of Asbestos Impacted Soils on site

Hi Luke, see below and attached.

RAP method (11.2.4 Haulage of soils):

- All trucks transporting asbestos impacted soil must be covered in order to minimise dust generation;

Proposed deviation:

- As an alternative to covering the loads during transport of non-friable asbestos impacted soils we propose to wet the load along with additional controls including a checking process overseen by WSP PB documenting that each load has not been overfilled and at the completion of the excavation clearance would also include checking the surface of the haulage route.
- As an alternative to covering the loads during transport of friable asbestos impacted soils we propose to wet the load initially then spray with an additional binding layer (hydromulch). Additional controls would also include ensuring the application process does not generate dust (unlikely as the material will already be wet down), initial check of loads to ensure that there is no significant movement of the soil in transit that could expose fresh, untreated surfaces in the truck and asbestos monitoring on a point on the haul road.

Compliance:

- *AMP: Confirmed approval attached from LAA (attached email with confirmation). Revised AMP / ARCP attached as per comments from LAA.*

Regards

Adam Gillis
Senior Project Manager

M 0447 611 605
W enviropacific.com.au

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Tuesday, 7 February 2017 8:57 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: RE: Cartage of Asbestos Impacted Soils on site

Hi Luke,

The management and monitoring of issues related to friable asbestos on site must be advised by a WorkCover Licensed Asbestos Assessor (LAA), as per relevant WHS regulations.

I'm unable to determine from the email chain below whether the proposed measures have been proposed/agreed to by the nominated LAA in the AMP/ARCP that was provided for my review a week or two back.

On this basis, I'm unable to comment on whether the appropriate processes have been followed to develop the alternate management measures and, on this basis, am unable to confirm that they are consistent with relevant guidelines/regulations.

Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
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Rita Sirianni

From: Andrew Lau
Sent: Wednesday, 15 February 2017 9:25 AM
To: Luke Wilson
Cc: Sahani Gunatunge; Andrew Lau
Subject: Re: Cartage of Asbestos Impacted Soils on site

Hi Luke

I am satisfied that the appropriate processes have been followed and that the proposed methodologies appear to be aligned with the requirements of the RAP.

Please note that approval of any such approach is outside the realm of the contaminated site auditor and that the licensed asbestos assessor is responsible for advising on the handling of friable asbestos on site as per relevant WHS regs.

Regards
Andrew

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

> On 15 Feb. 2017, at 08:24, Luke Wilson <Luke.Wilson@wspt.nsw.gov.au> wrote:
>
> Andrew,
>
> Please see below proposal from the Contractor to modify the method of soil haulage.
>
> The Contractor intends to commence haulage on site tomorrow, we apologies for the late notification but if you are able to get back to me as soon as possible it would be very helpful.
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> I have attached an approval email from the Environmental Consultants Licensed Asbestos Assessor - Farzad Jalali. The AMP has been amended to reflect the change in soil haulage method.
>
> Please confirm your approval.
>
> Regards
>
> Luke Wilson | Project Manager
> Western Sydney Parklands Trusts
> Mob: 0400 506 926
>
> From: Adam Gillis [mailto:adamg@enviropacific.com.au]
> Sent: Friday, 10 February 2017 11:03 AM
> To: Luke Wilson
> <Luke.Wilson@wspt.nsw.gov.au<mailto:Luke.Wilson@wspt.nsw.gov.au>>
> Cc: Scott Kilpatrick
> <scott.kilpatrick@enviropacific.com.au<mailto:scott.kilpatrick@envirop

> acific.com.au>>; Dane Magnus
> <dane.magnus@enviropacific.com.au<mailto:dane.magnus@enviropacific.com
> .au>>
> Subject: RE: Cartage of Asbestos Impacted Soils on site
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> RAP method (11.2.4 Haulage of soils):
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> Compliance:
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> · AMP: Confirmed approval attached from LAA (attached email with confirmation). Revised AMP / ARCP attached as per comments from LAA.
>
> Regards
>
> Adam Gillis
> Senior Project Manager
>
> [cid:image001.png@01D2838E.1C224B90]
>
> M 0447 611 605
> W enviropacific.com.au<http://www.enviropacific.com.au/>
> [cid:image002.png@01D2838E.1C224B90]
>
> From: Andrew Lau [mailto:ALau@jbsg.com.au]
> Sent: Tuesday, 7 February 2017 8:57 AM
> To: Luke Wilson
> <Luke.Wilson@wspt.nsw.gov.au<mailto:Luke.Wilson@wspt.nsw.gov.au>>
> Cc: Andrew Lau <ALau@jbsg.com.au<mailto:ALau@jbsg.com.au>>; Sahani
> Gunatunge <SGunatunge@jbsg.com.au<mailto:SGunatunge@jbsg.com.au>>
> Subject: RE: Cartage of Asbestos Impacted Soils on site
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>

> On this basis, I’m unable to comment on whether the appropriate processes have been followed to develop the alternate management measures and, on this basis, am unable to confirm that they are consistent with relevant guidelines/regulations.
>
> Andrew
>
>
> [image002]Andrew Lau | Managing Director, Accredited Auditor | JBS&G
> Sydney | Melbourne | Adelaide | Perth | Brisbane Level 1, 50 Margaret
> Street Sydney NSW 2000
> T: 02 8245 0300 | M: 0412 512 614 |
> www.jbsg.com.au<http://www.jbsgroup.com.au/>
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> <image001.png>
> <image002.png>
> <image006.jpg>
> <LAA Approval.pdf>
> <2270540A-ASB-ARCP -Enviropacific-RevA.PDF>
> <YO7030 - WP03 - AMP ARCP rev03.pdf>

Rita Sirianni

From: Andrew Lau
Sent: Monday, 20 February 2017 9:35 AM
To: Luke Wilson
Cc: Sahani Gunatunge; Andrew Lau
Subject: RE: Remediation at Eastern Creek

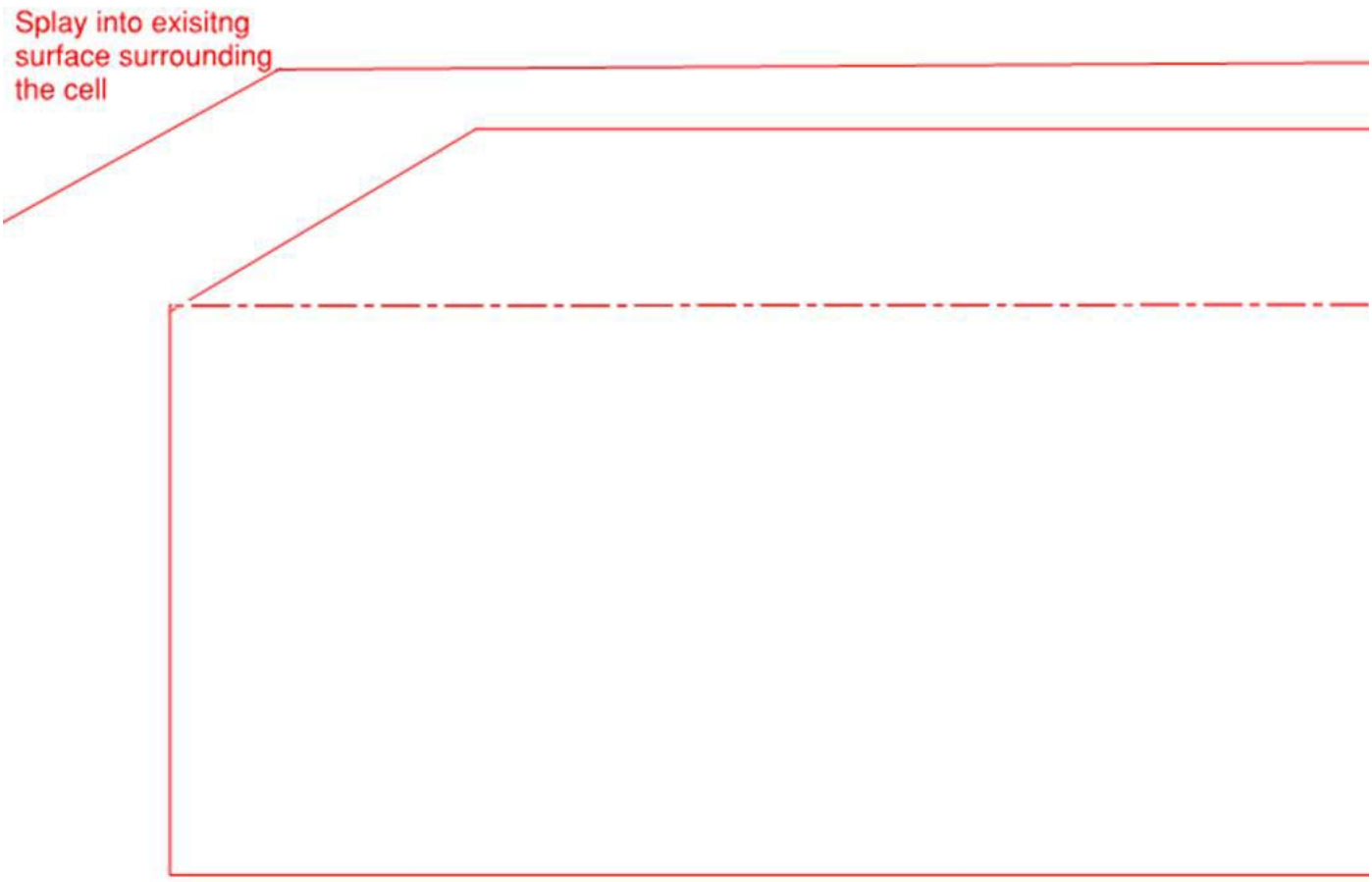
Luke,
So long as it isn't within a floodway or designated overland flowpath (in which case it would need to be demonstrated that the cap won't wash away under such circumstances), then I am comfortable with what you've outlined in your email below.
Kind regards,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Saturday, 18 February 2017 9:15 AM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: RE: Remediation at Eastern Creek

Goodmorning Andrew,

The Contractor is proposing to fill the containment cell so that the finish level of the capping layer will sit higher than the existing surface. For example the cell may end in a mound of 1.2 metre higher than the existing surface level, do you have any issues with this? We did speak about it some time ago and you did not flag any issues at the time.



If this can be done it will be a very efficient approach for us.

Feel free to call to discuss.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
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Rita Sirianni

From: Andrew Lau
Sent: Monday, 6 March 2017 11:04 AM
To: Luke Wilson
Cc: George Henien; Andrew Lau; Rita Sirianni; Sahani Gunatunge
Subject: RE: ECRC - Asbestos Remediation (754-SYDEN202804-L01)

Luke,

I have reviewed the information provided and attached to your email below, along with going back to the RAP and the SAS/SAR.

I accept Coffey's views presented in their review of the proposed modifications to the RAP by the contractor and their consultant and am in agreement that there's nothing presented in the information which suggests a need to depart from the previously agreed processes in the RAP / RAP addendum and accepted in the SAS.

Kind regards,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Friday, 3 March 2017 1:40 PM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: George Henien <GHenien@hansenyuncken.com.au>
Subject: FW: ECRC - Asbestos Remediation (754-SYDEN202804-L01)

Andrew,

As discussed, WSPT have engaged Coffey to provide clarification on a few queries surrounding the RAP. See attached letter.

Can you please have a look over this for me? We intend to meet with the Contractor Tuesday morning to pave a clear way forward, please let me know if anything in the attached conflicts with your SAS?

I have also attached some recommendations by Michael following a test pitting exercise. Let me know if you have any concerns with his recommendations.

WSPT is eager to progress the works and to satisfy all requirements to render the site suitable for use.

Kind Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Quayle, Colee [mailto:Colee.Quayle@coffey.com]
Sent: Wednesday, 1 March 2017 7:11 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Dunbavan, Michael <Michael.Dunbavan@coffey.com>
Subject: ECRC - Asbestos Remediation (754-SYDEN202804-L01)

Luke

Response to your enquire is attached.

Regards

Colee Quayle
Senior Associate Environmental Scientist

118 Auburn Street
Wollongong, NSW 2500, Australia

t: +61 2 4201 1400
m: +61 403 242 431





>>> **Ingenuity@coffey** – it's the ideas that count

Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Friday, 10 March 2017 9:02 AM
To: Andrew Lau
Cc: George Henien; Sahani Gunatunge
Subject: RE: Remediation at Eastern Creek

Andrew,

I just spoke with Michael, this will remain as per the RAP "Validation soil sampling will be undertaken at excavations removing friable asbestos impact at TP21X *and SP9L1* any other location where ACM fragments are assessed as being in poor condition."

To break this down;

- Assess the impact at the surface
- Scrape that particular location to remove the observed impacted materials
- Testing for ACM and AF/FA as per Section 10.3 of the RAP

Let me know if acceptable.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Friday, 10 March 2017 8:13 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: George Henien <GHenien@hansenyuncken.com.au>; Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: Re: Remediation at Eastern Creek

Luke
The proposed approach is acceptable for ACM. It is unclear though how AF/FA is being addressed in the email below as it is silent on the issue.
Andrew

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

On 9 Mar 2017, at 18:45, Luke Wilson <Luke.Wilson@wspt.nsw.gov.au> wrote:

> Hi Andrew,
>
> I left you a message today, we have had a meeting with the Contractor following the clarifications made by Coffey. The Contractor has proposed the following approach to assess each of the suspected areas prior to excavation of observed ACM affected materials.
>
> Observation and Excavation of the High Likelihood Areas:

- Undertake a test pitting program and surface appraisal (for surface ACM and building footprints) within the suspected areas identified in the RAP to identify if asbestos is present on the surface and / or the fill.
- The test pitting will be undertaken on a grid basis (see further details below) within each of the areas.
- Test pit locations containing asbestos will be marked out. The test pit locations identified wi th asbestos will then be excavated and validated as per the RAP, with affected material placed and compacted in the cell.

Testing Pitting Density based on WA guidelines /NSW EPA 1995;

- Test pitting density of 5m by 5m for areas less than or equal to 500m2
- Test pitting density of 10m by 10m for areas greater than 500m2
- The test pits will extend to 0.1-0.15m

Excavated Materials removed from the test pits;

- Observed to be affected with ACM will be transported and placed in to the containment cell.
- With no sign of ACM will remain in place.

Following a detailed discussion with the Contractor and in consultation with WSP, this looks like a great approach to not only identify the previous building footprints and surface ACM but to also assess the residual of the suspected areas surrounding the former structures. Note any ACM identified outside of the suspected areas during the course of the works will be treated as an unexpected find and remediated as per the RAP.

I can call in the morning to run through it and happy to answer any queries. Please confirm your acceptance of the above approach proposed by the LAA.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark

<image001.jpg>

Rita Sirianni

From: Andrew Lau
Sent: Wednesday, 26 April 2017 2:12 PM
To: Luke Wilson
Cc: Sahani Gunatunge; Rita Sirianni; Andrew Lau
Subject: Re: Validation of the Proposed Childcare Area (1500m2)

Luke
Other than requesting that separate bags of soil are collected from each proposed sampling location to enable 500 ml asbestos analyses as per DoH 2009, then what is outlined below is acceptable.
Regards
Andrew

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

On 26 Apr 2017, at 12:24, Luke Wilson <Luke.Wilson@wspt.nsw.gov.au> wrote:

> Andrew,
>
> Hope you had a good Anzac Day.
>
> Can you please confirm if the below method proposed by WSP is acceptable for validation of the proposed Childcare area at Easter Creek.
>
> Regards
>
> **Luke Wilson | Project Manager**
> Parramatta Park & Western Sydney Parklands Trusts
> Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
> Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
> Postal: PO Box 3064 Parramatta NSW 2124
> W: www.parrapark.com.au | www.westernsydneyparklands.com.au
> Facebook: /parrapark | /westernsydneypark
> Twitter: @parrapark | @westernsydpark
>
> <image004.jpg>
>
> ---
>
> **From:** Adam Gillis [mailto:adamg@enviropacific.com.au]
> **Sent:** Wednesday, 26 April 2017 11:15 AM
> **To:** Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
> **Cc:** George Henien <GHenien@hansenyuncken.com.au>; Cain Horsington <cainh@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; Brandan Connell <Brandan.Connell@enviropacific.com.au>
> **Subject:** Validation of the Proposed Childcare Area (1500m2)
>
> Luke, this email sets out the intended sampling plan by WSP PB for the childcare centre. Could you please provide your acceptance of this protocol ASAP as we intend to undertake the works tomorrow.

Sampling program:

- Conduct a site walkover, photograph and describe surface;
- Provide a clearance of the surface for asbestos fragments;
- Collect 7 grab samples from the soil surface on a grid basis in accordance with NSW EPA, 1995. These will be stored in laboratory prepared glass jars and transported to the lab in iced coolers;
- One sample will be collected in triplicate for inter-laboratory and intra-laboratory duplicate analysis;
- At laboratory trip blank and trip spike will accompany the samples in the field to assess potential for cross contamination and volatile losses.

Analytical program:

Based on the Interim Audit report, which summarises previous investigations, the key potentially contaminating activities on the site include agricultural use of pesticides, and asbestos in building rubble and fill materials. The following analytical program seeks to address these concerns.

- 7 samples for Heavy metals/TRH/BTEX/PAH/OCP;
- 7 samples for asbestos quantification;
- Trip blank and Trip spike analysed for BTEX;
- Duplicate and triplicate analysed for Heavy metals/TRH/BTEX/PAH/OCP.

Reporting:

Allowance has been made to prepare a standalone "validation" report for the childcare centre which will compare results to NSW EPA endorsed criteria for "standard residential" landuse which is commensurate with facilities used for childcare activities.

Regards

Adam Gillis
Senior Project Manager

<image001.png>

M 0447 611 605
T 02 9882 4200
E adamg@enviropacific.com.au
W enviropacific.com.au

16/390 Eastern Valley Way, Roseville NSW 2069

<image002.png>

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Rita Sirianni

From: Andrew Lau
Sent: Monday, 1 May 2017 3:58 PM
To: Luke Wilson
Cc: Sahani Gunatunge; Andrew Lau
Subject: RE: Test Pitting of the Friable Areas

Luke,
I have reviewed and am satisfied with the proposed approach.
Regards,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Monday, 1 May 2017 11:00 AM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: FW: Test Pitting of the Friable Areas

Hi Andrew,

The Contractor at Eastern Creek has reached areas K and W that had friable identified in the reporting at locations TP21X and SP9L1. In consultation with WSP/ the LAA, the Contractor has proposed the below to remediate and validate these two areas (K and W).

This is generally an expanded version of the method I sent you earlier. Let me know if you accept the below approach or if you have any comment. The Trust is eager to commence in these areas as soon as possible.

I anticipate the Trust will be in a position for you to visit site within two weeks to audit the work.

Thanks.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
Postal: PO Box 3064 Parramatta NSW 2124
W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark



From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Monday, 1 May 2017 10:31 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: George Henien <GHenien@hansenyuncken.com.au>; Brandan Connell <Brandan.Connell@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; Cain Horsington <cainh@enviropacific.com.au>; Kurt Beckhaus <KBeckhaus@hansenyuncken.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>
Subject: RE: Test Pitting of the Friable Areas

Hi Luke, see below. This procedure has been developed with WSP PB.

- Mark out a 10m by 10m grid in Areas K and W / hen peck asbestos from surface of areas
- Undertake the test pitting. Test pit locations where asbestos was observed will be marked with a peg. The locations where friable was observed will be located by the surveyor and also be marked with a peg (i.e. TP21X and SP9L1).
- In areas where asbestos is observed in a cluster of 2 or more adjacent locations the areas will be excavated between the pegs and laterally extending out 5m towards the pits where asbestos was not identified (i.e. halfway between the pegs) to the depth asbestos was observed. If further asbestos is observed the excavations will be extended either vertically (if on the base) and / or laterally (if identified on the walls) in these areas until no asbestos is observed.
- In areas where asbestos is observed at one remote location then this area will be excavated halfway between the adjacent peg locations (i.e. 5m by 5m in the 10m by 10m grid) to the depth asbestos was identified. If further asbestos is observed the excavations will be extended either vertically (if on the base) and / or laterally (if identified on the walls) in these areas until no asbestos is observed.
- All excavations will be guided by the LAA.
- Once excavated the Areas will be validated as per the RAP (see below)

Validation of the friable area will require analysis on a 5m grid basis in accordance with the RAP:

- *Sampling will be carried out every 5m along the excavation walls (assuming the depth of the excavation is <1m deep);*
- *Visually checking the base of the excavation to confirm absence of ACM;*
- *Collection one sample per 25m^2 of the base, with a minimum of 1 sample, number rounded up, if the excavation terminates in fill soil. If the excavation terminates on natural soils, a photographic record will be made and no soil validation sampling will be undertaken;*
- *Per sample location, 10 litres of material will be spread out for inspection on a contrasting colour material, or sieved through a 7mm sieve, and any ACM picked out and placed into a labelled zip lock bag for weighing by the analytical laboratory;*
- *One wetted 500ml sub sample will be collected for laboratory analysis for asbestos identification (AS4964-2004); and*
- *Where asbestos is detected in any sample, the concentration of asbestos as fragments (ACM)and as loose fibres (FA or AF) will be compared with the validation assessment criteria.*

Regards

Adam Gillis

Senior Project Manager

ENVIROPACIFIC SERVICES

M 0447 611 605
W enviropacific.com.au

Start Safe Stay Safe

From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Monday, 1 May 2017 9:15 AM
To: Adam Gillis <adamg@enviropacific.com.au>
Cc: George Henien <GHenien@hansenyuncken.com.au>; Brandan Connell <Brandan.Connell@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; Cain Horsington <cainh@enviropacific.com.au>; Kurt Beckhaus <KBeckhaus@hansenyuncken.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>
Subject: RE: Test Pitting of the Friable Areas

Hi Adam,

Can you please break the approach down procedurally so I can run it by the auditor? Please also confirm this approach has come from the LAA.

Cheers

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

Rita Sirianni

From: Luke Wilson <LWilson@hansenyuncken.com.au>
Sent: Friday, 12 May 2017 10:11 AM
To: Andrew Lau
Subject: RE: Sewer Main

Andrew,

As discussed we will implement a Site Management Plan for the location of the Sewer in area Q (as is) and the Stockpile 1 area (once surface cleared).

Regards,

Luke Wilson
Assistant Development Manager

Hansen Yuncken Pty Ltd
M 0400 506 926 **T** 02 9770 7600

From: Luke Wilson
Sent: Thursday, 4 May 2017 8:43 AM
To: 'Andrew Lau' <ALau@jbsg.com.au>
Subject: FW: Sewer Main

Hi Andrew,

We have come across a sewer main in area Q which is much closer to the surface than documented (0-200mm rather than the 1.3m depth). Luckily the main is positioned to the rear of the demolished properties and not within the building footprints, however it still falls within the suspected ACM area Q under the RAP and we did have a few ACM hits nearby.

We think it would be best to have the marked up area covered off during Construction (i.e. relocation of the Syd Water Asset) to avoid causing a rupture to the main. Can this be done for example careful monitoring in this location with additional controls in place?

I will call to discuss.

Regards,

Luke Wilson
Assistant Development Manager

Hansen Yuncken Pty Ltd
Sydney Corporate Park
Building 1, L3, 75-85 O'Riordan Street, Alexandria NSW 2015
PO Box 7002 Alexandria NSW 2015
T 02 9770 7600 **F** 02 9770 7601 **M** 0400 506 926
lwilson@hansenyuncken.com.au
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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Thursday, 25 May 2017 8:34 AM
To: Andrew Lau
Cc: Sahani Gunatunge; George Henien
Subject: RE: Test Pitting Area L

Thanks Andrew

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Thursday, 25 May 2017 8:33 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>; George Henien <GHenien@hansenyuncken.com.au>; Andrew Lau <ALau@jbsg.com.au>
Subject: Re: Test Pitting Area L

I have no further comments.

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

On 25 May 2017, at 08:17, Luke Wilson <Luke.Wilson@wspt.nsw.gov.au> wrote:

> Morning Andrew,
>
> Apologies for any inconvenience, however with works on site wrapping up early next week I need to have the Contractor commence in area L today. Do you have any further comment on the below or happy for us to proceed?
>
> Our timing is becoming very tight with the Developer intending to be on site mid-June under our agreement, therefore aiming to have you visit site mid to late next week and to provide you with the validation reports toward the end of next week.
>
> Regards
>
> **Luke Wilson | Project Manager**
> Western Sydney Parklands Trusts
> Mob: 0400 506 926
>
> ---
>
> **From:** Luke Wilson
> **Sent:** Tuesday, 23 May 2017 10:25 AM
> **To:** 'Andrew Lau' <ALau@jbsg.com.au>
> **Cc:** 'SGunatunge@jbsg.com.au' <SGunatunge@jbsg.com.au>
> **Subject:** FW: Test Pitting Area L

Andrew,

Just left you a VM, see further clarification from WSP below on their proposal. They are correct that area L has only been nominated in the RAP as a suspected bonded ACM impacted area.

Hopefully this helps otherwise feel free to call me to discuss.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: McKay, Colin [mailto:colin.mckay@wspgroup.com]
Sent: Tuesday, 23 May 2017 10:19 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; Adam Gillis <adamg@enviropacific.com.au>
Cc: Kurt Beckhaus <KBeckhaus@hansenyuncken.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>; George Henien <GHenien@hansenyuncken.com.au>; Brandan Connell <Brandan.Connell@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>
Subject: RE: Test Pitting Area L

Hi Adam,

A couple of points might need clarification with the Auditor as he mentions “following relevant protocols in the DoH, 2009”.

1) This zone, as I understand it, is a bonded ACM zone. With respect to the test pitting, as with all other areas, if asbestos is observed then that location will be earmarked for removal during the bulk earthworks. We are not intending to carrying out quantification testing by sieving and are not intending to conduct analysis for fibres.
2) If suspected friable material is discovered during the test pitting then analysis will be conducted.
3) In accordance with the RAP, unless friable asbestos is found during the test pitting program, we will validate by visual means only, excavating until no further visible bonded asbestos is observable;

Kind regards

Colin

Colin McKay
Principal Environmental Scientist

<image001.jpg>

D: +61 2 8925 6724
M: +61 4 4897 7926
colin.mckay@wspgroup.com

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Sydney, NSW
2000 Australia

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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Tuesday, 23 May 2017 9:23 AM
To: Adam Gillis <adamg@enviropacific.com.au>
Cc: McKay, Colin <colin.mckay@wspgroup.com>; Kurt Beckhaus <KBeckhaus@hansenyuncken.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>; George Henien <GHenien@hansenyuncken.com.au>; Brandan Connell <Brandan.Connell@enviropacific.com.au>; Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>
Subject: FW: Test Pitting Area L

Adam,

See below acceptance from the site auditor of WSPs proposed method for area L.

As mentioned please follow the relevant protocols in DoH 2009.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
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W: www.parrapark.com.au | www.westernsydneyparklands.com.au
Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark

<image002.jpg>

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Tuesday, 23 May 2017 9:17 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Sahani Gunatunge <SGunatunge@jbsg.com.au>; Andrew Lau <ALau@jbsg.com.au>
Subject: RE: Test Pitting Area L

Luke,
The approach is generally fine, but please ensure that all of the inspections follow the relevant protocols in DoH 2009.
Regards,
Andrew

<image003.jpg>**Andrew Lau** | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Tuesday, 23 May 2017 8:22 AM
To: Andrew Lau <ALau@jbsg.com.au>
Subject: FW: Test Pitting Area L

Andrew,

Please confirm if you are fine with the below method for validation of area L proposed by the Environmental Consultant.

We would like to commence in this area tomorrow morning, hopefully you are able to review this for us in the meantime - otherwise I look forward to hearing from you.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
Mob: 0400 506 926 | Ph: 02 9895 7500 | Fax: 9895 7580
Address: Level 7, 10 Valentine Avenue, Parramatta, NSW 2150
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Twitter: @parrapark | @westernsydpark

<image004.jpg>

From: Adam Gillis [mailto:adamg@enviropacific.com.au]
Sent: Tuesday, 23 May 2017 6:33 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Scott Kilpatrick <scott.kilpatrick@enviropacific.com.au>; George Henien <GHenien@hansenyuncken.com.au>; Brandan Connell <Brandan.Connell@enviropacific.com.au>
Subject: FW: Test Pitting Area L

Hi Luke, see below. As discussed can you please forward this to the auditor for approval.

Regards

Adam Gillis
Senior Project Manager

<image005.png>

M 0447 611 605
W enviropacific.com.au
<image006.png>

From: McKay, Colin [mailto:colin.mckay@wspgroup.com]
Sent: Monday, 22 May 2017 9:56 PM
To: Adam Gillis <adamg@enviropacific.com.au>
Subject: RE: Test Pitting Area L

Hi Adam,

I understand that in Area L there are access challenges because the area is inundated and has been throughout the program to date.

I see no issue with your intended approach if you feel it is practicable.

In summary, I understand that the proposed test pitting program will involve:

- Excavation using a small machine to minimise disturbance to the site;
- The scientist will log the location and depth to natural soil;
- Transport the excavated material to a nearby area that is not under water and place onto a geofabric or plastic barrier to prevent it mixing with underlying soil;
- Allow the soil to drain;
- Scientist will log the soil, checking for fibro fragments.
- Any spoil with fragments found in it will need to be transported to the containment cell and the underlying plastic/geofabric disposed of as asbestos containing material.

Based on the findings of the test pitting program the asbestos chase-out works, in zones where asbestos is identified, will progress as per other areas. It is noted that diversionary bunding and pumping will probably be necessary prior to the bulk excavation works so that the LAA can visually clear the base of the excavation once complete.

Due to the challenges in identifying different layers of fill in the inundated conditions, where asbestos is identified, the fill would be removed to the underlying natural clay surface.

Kind regards

Colin McKay
Principal Environmental Scientist

<image007.jpg>

D: +61 2 8925 6724
M: +61 4 4897 7926
colin.mckay@wspgroup.com

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Sydney, NSW
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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Thursday, 8 June 2017 1:28 PM
To: Andrew Lau; McKay, Colin
Subject: RE: ECRC- Site Boundary and Cell Locations
Attachments: TSS.170069_1014 CelL Overlayed on Boundaries.pdf; A00 Site Plan.pdf

Andrew,

The only difference to the initial site boundary of the diagram in the RAP (attached) is that the corner resident on Beggs Rd (Lot 2 DP31130) does not form part of the development and therefore has not been remediated by EPS (this residence remains private and occupied).

Please see revised plan attached. Let me know if this is what you were after?

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Thursday, 8 June 2017 11:36 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; McKay, Colin <colin.mckay@wspgroup.com>
Subject: RE: ECRC- Site Boundary and Cell Locations

Luke,
Can you please have the surveyor adjust the thick red boundary line to exclude whatever bits you're not including in the sign off and also align it with the previous SAS/SAR to be consistent.
Thanks
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Wednesday, 7 June 2017 2:44 PM
To: McKay, Colin <colin.mckay@wspgroup.com>; Andrew Lau <ALau@jbsg.com.au>
Subject: ECRC- Site Boundary and Cell Locations

Andrew/Colin,

Please find attached plan which shows the site boundary and cell locations.

My understanding is that the RAP and SAS cover the following lots at our site;

- Part Lot 1 DP1103025

- Lot 100 DP882326
- Lot 2 & 3 Section A DP8681
- Lot 3 to Lot 5 Section B DP8681
- Lot 1 DP135665
- Lots 1 & 13 Section B DP 8681
- Lots 1 to 10 DP830836
- Lots 2 & 3 DP1041487
- Lot A DP358346
- Lot 1, Lots 3 & 8 DP31130
- Lots 11, 12 and 14 DP882325
- Lots 1 & 2 DP1069269
- Lot 14 DP1051904
- Lots 11, 12 and 50 DP1041487
- Beggs Road (southern half) – Public Crown Subdivision Land
- Beggs Road (northern half) – Road being the residue of Land in Certificate of Title Volume 826 Folio 243
- Belmore Road from intersection with Beggs Road to its intersection with Great Western Hwy (western half) – Road being the residue of Land in Certificate of Title Volume 826 Folio 243
- Belmore Road from intersection with Beggs Road to its intersection with Great Western Hwy (eastern half) – Public Crown Subdivision Road.
- Belmore Road from its intersection with Beggs Road to its extent to north-east (western half) – Road being the Residue of Land in Certificate of Title Volume 147 Folio 41.
- Belmore Road from its intersection with Beggs Road to its extent to north-east (eastern half) – Public Crown Reserved Road Easement for Gas Pipeline – Easement for Pipeline (Vide Q916928).

Please let me know if you need anything further from me at this stage.

Regards

Luke Wilson | Project Manager
Parramatta Park & Western Sydney Parklands Trusts
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Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark



Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Friday, 16 June 2017 1:02 PM
To: Andrew Lau; McKay, Colin
Cc: Sahani Gunatunge
Subject: RE: ECRC- Site Boundary and Cell Locations
Attachments: TSS.170069_1015 Cell Overlayed on Boundaries.pdf

Andrew,

Please find attached diagram, which now;

- Excludes the property on the crn of Beggs Road and Rooty Hill Rd South.
- Shows coordinates of the cells.

Let me know if there is anything else you need at this time. We currently anticipate the reports to come through from WSP no later than Mon 26/6 for you to commence review and preparation of SAS.

Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Thursday, 15 June 2017 10:38 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; McKay, Colin <colin.mckay@wspgroup.com>
Cc: Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: RE: ECRC- Site Boundary and Cell Locations

Luke/Colin,

Can you please also request the co-ordinates to be shown on the cell locations.

Ta,
Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
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Sent: Thursday, 8 June 2017 1:28 PM
To: Andrew Lau <ALau@jbsg.com.au>; McKay, Colin <colin.mckay@wspgroup.com>
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Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

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To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>; McKay, Colin <colin.mckay@wspgroup.com>
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Thanks
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- Belmore Road from its intersection with Beggs Road to its extent to north-east (eastern half) – Public Crown Reserved Road Easement for Gas Pipeline – Easement for Pipeline (Vide Q916928).

Please let me know if you need anything further from me at this stage.

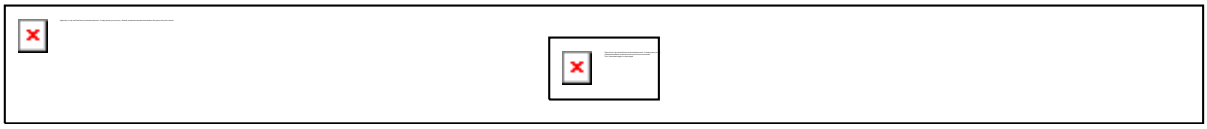
Regards

Luke Wilson | Project Manager
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Facebook: /parrapark | /westernsydneypark
Twitter: @parrapark | @westernsydpark



Rita Sirianni

From: WeTransfer <noreply@wetransfer.com>
Sent: Tuesday, 11 July 2017 1:08 PM
To: Andrew Lau
Subject: luke.wilson@wspt.nsw.gov.au sent you files via WeTransfer



luke.wilson@wspt.nsw.gov.au
sent you some files

4 files, 103 MB in total • Will be deleted on 18 July, 2017

Get your files

Eastern Creek Remediation;
Validation Report - Overall Site
Validation Report- Childcare
EMP w/ LEMP in Appendix

Download link

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4 files

2270540A-CLM-REP-002 RevC.pdf

2270540A-CLM-REP-003 RevD - Appendix C.PDF
2270540A-CLM-REP-001 RevD.pdf
2270540A-CLM-REP-003 RevD.pdf

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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Monday, 24 July 2017 4:46 PM
To: Andrew Lau
Cc: Rita Sirianni; Sahani Gunatunge; George Henien; Tim Ireson
Subject: RE: Audit Comments for Eastern Creek Business Hub Validation Reports and Management Plans

Hi Andrew,

Thank you for sending these through. I don't think WSP will have much trouble responding/updating for most of the comments.

Can you please call me tomorrow morning when available, I want to discuss some of your comments below in relation to the EMP documents. You make reference to 'moderate risk' of asbestos on site, however from my understanding the site has been remediated as per the RAP with no change in scope therefore any potential for asbestos on the site during earthworks would remain as 'Low Likelihood' and managed under an Unexpected Finds Protocol. There is a comment regarding known asbestos fill being left on site, however this is not the case - all excavations were in fact remediated to natural clay or only terminated in a non-natural material if the Licenced Asbestos Assessor was confident from their experience that the material is not reasonably likely to contain any ACM (this approach came from Coffey's when clarifying what was intended by the RAP).

Following careful consultation with the Contractor, Coffey's and WSP throughout the Works we made sure the site were remediated fully with all suspected and know sources removed to an acceptable level so that only an Asbestos Management Plan would be required for the earthworks not any type of Long Term Mgmt. Plan. That is why the LEMP only applies to the Containment Cells. I can send through the clarification letter from Coffey's that reinstates this if that would help?

Thanks and hope to speak tomorrow so I can forward comments on to WSP to close out the Environmental Reporting this week.

Kind Regards

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Monday, 24 July 2017 1:23 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Rita Sirianni <RSirianni@jbsg.com.au>; Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: Audit Comments for Eastern Creek Business Hub Validation Reports and Management Plans

Luke,

The following reports, prepared by WSP were provided for the Eastern Creek Business Hub:

- Western Sydney Parklands Trust Eastern Creek Business Hub – Validation Report, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 20174a).
- Addendum to Western Sydney Parklands Trust Eastern Creek Business Hub – Validation Report, Childcare Centre, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017b).
- Western Sydney Parklands trust Eastern Creek Business Hub – Environmental Management Plan, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017c).
- Western Sydney Parklands Trust Eastern Creek Business Hub – Long-Term Environmental Management Plan, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017d).

The abovementioned reports were reviewed and the following comments provided for action by the consultant:

Validation Report (WSP 2017a)

- It is understood that the remediation works were targeted to remediate "high likelihood areas" of concern, as stipulated in the Coffey RAP, with "low likelihood area' outside the scope of work, with any residual risk to be managed during the site development process via an EMP (as detailed below).
- Section 5.4 – Sufficient detail has been provided on the cell capacity and survey location, with sufficient detail also provided on the survey drawings.
- Table 5.2 – The consultant is required to provide more justification for the discrepancy in the actual volumes of soil removed to the surveyed volumes of the containment cell 1. The discrepancy is greater than 5,000 m^3 and the justification provided that the "tippers were underfilled" is not sufficient, particularly noting the volumes removed were generally comparable to surveyed volumes in containment cell 2. In addition, the consultant is required to confirm whether the cell was compacted and if so, were compaction tests undertaken.
- Section 5.5 – the report mentions that the "layer was covered with at least 0.2 m of VENM material". This varies to the requirements of the RAP and ANZECC 1999. A review of the survey plan indicates that a minimum of 0.5 m of VENM was placed on the layer, however please confirm. In addition, as per the requirements of Appendix B of the RAP Addendum (Coffey 2016), was growing medium placed on the containment cell?
- It is understood that the remediation areas were terminated in the fill, therefore there is still a potential for asbestos to occur at the site.
- Table 7.1 – for ease of reference, it is recommended to add a column showing the depth of the excavation od if terminated in the fill. The clearance certifications state that "clearance is only valid to the top of the excavation, i.e, top of fill" as such, please tabulate al excavation depths.
- Section 7.2 –
    - Refer to VENM comments as detailed below in Appendix J.
    - Refer to Section 2.1 of the RAP Addendum to confirm that all specifications were complied.
- Section 7.3 –
    - No discussion on the "low likelihood areas'.
    - No mention of the location of the sewer in Area Q and stockpile 1 area, as per email dated 4/5/2017.
- Figure 2 – For completeness, Figure 2 should include the following:
    - Location of the containment cell.
    - Excavation / remediation areas / locations, as per the survey drawings as presented in Appendix B.
    - Show the location of where the VENM material was excavated?
    - Show location of Area S Stockpile (asbestos rubble).
- Appendix B – Drawing 1 of 6
    - The location of the cells is shown in this drawing – however further information regarding the containment cell has not been provided in the report. Further information regarding whether the area was inspected first prior to the construction of the containment cell? Was clearance provided? In particular provide comment on the overlap of Area I and Cell 2.
    - Area B – the report states that no testpits were installed due to significant visible asbestos detected in this area. However, the clearance certificate in Appendix D states that testpitting was undertaken. The consultant is required to confirm the extent of works completed in this area.
    - Were the depths of the remediation excavations / areas surveyed?
- Appendix B – Drawing 6 of 6 – Testpits borelogs for Area W were not provided in Appendix C.
- Appendix C – The following areas were not included on the survey plans, Area F, Area S and Area U.
- Appendix D
    - During the clearance of Area G / Stockpile 1; Stockpiled Waste – Area S & T; and Haul Roads – works were undertaken by an unlicensed assessor. Provide justification that the person undertaking the works was competent to assess for asbestos.
    - No site plan provided for works associated with the Stockpile Waste – Area S and T.
    - What is the extent of the pit and depth of fill in the pit between Area B and K?
    - Was the bonded ACM disposed offsite or included in the containment cell?

- A review of the air monitoring dates indicate that they do not all correlate with fieldwork dates – review and revise, where necessary.

- Appendix F – Air monitoring results:
  - Fieldworks were completed in February / March, however air monitoring results were only available for 13/2 and then April. Review and confirm that all air monitoring results have been provided.
- Appendix G – A review of the truck load summary with Table 5.2, shows discrepancies including:
  - Material sourced from Area L (2/6/17); Clay stockpile from excavation of Cell 1 – where did this material go?
  - Area L (May) with a volume of 351 m3 – where did this material go?
  - Referring to Table 5.2 – Does the volume estimated in Area A South include the volumes for Haul Road South A (as detailed in truck movement loads dated 16 and 17/5/17).
  - Table 5.2 – Area L volume does not match with the volumes tabulated in the truck load estimates.
  - Table 5.2 – Stockpile 1 (May) – The volume is lower than what was provided in the truck load summary. This was estimated at 2158 m^3, review and confirm.
  - Based on the above discrepancies, this means that there is an additional outstanding volume of 3640 m^3 in Cell 1, compared to what was reported by the consultant – review and confirm.
  - Table 5.3 – The total quantity removed for Area A South has been estimated at 1,196 m^3, however a review of the truck load summaries indicates that this is actually 1664 m^3 – review and confirm.
- Appendix I – A review of the survey drawings notes the following:
  - Cell 1 – The volume excavated was 11,350.699 – where did this material go? Was the material clean and free of ACM?
  - Cell 2 – The volume excavated from Cell 2 was not documented – was this area already an open excavation?
  - Discrepancies in survey cell volume, refer to Table 5.2 comments above.
- Appendix J –
  - More explanation is required as to the discrepancy on the volume of VENM excavated (17,000 m^3) and volume surveyed (12,241 m^3).
  - Show the location of the source of VENM on Figure 2.
  - Provide material tracking documentation of the VENM material.
  - Describe the soil profile of the material excavated in this area i.e, was there any fill / topsoil overlying the natural soils? If so, where was this material placed?
  - How was the material screened for asbestos?
  - Where was the VENM material temporarily stored prior to use within the containment cell? Confirm if environmental staff were present during these works or only during the inspection of the stockpile?
- There are no records for offsite disposal. The consultant is required to confirm that no materials were disposed offsite. If materials were disposed offsite, copies of waste documentation records are required to be provided in the report.

<u>Addendum to Validation Report – Childcare Centre (WSP 2017b)</u>

- Section 1 and Table 2.1 – the exact area occupying the proposed childcare centre needs to be shown on a detailed survey plan, showing coordinates at all site boundaries.
- Section 2.4 –
  - A summary of remediation works completed across the wider site has been provided in the report. However, the extent of contamination in the immediate vicinity of the site (i.e, the proposed childcare centre) has not been discussed. It is understood that no ACM or fill was encountered within the proposed site, however consideration to the potential for adjacent contamination to be present should be considered.
  - Based on a review of WSP 2017a, it is understood that Area S is located adjacent to the proposed childcare centre. A summary of the site conditions indicates that fly-tipping was located adjacent to Area S, and the presence of an asbestos rubble west of Area S. The consultant will be required to confirm these areas in relation to the proposed childcare centre.
- Table 3.1 –
  - A description of soil conditions has been summarised in the table.

    - Confirm the total depth of investigation.
    - Borelogs / field notes were not provided in the report.
- Table 4.3 – The asbestos criteria nominated in the report is not protective of childcare centre. HSL-D criteria is not considered an appropriate criterion for landuse as a childcare centre.
- Figure 2 –
    - Add the other markers as shown on the map in the legend.
    - Show Area S on the map.
    - Present the site playout of the child care centre as per the site plan provided in Figure 2 of WSP 2017a
- Figure 3 – Surveyed coordinates of each boundary of the proposed childcare centre is required to be provided to the auditor.

Though not clear from the title of the documents, it appears that two Environmental Management Plans (EMPs) have been prepared namely relating to:

- Management of risk during future site development / construction works and assumed specific to a development / construction workforce; and
- Management of long term risks subsequent to site development.

Comments for each EMP are provided as follows:

<u>Development / Construction Works EMP (WSP 2017c)</u>

- The scope of the EMP should be made clear in the document title to prevent confusion;
- There is no basis within the document to demonstrate how the document will be made legally enforceable;
- The document should contain a description of the relationship of the document with existing occupational guidance for control of asbestos risks to site workers. This should include applicability of asbestos removal licensing conditions as should apply to future earthworks contractors as engaged to the site;
- The description of asbestos impacts outside the capped area of the site as an 'unexpected find' is misleading and should be revised. As evident from the Site Validation Report, no attempt has been made to completely remediate the site of asbestos, and asbestos is anticipated underlying the extent of site excavations and laterally away from the location of site excavations;
- The description of 'Unexpected Finds' should be clarified to include other contaminants apart from asbestos;
- The EMP requires to be readily and understood by a range of development workers whom will not necessarily be familiar with typical environmental assessment / remediation / validation works and methods. The descriptions here should be substantially simplified and make clear the known limitations of the remedial works completed. Clear statements and references to figures should be provided;
- There is no guidance in the EMP for monitoring that can be undertaken to assess whether exposures occur during development works. This should at least address asbestos;
- There is no guidance in the EMP for the types of personal protective equipment, engineered controls or otherwise that can be applied to mitigate the risk of exposure to site contaminants. This should at least address asbestos.
- Guidance should be provided to potential waste classifications of surplus soils as may be generated during future site works, or otherwise potential contaminants to be assessed in classifying wastes; and
- No provision has been made for review or revision of the EMP, as may be required where site conditions are substantially different from those described in the EMP.

<u>Long Term EMP (WSP 2017d)</u>

- The document is observed to be restricted to the containment cells. However, asbestos is known to be present in other areas of the site (i.e. underlying the extent of excavations undertaken to source asbestos impacted materials to be place into the containment cells). How are these other asbestos impacted areas proposed to be notified and/or managed?

- The document is considered overly long and verbose for what is a straightforward scope. Consideration should be given to simplification of a number of EMP sections. E.g, Section 2.2 to 2.6 could simply be restricted to a description of the location, construction and contents of the containment cells;
- Further to the first comment, in Section 2.6 it is unclear how moderate risks from unexpected finds outside of the extent of the containment cells is relevant to the scope of the EMP. If these moderate risks are present, then why is the scope of the long term EMP being restricted to the containment cells only?
- Consistent with the other EMP, the means of legal enforceability of the EMP needs to be advised / documented;
- With respect to Section 3, the extent of the site needs to be clearly defined, is it restricted to the containment cells, or the whole of the site?
- Further detail is required on whom 'Parklands Rangers' and 'Facilities Maintenance Coordinator' refer to;
- Provision should be made within the EMP for relevant persons as referred to as 'Parklands Rangers' and 'Facilities Maintenance Coordinator' to confirm that they have read and understood the EMP, agree to undertake the relevant obligations within the EMP and confirm that they are readily competent to discharge the same obligations; and
- Detail should be provided in the EMP for good / anticipated practices with respect to the maintenance of the validated condition of the cap (i.e. prevention of erosion, physical damage by vehicle tracking etc).

Regards,

Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
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T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Monday, 31 July 2017 10:53 AM
To: Andrew Lau
Cc: Rita Sirianni; Sahani Gunatunge
Subject: RE: Audit Comments for Eastern Creek Business Hub Validation Reports and Management Plans

Andrew,

Thank you for sending these through – as discussed WSP are reviewing and amending the reports as necessary. We intend to have a response to you by COB today.

Regards,

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Monday, 24 July 2017 1:23 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Rita Sirianni <RSirianni@jbsg.com.au>; Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: Audit Comments for Eastern Creek Business Hub Validation Reports and Management Plans

Luke,

The following reports, prepared by WSP were provided for the Eastern Creek Business Hub:

- Western Sydney Parklands Trust Eastern Creek Business Hub – Validation Report, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 20174a).
- Addendum to Western Sydney Parklands Trust Eastern Creek Business Hub – Validation Report, Childcare Centre, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017b).
- Western Sydney Parklands trust Eastern Creek Business Hub – Environmental Management Plan, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017c).
- Western Sydney Parklands Trust Eastern Creek Business Hub – Long-Term Environmental Management Plan, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017d).

The abovementioned reports were reviewed and the following comments provided for action by the consultant:

<u>Validation Report (WSP 2017a)</u>

- It is understood that the remediation works were targeted to remediate “high likelihood areas” of concern, as stipulated in the Coffey RAP, with “low likelihood area’ outside the scope of work, with any residual risk to be managed during the site development process via an EMP (as detailed below).
- Section 5.4 – Sufficient detail has been provided on the cell capacity and survey location, with sufficient detail also provided on the survey drawings.
- Table 5.2 – The consultant is required to provide more justification for the discrepancy in the actual volumes of soil removed to the surveyed volumes of the containment cell 1. The discrepancy is greater than 5,000 m^3 and the justification provided that the “tippers were underfilled” is not sufficient, particularly noting the volumes removed were generally comparable to surveyed volumes in containment cell 2. In addition, the

consultant is required to confirm whether the cell was compacted and if so, were compaction tests undertaken.

- Section 5.5 – the report mentions that the "layer was covered with at least 0.2 m of VENM material". This varies to the requirements of the RAP and ANZECC 1999. A review of the survey plan indicates that a minimum of 0.5 m of VENM was placed on the layer, however please confirm. In addition, as per the requirements of Appendix B of the RAP Addendum (Coffey 2016), was growing medium placed on the containment cell?
- It is understood that the remediation areas were terminated in the fill, therefore there is still a potential for asbestos to occur at the site.
- Table 7.1 – for ease of reference, it is recommended to add a column showing the depth of the excavation od if terminated in the fill. The clearance certifications state that "clearance is only valid to the top of the excavation, i.e, top of fill" as such, please tabulate al excavation depths.
- Section 7.2 –
    - Refer to VENM comments as detailed below in Appendix J.
    - Refer to Section 2.1 of the RAP Addendum to confirm that all specifications were complied.
- Section 7.3 –
    - No discussion on the "low likelihood areas'.
    - No mention of the location of the sewer in Area Q and stockpile 1 area, as per email dated 4/5/2017.
- Figure 2 – For completeness, Figure 2 should include the following:
    - Location of the containment cell.
    - Excavation / remediation areas / locations, as per the survey drawings as presented in Appendix B.
    - Show the location of where the VENM material was excavated?
    - Show location of Area S Stockpile (asbestos rubble).
- Appendix B – Drawing 1 of 6
    - The location of the cells is shown in this drawing – however further information regarding the containment cell has not been provided in the report. Further information regarding whether the area was inspected first prior to the construction of the containment cell? Was clearance provided? In particular provide comment on the overlap of Area I and Cell 2.
    - Area B – the report states that no testpits were installed due to significant visible asbestos detected in this area. However, the clearance certificate in Appendix D states that testpitting was undertaken. The consultant is required to confirm the extent of works completed in this area.
    - Were the depths of the remediation excavations / areas surveyed?
- Appendix B – Drawing 6 of 6 – Testpits borelogs for Area W were not provided in Appendix C.
- Appendix C – The following areas were not included on the survey plans, Area F, Area S and Area U.
- Appendix D
    - During the clearance of Area G / Stockpile 1; Stockpiled Waste – Area S & T; and Haul Roads – works were undertaken by an unlicensed assessor. Provide justification that the person undertaking the works was competent to assess for asbestos.
    - No site plan provided for works associated with the Stockpile Waste – Area S and T.
    - What is the extent of the pit and depth of fill in the pit between Area B and K?
    - Was the bonded ACM disposed offsite or included in the containment cell?
    - A review of the air monitoring dates indicate that they do not all correlate with fieldwork dates – review and revise, where necessary.
- Appendix F – Air monitoring results:
    - Fieldworks were completed in February / March, however air monitoring results were only available for 13/2 and then April. Review and confirm that all air monitoring results have been provided.
- Appendix G – A review of the truck load summary with Table 5.2, shows discrepancies including:
    - Material sourced from Area L (2/6/17); Clay stockpile from excavation of Cell 1 – where did this material go?
    - Area L (May) with a volume of 351 m3 – where did this material go?
    - Referring to Table 5.2 – Does the volume estimated in Area A South include the volumes for Haul Road South A (as detailed in truck movement loads dated 16 and 17/5/17).
    - Table 5.2 – Area L volume does not match with the volumes tabulated in the truck load estimates.

    - Table 5.2 – Stockpile 1 (May) – The volume is lower than what was provided in the truck load summary. This was estimated at 2158 m^3, review and confirm.
    - Based on the above discrepancies, this means that there is an additional outstanding volume of 3640 m^3 in Cell 1, compared to what was reported by the consultant – review and confirm.
    - Table 5.3 – The total quantity removed for Area A South has been estimated at 1,196 m^3, however a review of the truck load summaries indicates that this is actually 1664 m^3 – review and confirm.
- Appendix I – A review of the survey drawings notes the following:
    - Cell 1 – The volume excavated was 11,350.699 – where did this material go? Was the material clean and free of ACM?
    - Cell 2 – The volume excavated from Cell 2 was not documented – was this area already an open excavation?
    - Discrepancies in survey cell volume, refer to Table 5.2 comments above.
- Appendix J –
    - More explanation is required as to the discrepancy on the volume of VENM excavated (17,000 m^3) and volume surveyed (12,241 m^3).
    - Show the location of the source of VENM on Figure 2.
    - Provide material tracking documentation of the VENM material.
    - Describe the soil profile of the material excavated in this area i.e, was there any fill / topsoil overlying the natural soils? If so, where was this material placed?
    - How was the material screened for asbestos?
    - Where was the VENM material temporarily stored prior to use within the containment cell? Confirm if environmental staff were present during these works or only during the inspection of the stockpile?
- There are no records for offsite disposal. The consultant is required to confirm that no materials were disposed offsite. If materials were disposed offsite, copies of waste documentation records are required to be provided in the report.

<u>Addendum to Validation Report – Childcare Centre (WSP 2017b)</u>

- Section 1 and Table 2.1 – the exact area occupying the proposed childcare centre needs to be shown on a detailed survey plan, showing coordinates at all site boundaries.
- Section 2.4 –
    - A summary of remediation works completed across the wider site has been provided in the report. However, the extent of contamination in the immediate vicinity of the site (i.e, the proposed childcare centre) has not been discussed. It is understood that no ACM or fill was encountered within the proposed site, however consideration to the potential for adjacent contamination to be present should be considered.
    - Based on a review of WSP 2017a, it is understood that Area S is located adjacent to the proposed childcare centre. A summary of the site conditions indicates that fly-tipping was located adjacent to Area S, and the presence of an asbestos rubble west of Area S. The consultant will be required to confirm these areas in relation to the proposed childcare centre.
- Table 3.1 –
    - A description of soil conditions has been summarised in the table.
    - Confirm the total depth of investigation.
    - Borelogs / field notes were not provided in the report.
- Table 4.3 – The asbestos criteria nominated in the report is not protective of childcare centre. HSL-D criteria is not considered an appropriate criterion for landuse as a childcare centre.
- Figure 2 –
    - Add the other markers as shown on the map in the legend.
    - Show Area S on the map.
    - Present the site playout of the child care centre as per the site plan provided in Figure 2 of WSP 2017a
- Figure 3 – Surveyed coordinates of each boundary of the proposed childcare centre is required to be provided to the auditor.

Though not clear from the title of the documents, it appears that two Environmental Management Plans (EMPs) have been prepared namely relating to:

- Management of risk during future site development / construction works and assumed specific to a development / construction workforce; and
- Management of long term risks subsequent to site development.

Comments for each EMP are provided as follows:

Development / Construction Works EMP (WSP 2017c)

- The scope of the EMP should be made clear in the document title to prevent confusion;
- There is no basis within the document to demonstrate how the document will be made legally enforceable;
- The document should contain a description of the relationship of the document with existing occupational guidance for control of asbestos risks to site workers. This should include applicability of asbestos removal licensing conditions as should apply to future earthworks contractors as engaged to the site;
- The description of asbestos impacts outside the capped area of the site as an 'unexpected find' is misleading and should be revised. As evident from the Site Validation Report, no attempt has been made to completely remediate the site of asbestos, and asbestos is anticipated underlying the extent of site excavations and laterally away from the location of site excavations;
- The description of 'Unexpected Finds' should be clarified to include other contaminants apart from asbestos;
- The EMP requires to be readily and understood by a range of development workers whom will not necessarily be familiar with typical environmental assessment / remediation / validation works and methods. The descriptions here should be substantially simplified and make clear the known limitations of the remedial works completed. Clear statements and references to figures should be provided;
- There is no guidance in the EMP for monitoring that can be undertaken to assess whether exposures occur during development works. This should at least address asbestos;
- There is no guidance in the EMP for the types of personal protective equipment, engineered controls or otherwise that can be applied to mitigate the risk of exposure to site contaminants. This should at least address asbestos.
- Guidance should be provided to potential waste classifications of surplus soils as may be generated during future site works, or otherwise potential contaminants to be assessed in classifying wastes; and
- No provision has been made for review or revision of the EMP, as may be required where site conditions are substantially different from those described in the EMP.

Long Term EMP (WSP 2017d)

- The document is observed to be restricted to the containment cells. However, asbestos is known to be present in other areas of the site (i.e. underlying the extent of excavations undertaken to source asbestos impacted materials to be place into the containment cells). How are these other asbestos impacted areas proposed to be notified and/or managed?
- The document is considered overly long and verbose for what is a straightforward scope. Consideration should be given to simplification of a number of EMP sections. E.g, Section 2.2 to 2.6 could simply be restricted to a description of the location, construction and contents of the containment cells;
- Further to the first comment, in Section 2.6 it is unclear how moderate risks from unexpected finds outside of the extent of the containment cells is relevant to the scope of the EMP. If these moderate risks are present, then why is the scope of the long term EMP being restricted to the containment cells only?
- Consistent with the other EMP, the means of legal enforceability of the EMP needs to be advised / documented;
- With respect to Section 3, the extent of the site needs to be clearly defined, is it restricted to the containment cells, or the whole of the site?
- Further detail is required on whom 'Parklands Rangers' and 'Facilities Maintenance Coordinator' refer to;
- Provision should be made within the EMP for relevant persons as referred to as 'Parklands Rangers' and 'Facilities Maintenance Coordinator' to confirm that they have read and understood the EMP, agree to

undertake the relevant obligations within the EMP and confirm that they are readily competent to discharge the same obligations; and

- Detail should be provided in the EMP for good / anticipated practices with respect to the maintenance of the validated condition of the cap (i.e. prevention of erosion, physical damage by vehicle tracking etc).

Regards,

Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Wednesday, 2 August 2017 1:44 PM
To: Andrew Lau
Cc: Rita Sirianni; Sahani Gunatunge; 'George Henien'; Tim Ireson
Subject: RE: Response to Audit Comments - Final Validation Reports and Management Plans, Eastern Creek

Andrew,

Thanks for letting me know- I just sent the reports via 'wetransfer' you should receive an email in about 5 mins.

Regards,

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Wednesday, 2 August 2017 1:23 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Rita Sirianni <RSirianni@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>; 'George Henien' <GHenien@hansenyuncken.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>
Subject: RE: Response to Audit Comments - Final Validation Reports and Management Plans, Eastern Creek

Hi Luke,

I have double checked but don't appear to have received the link to the revised reports.

Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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From: Luke Wilson [mailto:Luke.Wilson@wspt.nsw.gov.au]
Sent: Tuesday, 1 August 2017 1:24 PM
To: Andrew Lau <ALau@jbsg.com.au>
Cc: Rita Sirianni <RSirianni@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>; 'George Henien' <GHenien@hansenyuncken.com.au>; Tim Ireson <tim.ireson@wspt.nsw.gov.au>
Subject: RE: Response to Audit Comments - Final Validation Reports and Management Plans, Eastern Creek

Andrew,

Please find attached response to Auditor comments from WSP. Because of the size of the files I have requested for Colin to forward the updated documents to you today using a link from WSP server, please let me know if you don't receive it.

As per our conversation, I would like to reiterate that EPS (contracted by WSPT) have remediated the site as per the RAP prepared by Coffey's and as per any relevant guidelines, we therefore understand that all know ACM on site has been removed and placed into the containment cells which has been appropriately capped and surveyed.

We hope that this final update is more than sufficient for WSPT to achieve its SAS's for the site and Childcare Centre. We are eager to provide the SAS to the Developer as soon as practical to meet our requirements under the DMA.

Any questions, please call.

Kind Regards,

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Monday, 24 July 2017 1:23 PM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Rita Sirianni <RSirianni@jbsg.com.au>; Andrew Lau <ALau@jbsg.com.au>; Sahani Gunatunge <SGunatunge@jbsg.com.au>
Subject: Audit Comments for Eastern Creek Business Hub Validation Reports and Management Plans

Luke,

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- Western Sydney Parklands Trust Eastern Creek Business Hub – Long-Term Environmental Management Plan, Beggs Road, Rooty Hill, NSW, July 2017 (WSP 2017d).

The abovementioned reports were reviewed and the following comments provided for action by the consultant:

<u>Validation Report (WSP 2017a)</u>

- It is understood that the remediation works were targeted to remediate "high likelihood areas" of concern, as stipulated in the Coffey RAP, with "low likelihood area' outside the scope of work, with any residual risk to be managed during the site development process via an EMP (as detailed below).
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- Section 7.2 –
    - Refer to VENM comments as detailed below in Appendix J.
    - Refer to Section 2.1 of the RAP Addendum to confirm that all specifications were complied.
- Section 7.3 –
    - No discussion on the "low likelihood areas'.
    - No mention of the location of the sewer in Area Q and stockpile 1 area, as per email dated 4/5/2017.
- Figure 2 – For completeness, Figure 2 should include the following:
    - Location of the containment cell.
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    - Show the location of where the VENM material was excavated?
    - Show location of Area S Stockpile (asbestos rubble).
- Appendix B – Drawing 1 of 6
    - The location of the cells is shown in this drawing – however further information regarding the containment cell has not been provided in the report. Further information regarding whether the area was inspected first prior to the construction of the containment cell? Was clearance provided? In particular provide comment on the overlap of Area I and Cell 2.
    - Area B – the report states that no testpits were installed due to significant visible asbestos detected in this area. However, the clearance certificate in Appendix D states that testpitting was undertaken. The consultant is required to confirm the extent of works completed in this area.
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- Appendix B – Drawing 6 of 6 – Testpits borelogs for Area W were not provided in Appendix C.
- Appendix C – The following areas were not included on the survey plans, Area F, Area S and Area U.
- Appendix D
    - During the clearance of Area G / Stockpile 1; Stockpiled Waste – Area S & T; and Haul Roads – works were undertaken by an unlicensed assessor. Provide justification that the person undertaking the works was competent to assess for asbestos.
    - No site plan provided for works associated with the Stockpile Waste – Area S and T.
    - What is the extent of the pit and depth of fill in the pit between Area B and K?
    - Was the bonded ACM disposed offsite or included in the containment cell?
    - A review of the air monitoring dates indicate that they do not all correlate with fieldwork dates – review and revise, where necessary.
- Appendix F – Air monitoring results:
    - Fieldworks were completed in February / March, however air monitoring results were only available for 13/2 and then April. Review and confirm that all air monitoring results have been provided.
- Appendix G – A review of the truck load summary with Table 5.2, shows discrepancies including:
    - Material sourced from Area L (2/6/17); Clay stockpile from excavation of Cell 1 – where did this material go?
    - Area L (May) with a volume of 351 m3 – where did this material go?
    - Referring to Table 5.2 – Does the volume estimated in Area A South include the volumes for Haul Road South A (as detailed in truck movement loads dated 16 and 17/5/17).
    - Table 5.2 – Area L volume does not match with the volumes tabulated in the truck load estimates.
    - Table 5.2 – Stockpile 1 (May) – The volume is lower than what was provided in the truck load summary. This was estimated at 2158 m^3, review and confirm.

    - Based on the above discrepancies, this means that there is an additional outstanding volume of 3640 m^3 in Cell 1, compared to what was reported by the consultant – review and confirm.
    - Table 5.3 – The total quantity removed for Area A South has been estimated at 1,196 m^3, however a review of the truck load summaries indicates that this is actually 1664 m^3 – review and confirm.
- Appendix I – A review of the survey drawings notes the following:
    - Cell 1 – The volume excavated was 11,350.699 – where did this material go? Was the material clean and free of ACM?
    - Cell 2 – The volume excavated from Cell 2 was not documented – was this area already an open excavation?
    - Discrepancies in survey cell volume, refer to Table 5.2 comments above.
- Appendix J –
    - More explanation is required as to the discrepancy on the volume of VENM excavated (17,000 m^3) and volume surveyed (12,241 m^3).
    - Show the location of the source of VENM on Figure 2.
    - Provide material tracking documentation of the VENM material.
    - Describe the soil profile of the material excavated in this area i.e, was there any fill / topsoil overlying the natural soils? If so, where was this material placed?
    - How was the material screened for asbestos?
    - Where was the VENM material temporarily stored prior to use within the containment cell? Confirm if environmental staff were present during these works or only during the inspection of the stockpile?
- There are no records for offsite disposal. The consultant is required to confirm that no materials were disposed offsite. If materials were disposed offsite, copies of waste documentation records are required to be provided in the report.

<u>Addendum to Validation Report – Childcare Centre (WSP 2017b)</u>

- Section 1 and Table 2.1 – the exact area occupying the proposed childcare centre needs to be shown on a detailed survey plan, showing coordinates at all site boundaries.
- Section 2.4 –
    - A summary of remediation works completed across the wider site has been provided in the report. However, the extent of contamination in the immediate vicinity of the site (i.e, the proposed childcare centre) has not been discussed. It is understood that no ACM or fill was encountered within the proposed site, however consideration to the potential for adjacent contamination to be present should be considered.
    - Based on a review of WSP 2017a, it is understood that Area S is located adjacent to the proposed childcare centre. A summary of the site conditions indicates that fly-tipping was located adjacent to Area S, and the presence of an asbestos rubble west of Area S. The consultant will be required to confirm these areas in relation to the proposed childcare centre.
- Table 3.1 –
    - A description of soil conditions has been summarised in the table.
    - Confirm the total depth of investigation.
    - Borelogs / field notes were not provided in the report.
- Table 4.3 – The asbestos criteria nominated in the report is not protective of childcare centre. HSL-D criteria is not considered an appropriate criterion for landuse as a childcare centre.
- Figure 2 –
    - Add the other markers as shown on the map in the legend.
    - Show Area S on the map.
    - Present the site playout of the child care centre as per the site plan provided in Figure 2 of WSP 2017a
- Figure 3 – Surveyed coordinates of each boundary of the proposed childcare centre is required to be provided to the auditor.

Though not clear from the title of the documents, it appears that two Environmental Management Plans (EMPs) have been prepared namely relating to:

- Management of risk during future site development / construction works and assumed specific to a development / construction workforce; and
- Management of long term risks subsequent to site development.

Comments for each EMP are provided as follows:

Development / Construction Works EMP (WSP 2017c)

- The scope of the EMP should be made clear in the document title to prevent confusion;
- There is no basis within the document to demonstrate how the document will be made legally enforceable;
- The document should contain a description of the relationship of the document with existing occupational guidance for control of asbestos risks to site workers. This should include applicability of asbestos removal licensing conditions as should apply to future earthworks contractors as engaged to the site;
- The description of asbestos impacts outside the capped area of the site as an 'unexpected find' is misleading and should be revised. As evident from the Site Validation Report, no attempt has been made to completely remediate the site of asbestos, and asbestos is anticipated underlying the extent of site excavations and laterally away from the location of site excavations;
- The description of 'Unexpected Finds' should be clarified to include other contaminants apart from asbestos;
- The EMP requires to be readily and understood by a range of development workers whom will not necessarily be familiar with typical environmental assessment / remediation / validation works and methods. The descriptions here should be substantially simplified and make clear the known limitations of the remedial works completed. Clear statements and references to figures should be provided;
- There is no guidance in the EMP for monitoring that can be undertaken to assess whether exposures occur during development works. This should at least address asbestos;
- There is no guidance in the EMP for the types of personal protective equipment, engineered controls or otherwise that can be applied to mitigate the risk of exposure to site contaminants. This should at least address asbestos.
- Guidance should be provided to potential waste classifications of surplus soils as may be generated during future site works, or otherwise potential contaminants to be assessed in classifying wastes; and
- No provision has been made for review or revision of the EMP, as may be required where site conditions are substantially different from those described in the EMP.

Long Term EMP (WSP 2017d)

- The document is observed to be restricted to the containment cells. However, asbestos is known to be present in other areas of the site (i.e. underlying the extent of excavations undertaken to source asbestos impacted materials to be place into the containment cells). How are these other asbestos impacted areas proposed to be notified and/or managed?
- The document is considered overly long and verbose for what is a straightforward scope. Consideration should be given to simplification of a number of EMP sections. E.g, Section 2.2 to 2.6 could simply be restricted to a description of the location, construction and contents of the containment cells;
- Further to the first comment, in Section 2.6 it is unclear how moderate risks from unexpected finds outside of the extent of the containment cells is relevant to the scope of the EMP. If these moderate risks are present, then why is the scope of the long term EMP being restricted to the containment cells only?
- Consistent with the other EMP, the means of legal enforceability of the EMP needs to be advised / documented;
- With respect to Section 3, the extent of the site needs to be clearly defined, is it restricted to the containment cells, or the whole of the site?
- Further detail is required on whom 'Parklands Rangers' and 'Facilities Maintenance Coordinator' refer to;
- Provision should be made within the EMP for relevant persons as referred to as 'Parklands Rangers' and 'Facilities Maintenance Coordinator' to confirm that they have read and understood the EMP, agree to undertake the relevant obligations within the EMP and confirm that they are readily competent to discharge the same obligations; and

- Detail should be provided in the EMP for good / anticipated practices with respect to the maintenance of the validated condition of the cap (i.e. prevention of erosion, physical damage by vehicle tracking etc).

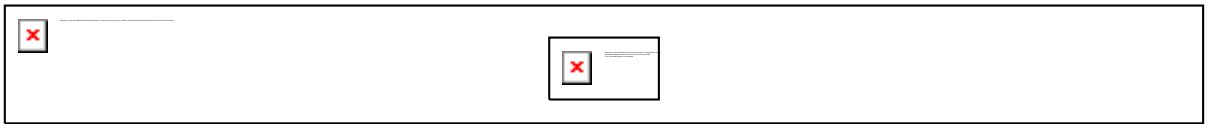
Regards,

Andrew

Andrew Lau | Managing Director, Accredited Auditor | JBS&G
Sydney | Melbourne | Adelaide | Perth | Brisbane
Level 1, 50 Margaret Street Sydney NSW 2000
T: 02 8245 0300 | M: 0412 512 614 | www.jbsg.com.au
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Rita Sirianni

From: WeTransfer <noreply@wetransfer.com>
Sent: Wednesday, 2 August 2017 1:48 PM
To: Rita Sirianni
Subject: luke.wilson@wspt.nsw.gov.au sent you files via WeTransfer



luke.wilson@wspt.nsw.gov.au
sent you some files

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RE: Response to Audit Comments - Final Validation Reports and Management Plans, Eastern Creek

Download link

https://wetransfer.com/downloads/45446cc5be936a25a312dd18b575fdd820170802034126/18f4996c201ec7e6e0fe2e7e62fc04ba20170802034126/b735fa

3 files

2270540A-CLM-REP-001 RevF.pdf
2270540A-CLM-REP-003 RevF.pdf
2270540A-CLM-REP-002 RevD.pdf

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Rita Sirianni

From: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Sent: Friday, 4 August 2017 10:09 AM
To: Andrew Lau
Cc: Rita Sirianni
Subject: RE: ECBH - audit comments on revised reports

Andrew,

Thanks for letting me know, I've spoken with Tim and we can accept this - ill have WSP update ASAP.

Regarding the aqua /hatched in figure 4, I assume you are referring to the lots at the southern corner of the site? The hatch is simply denoting that they are private - which is just a pass over from our subdivision plan which was used by the Contractors surveyor. Irrelevant and therefore can be removed if you like to avoid any confusion? Let me know asap please.

Regards,

Luke Wilson | Project Manager
Western Sydney Parklands Trusts
Mob: 0400 506 926

-----Original Message-----
From: Andrew Lau [mailto:ALau@jbsg.com.au]
Sent: Friday, 4 August 2017 9:44 AM
To: Luke Wilson <Luke.Wilson@wspt.nsw.gov.au>
Cc: Andrew Lau <ALau@jbsg.com.au>; Rita Sirianni <RSirianni@jbsg.com.au>
Subject: ECBH - audit comments on revised reports

Luke,

I have reviewed the responses and revised reports provided for my review. Generally the previous comments have been largely addressed, however, the following two comments need to be addressed:

- I do not accept that the EMP relates to the development phase only as it contains equally relevant provisions to deal with asbestos and unexpected finds during the operational phase where ground disturbance activities may occur into the future. The title and various parts of the EMP where attempts are made to limit the EMP to the development phase only must be revised to reflect this before the audit can be completed and the EMP must apply to the entire site (the LTEMP is fine to apply to only the containment cell area)

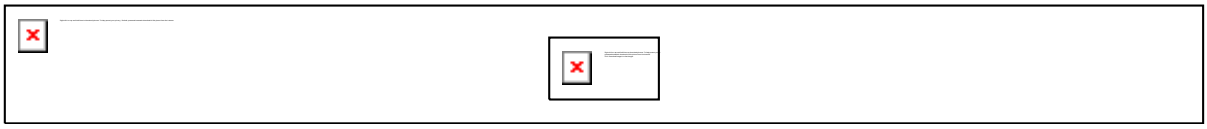
- Figure 4 shows a aqua / blue hatched area – the legend does not indicate what this relates to? Based on the legend it appears that this relates to 'suspected asbestos impact' which was not known in the draft version of the report.

Regards
Andrew

Andrew Lau
JBS&G
0412 512 614
www.jbsg.com.au

Rita Sirianni

From: WeTransfer <noreply@wetransfer.com>
Sent: Tuesday, 8 August 2017 1:23 PM
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Please find attached updated
- Validation Report with amended surveyor diagrams blotting out the blue hashed and green areas; and -EMP renamed to "Site Environmental Management Plan" with references to development phase amended to include ground disturbance during operational phase. The EMP also has the amended survey diagrams (without blue hashing etc) as well.

Download link
https://wetransfer.com/downloads/f9af70dae7712ac97902072687a75de420170808024305/d005b0e8315bdd6395aebe6f81073ff720170808024305/ce79ec

1 file

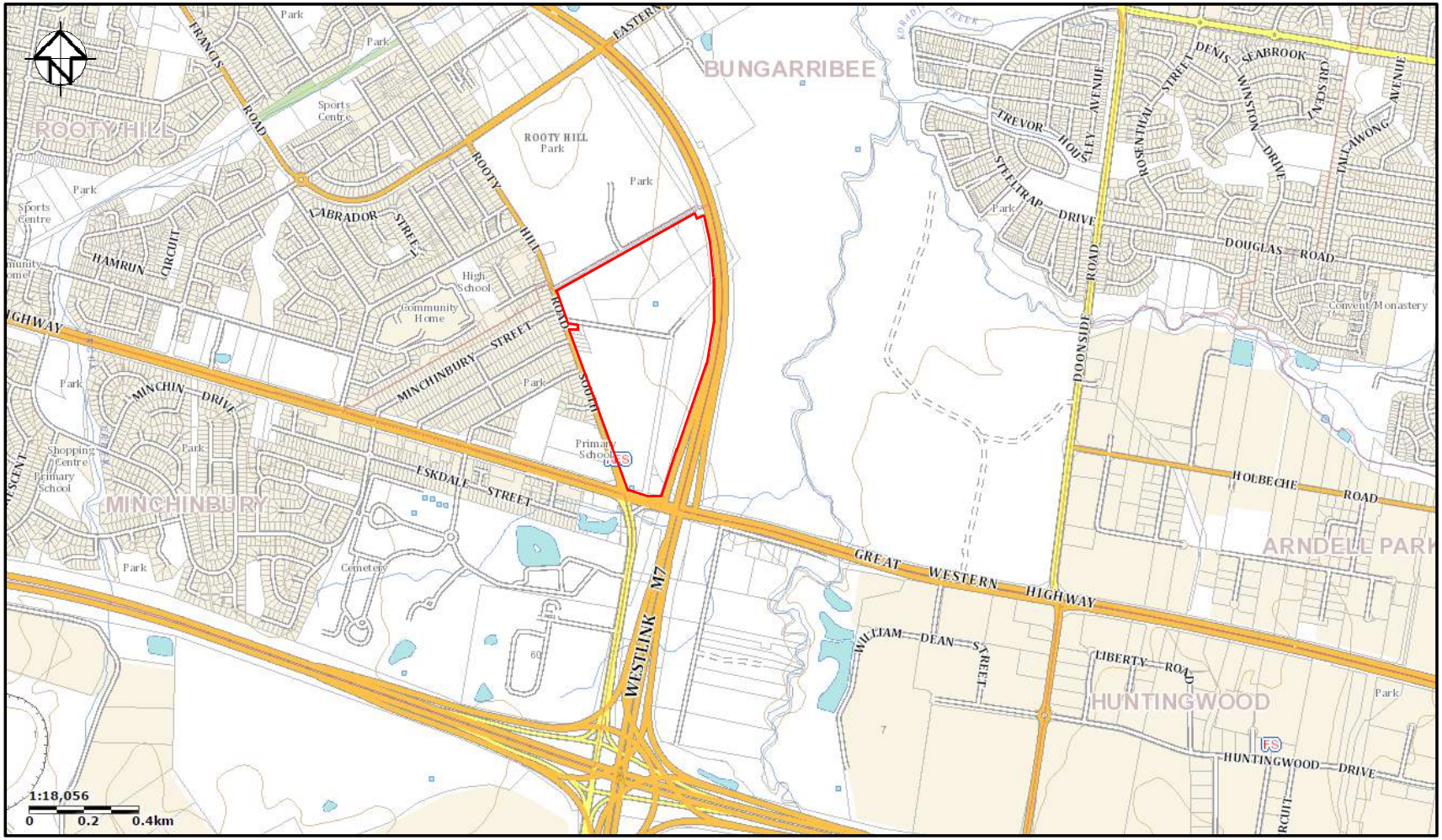
129556784.zip

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Appendix C Site Plans

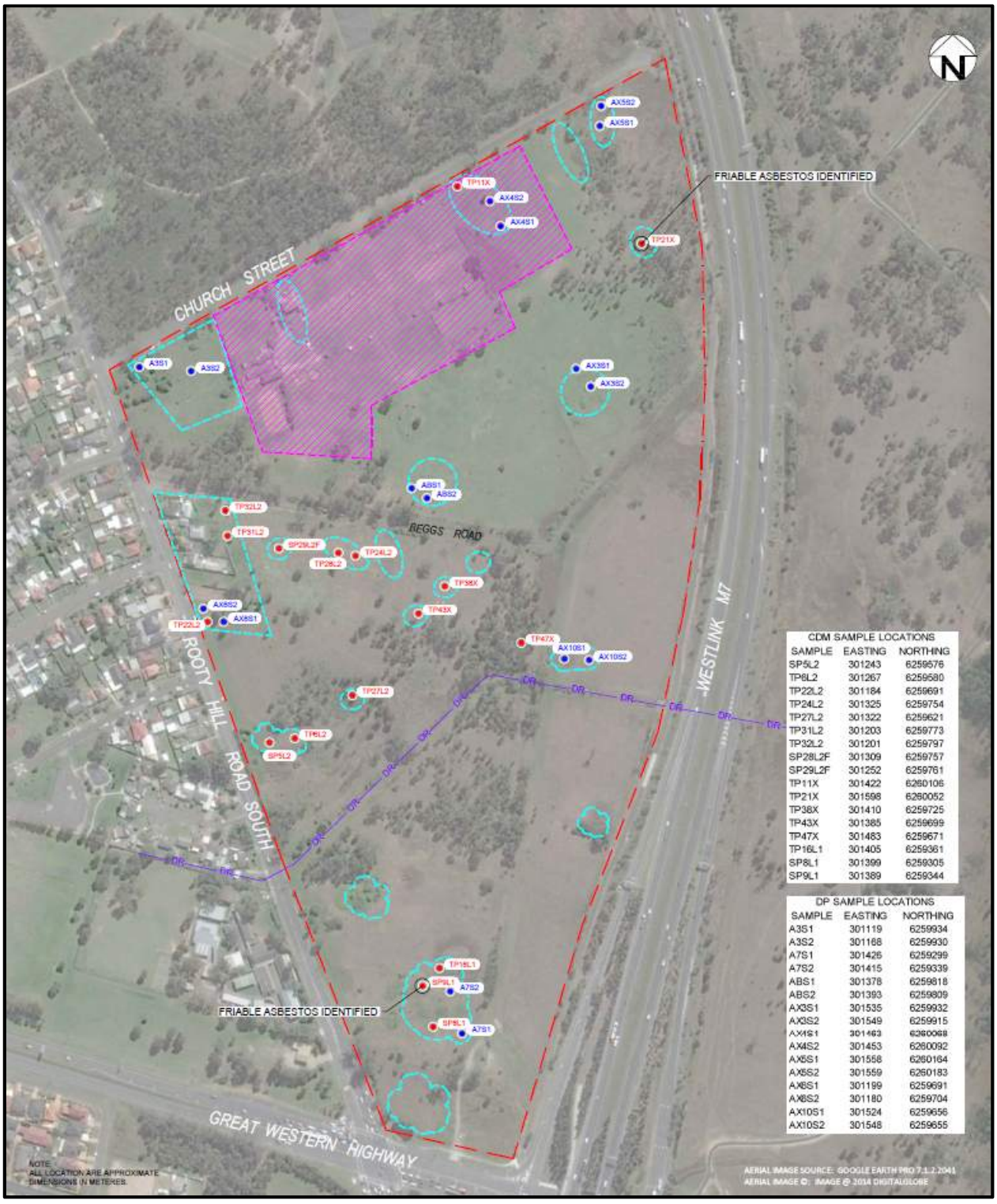


Base Map Source – Six Maps, 2017

LEGEND

Site boundary

Figure 1 – Site Location Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



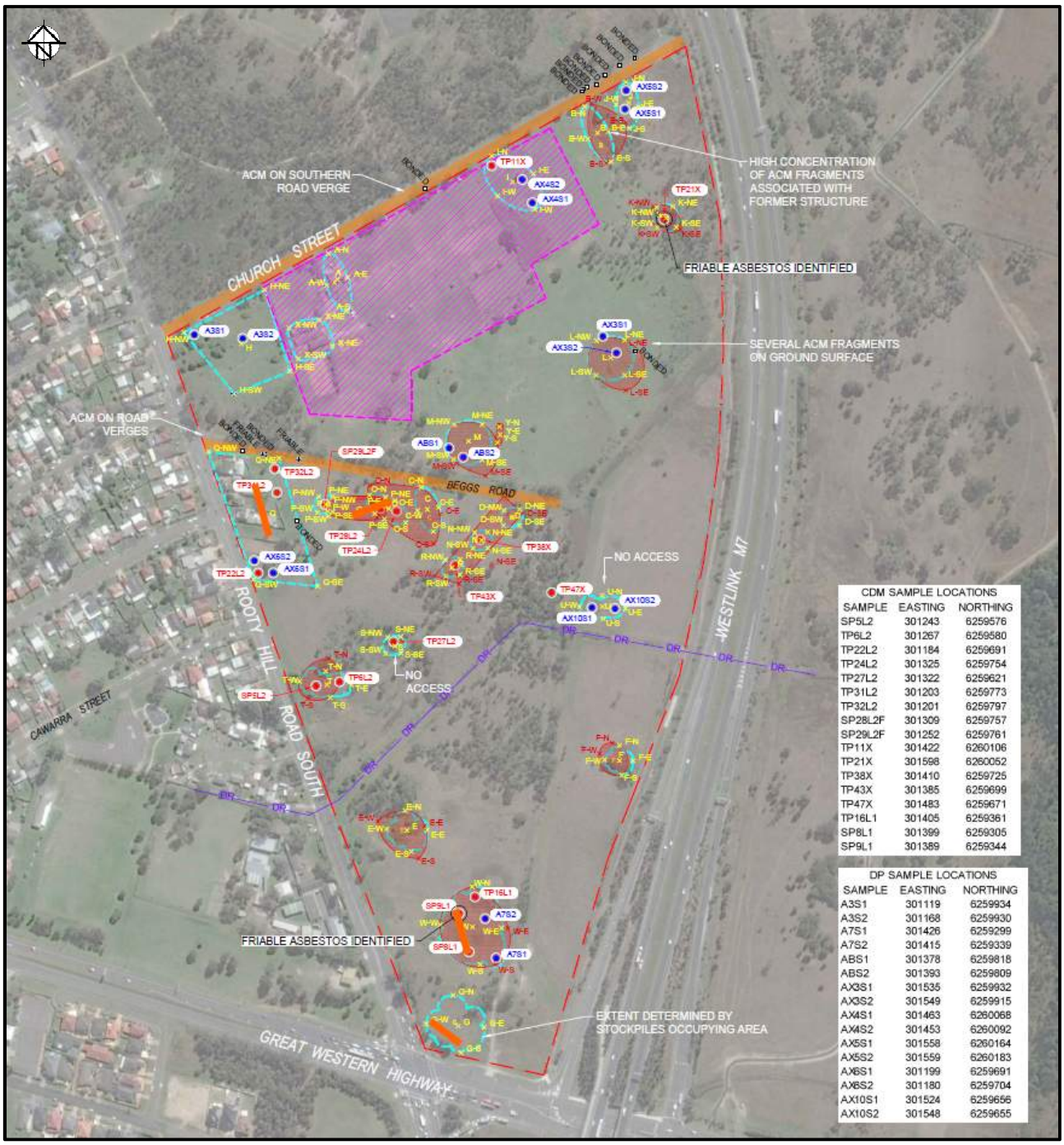
Base Map Source – RAP, Coffey (2015)

LEGEND

Approximate Site Boundary

High Likelihood Zones (Coffey, 2015)

Figure 2 – Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

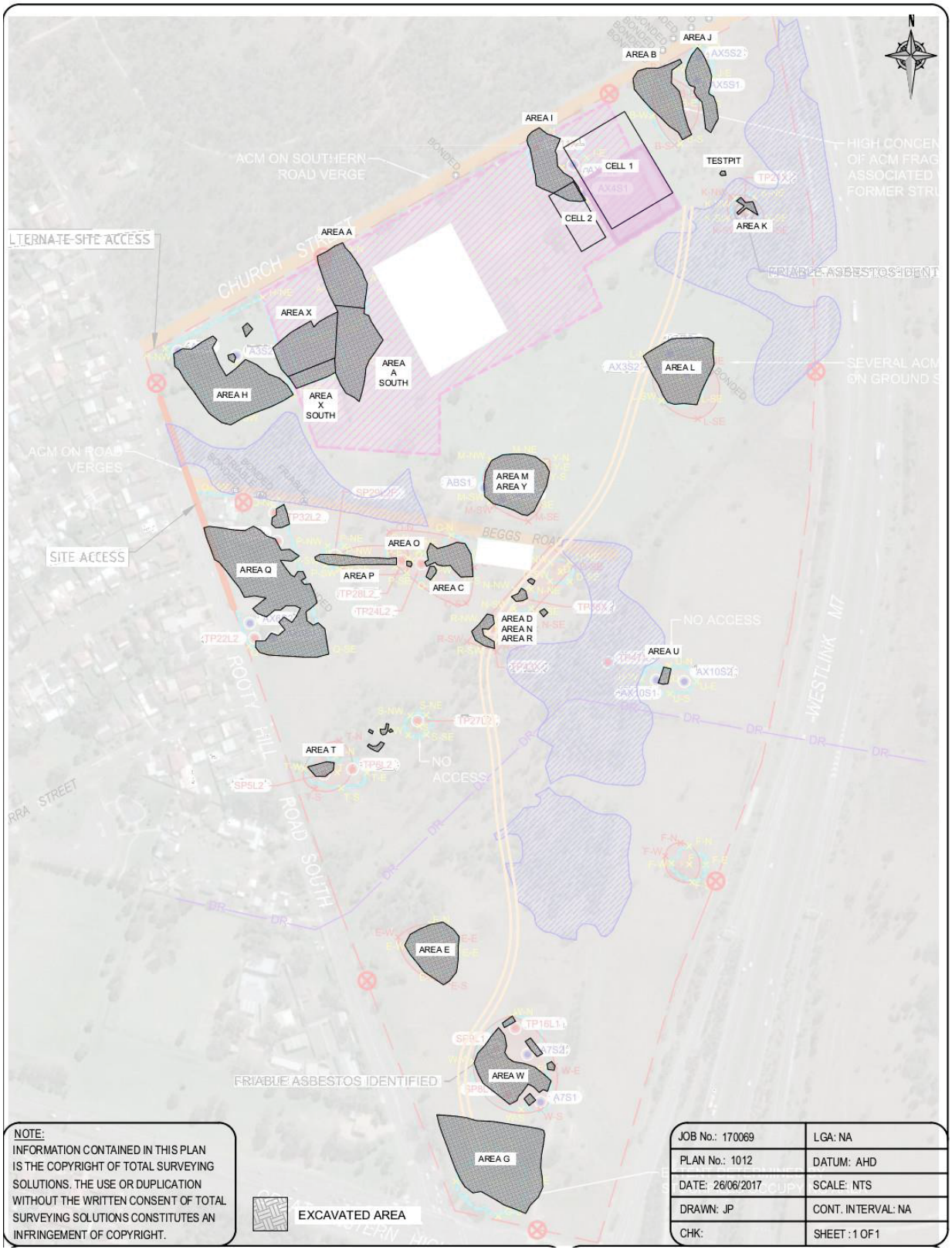


Base Map Source – Coffey, 2016, Suspected and actual of ACM occurrences

Figure 3 – Updated Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

LEGEND

- Approximate Site Boundary
- Suspected/Proposed Asbestos Impact (Coffey, 2016)
- Revised Suspected Areas of ACM Occurrences (Coffey, 2016)



Base Map Source – Total Surveying Solutions, 2017, Final ACM Areas Plan 1012.

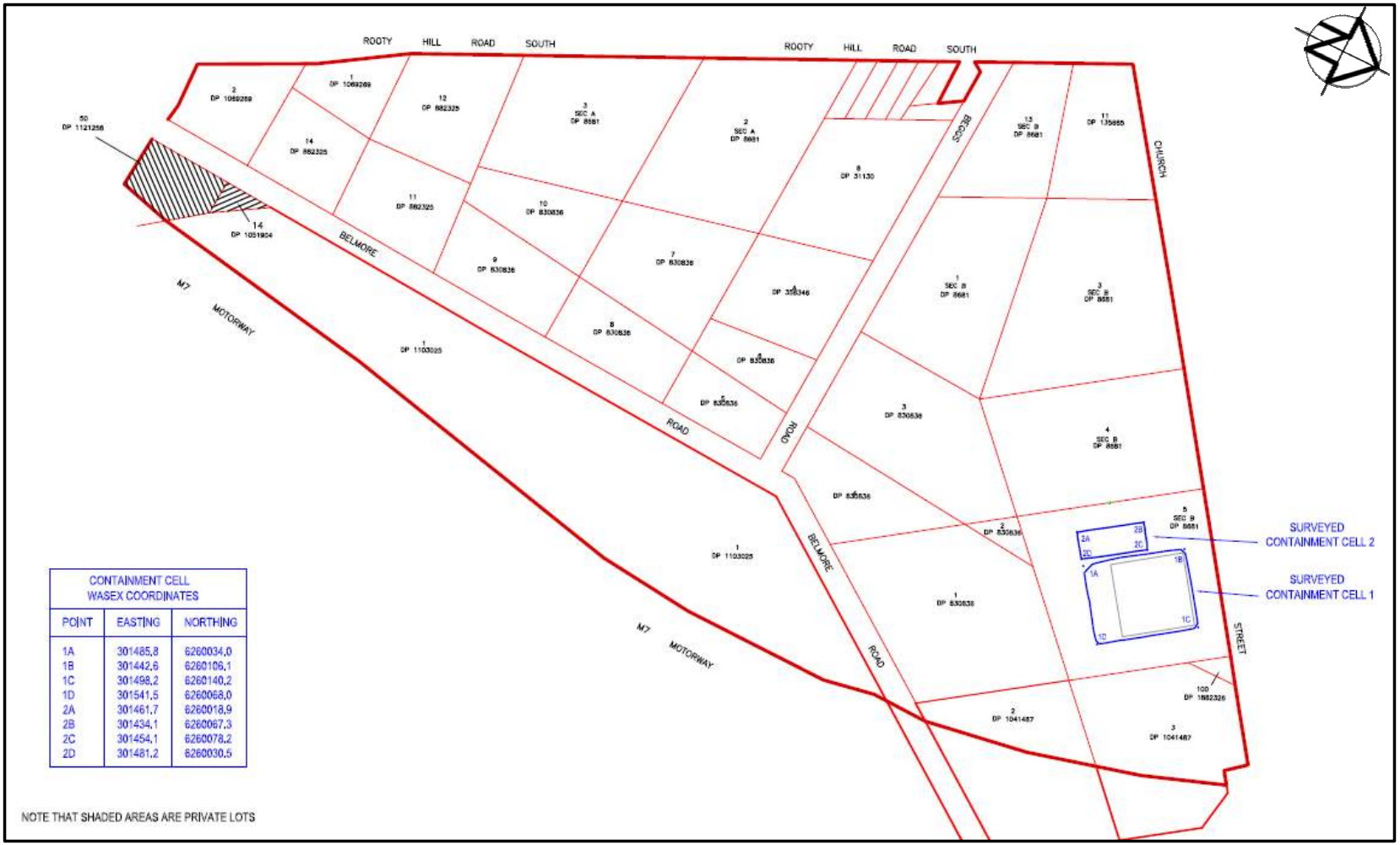
LEGEND

Approximate Site Boundary

Suspected/Proposed Asbestos Impact (Coffey, 2016)

Excavated Areas

Figure 4 – Excavated Areas and Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

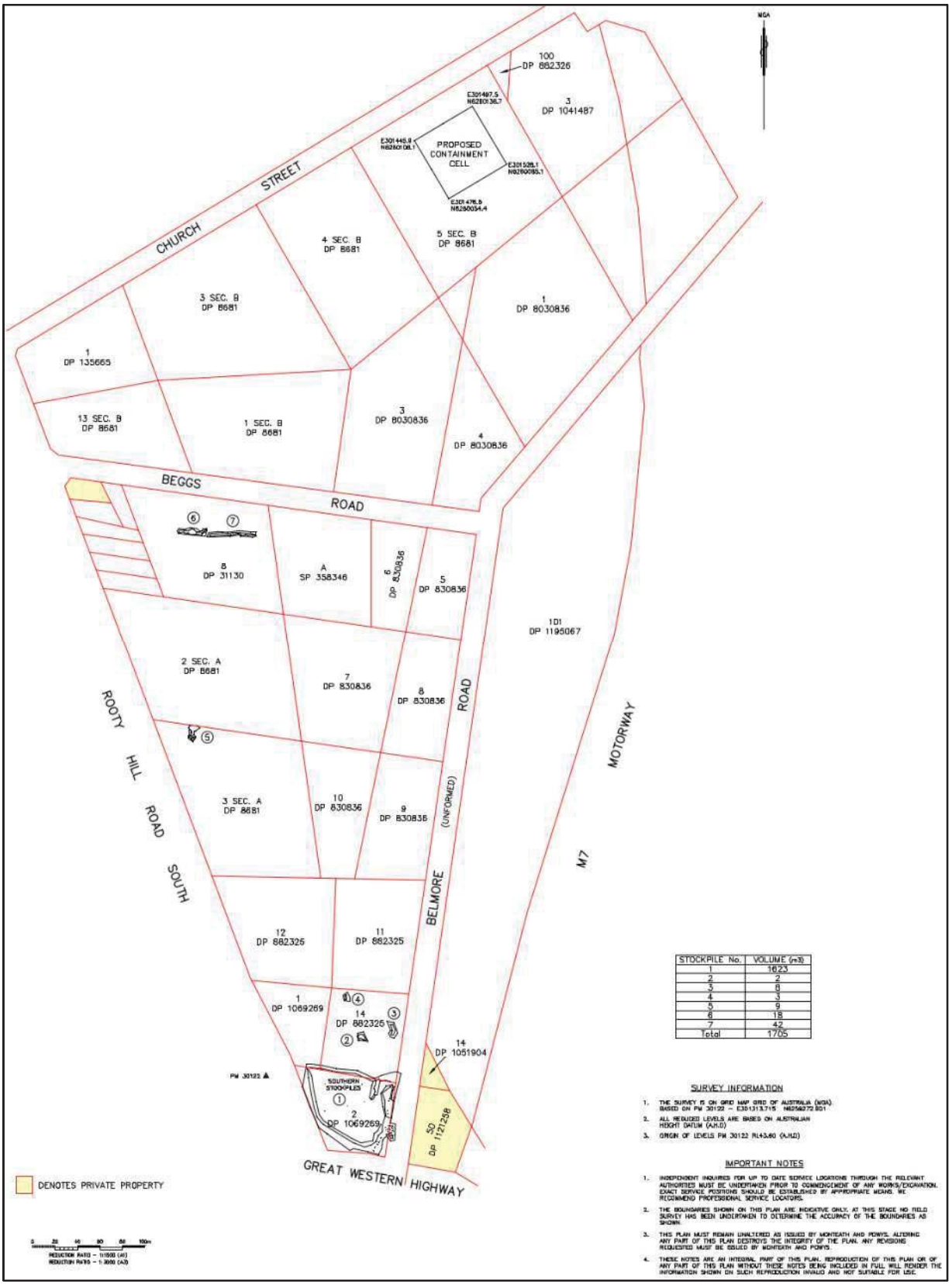


Base Map Source – Total Survey Solutions, containment Cell Overlayed With Buildings, Plan No. 1014, 2017

LEGEND

Site boundary

Figure 4 – Site Survey Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



Base Map Source – Monteath & Powys, 2017, Stockpile Survey, Ref No:16/0419.

Figure 6 – Excavated Areas and Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

N

AREA J

AREA B

AX5S2

AX5S1

J-N

J-E

B-W

B-S

AREA I

CELL 1

CELL 2

AX4S1

TESTPIT

TP21X

AREA K

K-NW

K-NE

K-SW

K-SE

HIGH C
OF ACM
ASSOC
FORME

FRIABLE ASBESTOS

EXCAVATED AREA

BONDED

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	PLAN No.: 1012 / DATUM: AHD
CLIENT: ENVIROPACIFIC	DATE: 26/06/2017 / SCALE: 1:1000
PROJECT: ROOTY HILL	DRAWN: JP / CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK: / SHEET :1 OF 6

ATE SITE ACCESS

CHURCH STREET

AREA A

AREA A SOUTH

AREA X

AREA X SOUTH

AREA H

EXCAVATED AREA

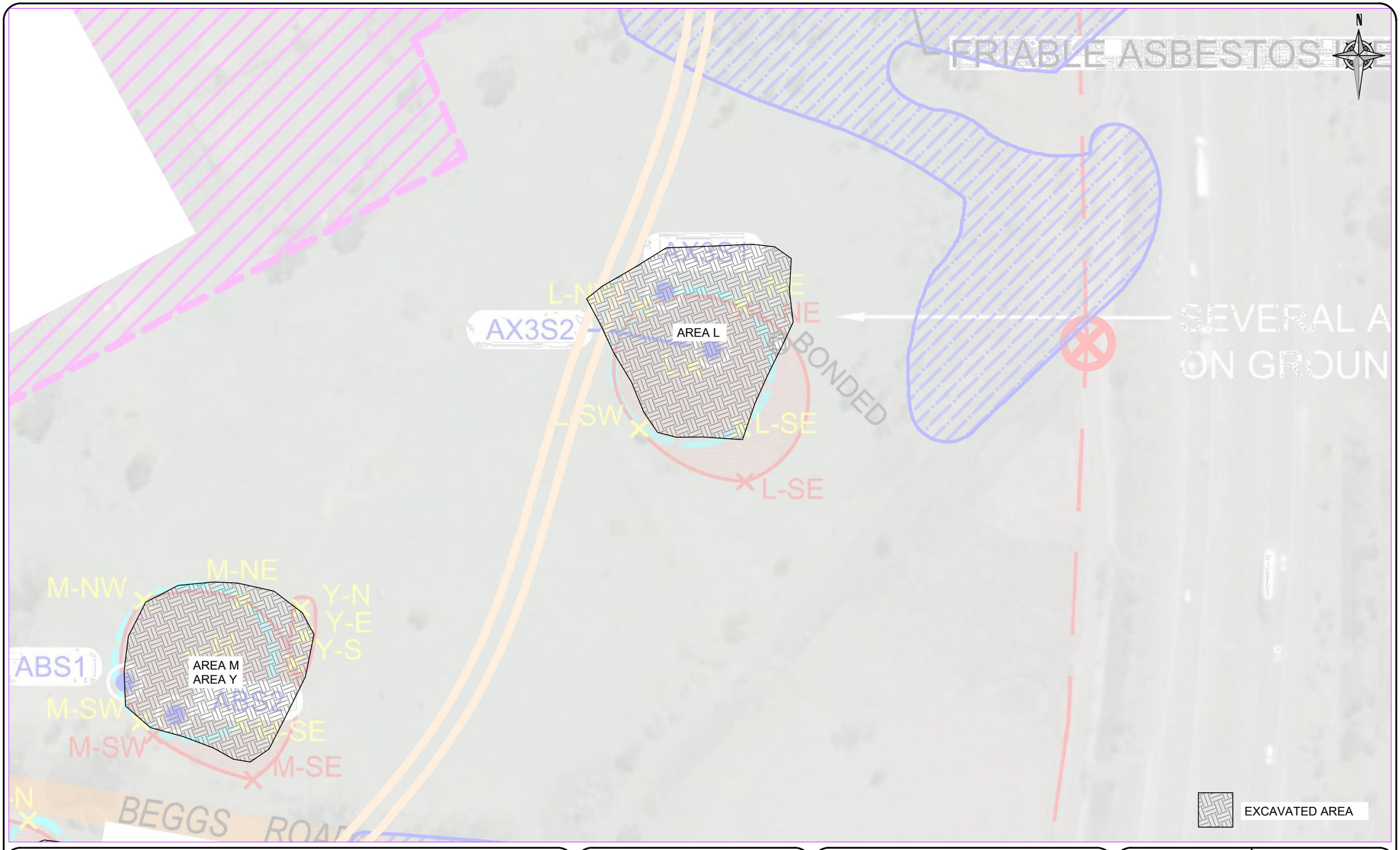
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	PLAN No.: 1012	DATUM: AHD
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PROJECT:	ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS:	CHURCH ST, ROOTY HILL	CHK:	SHEET :3 OF 6

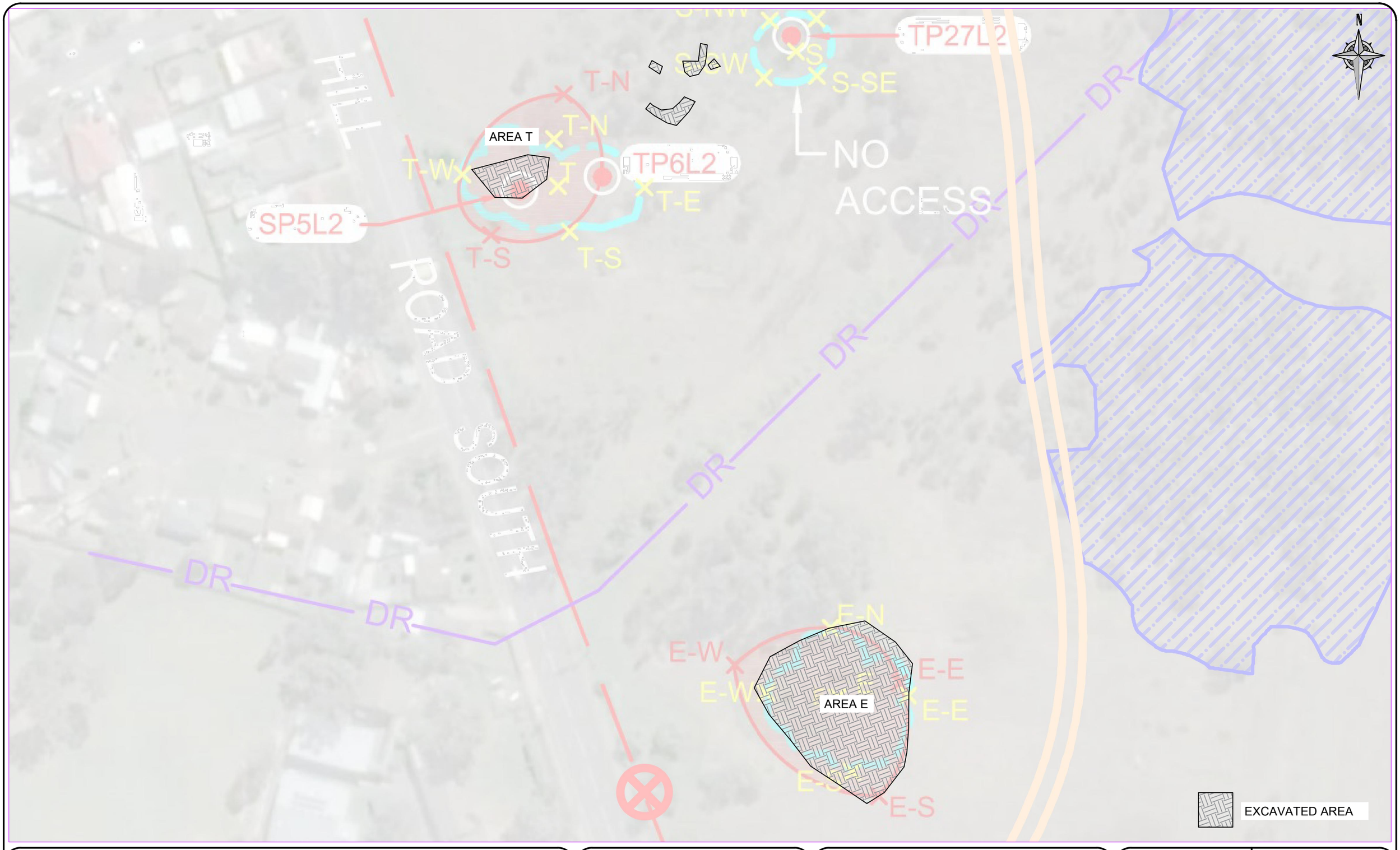


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PROJECT: ROOTY HILL	DRAWN: JP
ADDRESS: CHURCH ST, ROOTY HILL	CHK:

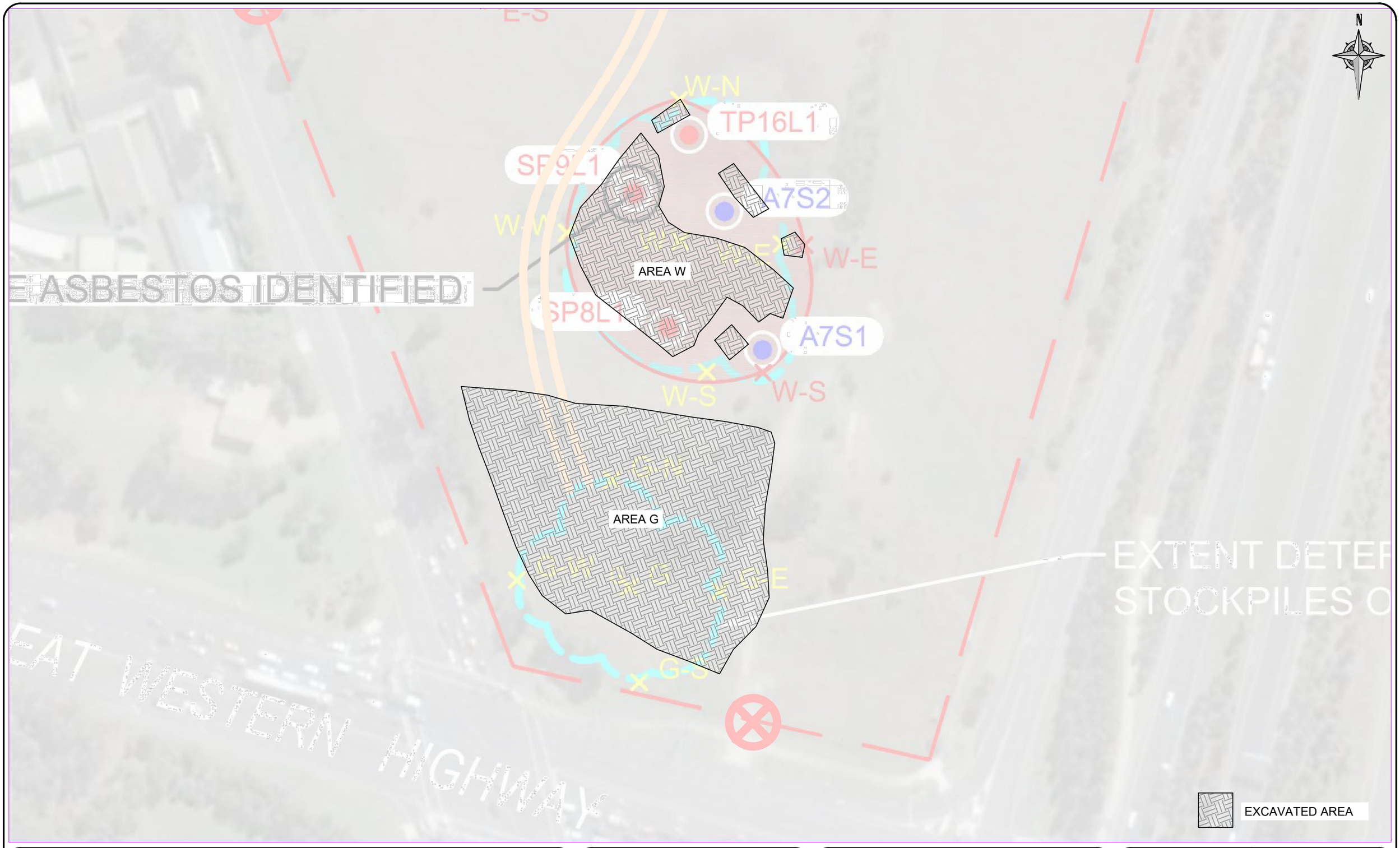
LGA: NA	
DATUM: AHD	
SCALE: 1:1000	
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PROJECT:	ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS:	CHURCH ST, ROOTY HILL	CHK:	SHEET :5 OF 6

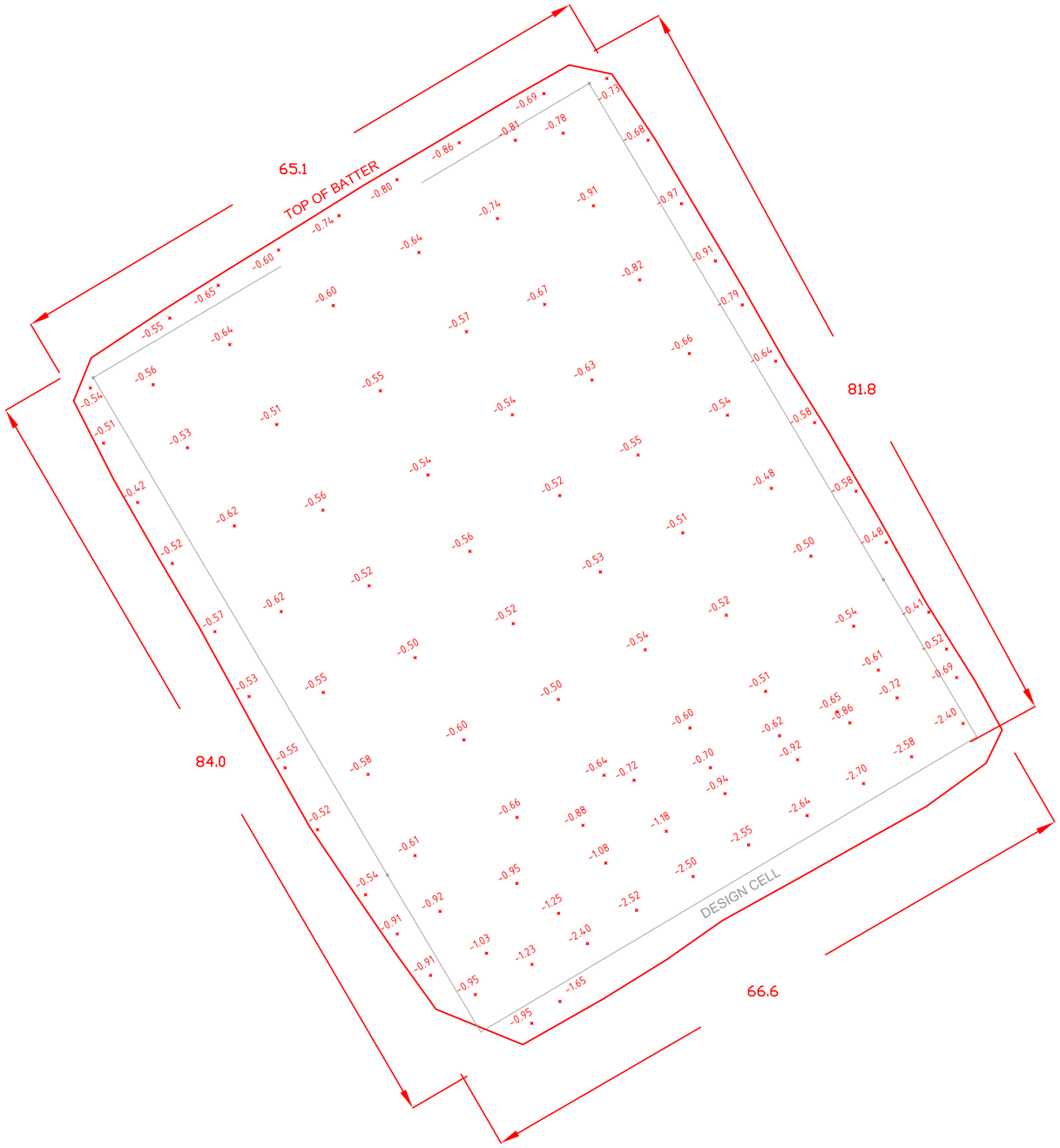


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CLIENT: ENVIROPACIFIC	DATE: 26/06/2017	SCALE: 1:1000
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK:	SHEET :6 OF 6

PLAN VIEW



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

VOLUME OF EXCAVATED MATERIAL TO GROUND LEVEL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-11350.699
Total fill	0.000
Total balance	-11350.699

ie excess of cut over fill 11350.699m3

VOLUME OF EXCAVATED MATERIAL TO CAPPING LAYER

Volumes from tin "tin Exist Ground Level down 200" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-10230.285
Total fill	0.000
Total balance	-10230.285

ie excess of cut over fill 10230.285m3

VOLUME OF FILLED MATERIAL

Volumes from tin "tin Surveyed Cell Floor Pick Up Extension 170508" to tin "tin Surveyed Cell Fill Material 170522 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	- 0.000
Total fill	7210.464
Total balance	- 0.000

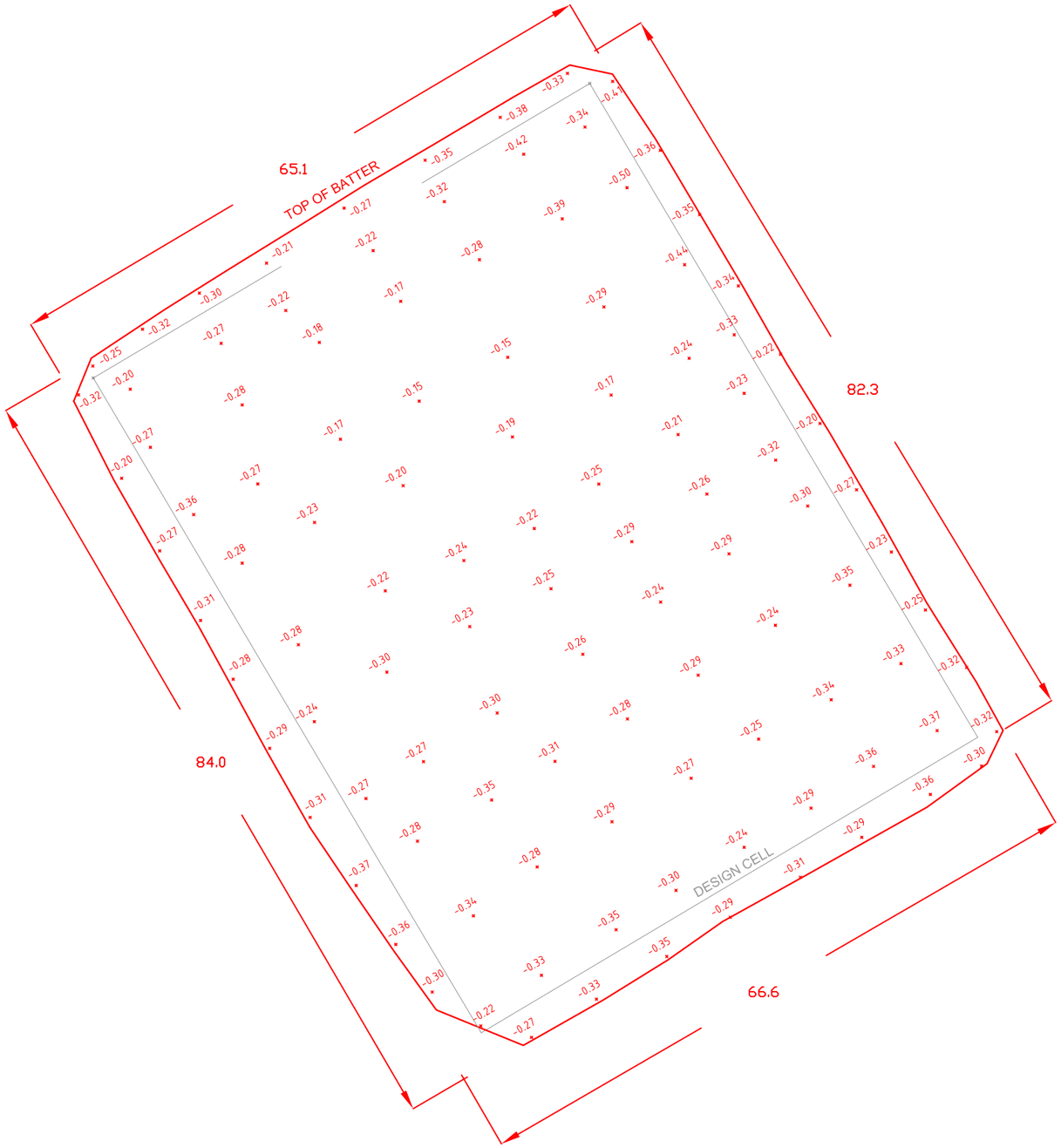
ie excess of fill over cut 7210.464m3

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DRAWING: Volume of Material in Containment Cell	JOB No.: 170069	LGA:
	PLAN No.: 1010	DATUM: N/A
CLIENT: EnviroPacific	DATE: 22/05/17	SCALE: NTS
PROJECT: Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS: Church St, Rooty Hill	CHK:	SHEET :1 OF 1

PLAN VIEW



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

VOLUME OF EXCAVATED MATERIAL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-11350.699
Total fill	0.000
Total balance	-11350.699
ie excess of cut over fill	11350.699m3

VOLUME OF FILLED MATERIAL

Volumes from tin "tin Surveyed Cell Floor Pick Up Extension 170508" to tin "tin Surveyed Cell Fill Material 170602 - (with no plan polygon)

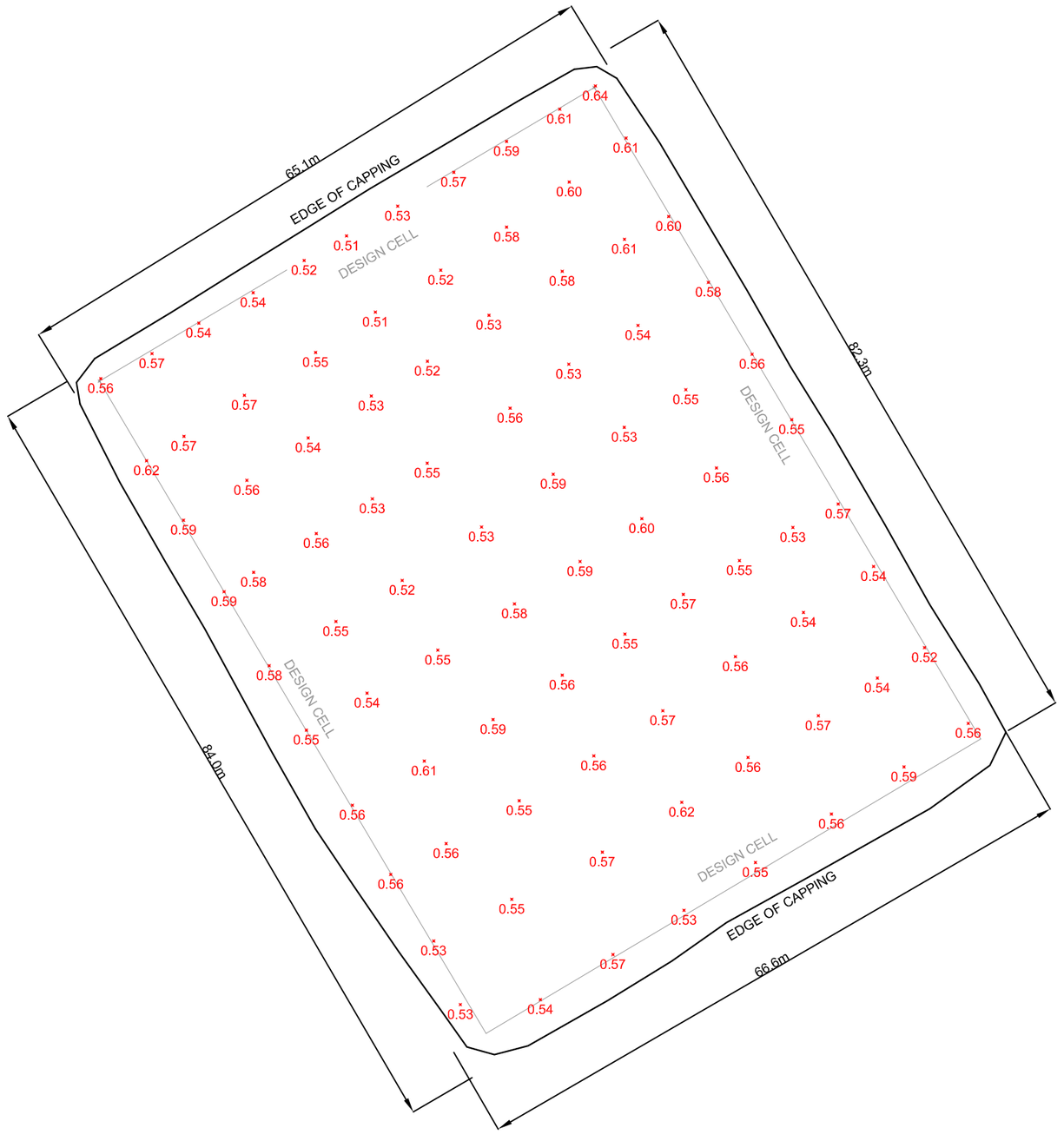
cut volumes are negative
fill volumes are positive

Total cut	- 0.000
Total fill	9813.612
Total balance	- 0.000
ie excess of fill over cut	9813.612m3

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DRAWING: Volume of Material in Containment Cell		JOB No.: 170069	LGA:
		PLAN No.: 1011	DATUM: N/A
CLIENT:	EnviroPacific	DATE: 02/06/17	SCALE: NTS
PROJECT:	Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS:	Church St, Rooty Hill	CHK:	SHEET :1 OF 1



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

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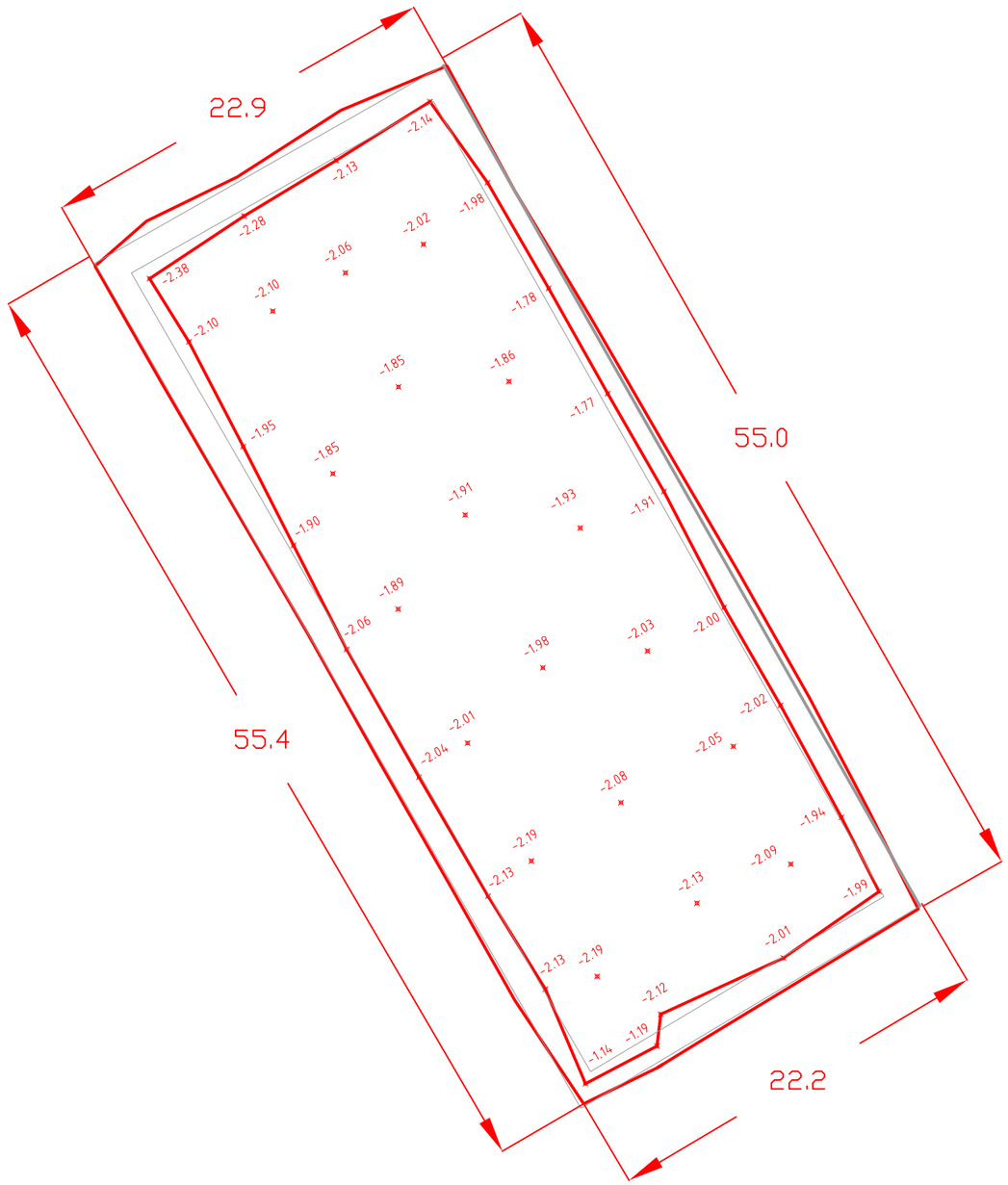
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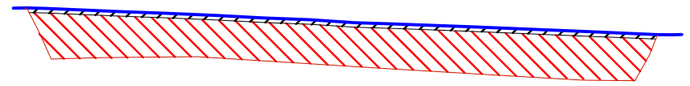
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DRAWING: CELL ONE CAPPING CONFORMANCE	JOB No.: 170069	LGA:
	PLAN No.: 1016	DATUM: N/A
CLIENT: ENVIROPACIFIC	DATE: 27/06/17	SCALE: NTS
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH STREET, ROOTY HILL	CHK:	SHEET :1 OF 1

PLAN VIEW



SECTION VIEW



Existing Ground Level
Surveyed Excavated Cell
Top of Capping Material
Capping Material
Asbestos Imported Soils

Note: Capping material has minimum 0.200m thickness above Asbestos Imported Soils.
Asbestos Imported Soils volume of 2,011m3 leaves Top of Capping Material 0.200m Below Existing Ground Level.

VOLUME OF EXCAVATED MATERIAL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Second Cell Floor Pick Up 170606" - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-2259.616
Total fill	0.000
Total balance	-2259.616
ie excess of cut over fill	2259.616

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DRAWING: Containment Cell Volume of Material Removed	JOB No.: 170069	LGA:
	PLAN No.: 1006A	DATUM: N/A
CLIENT: EnviroPacific	DATE: 09/03/17	SCALE: NTS
PROJECT: Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS: Church St, Rooty Hill	CHK:	SHEET :1 OF 1



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF IMPORTED FILL TO TOP OF CAPPING LAYER

TOTAL SURVEYING SOLUTIONS

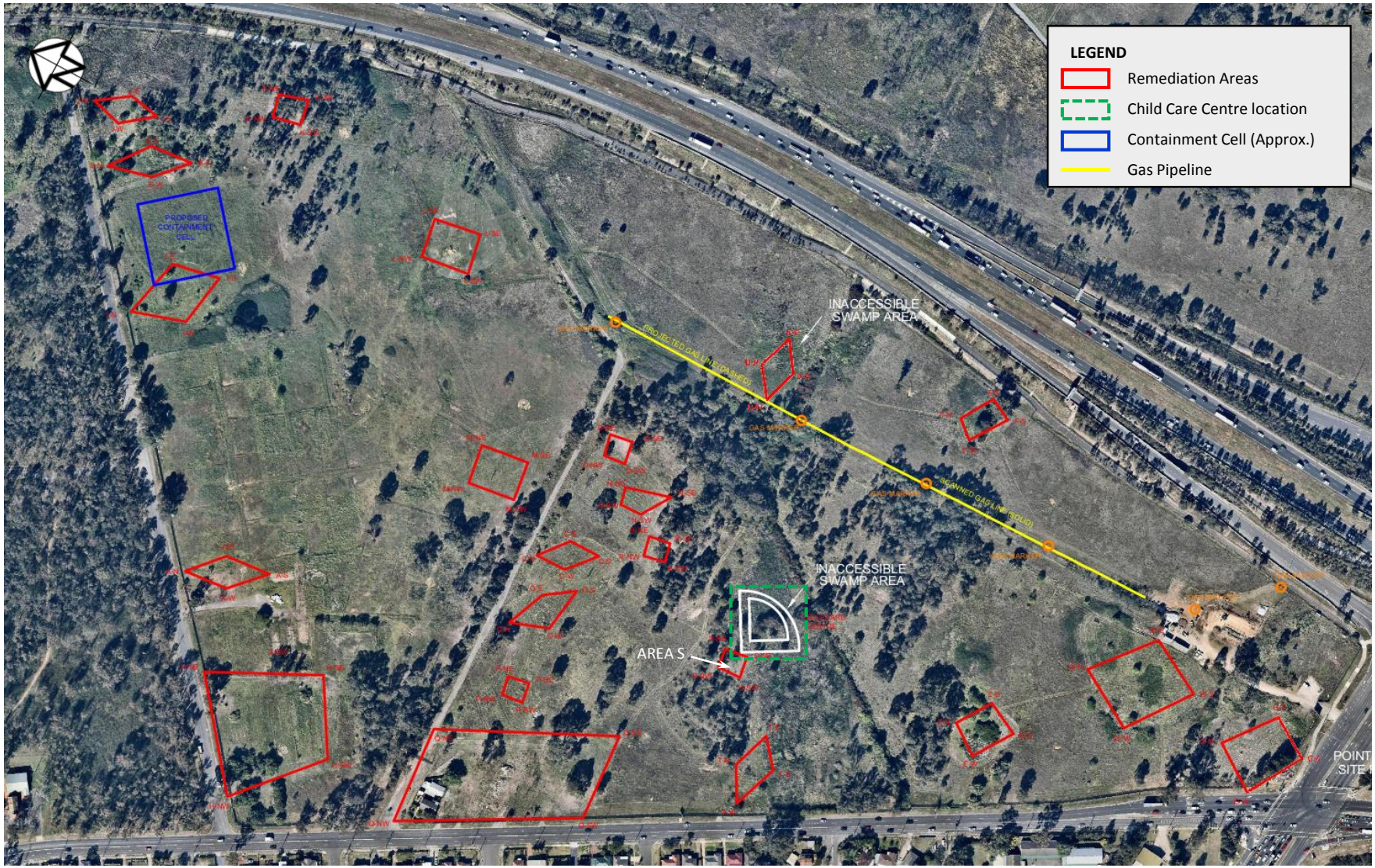
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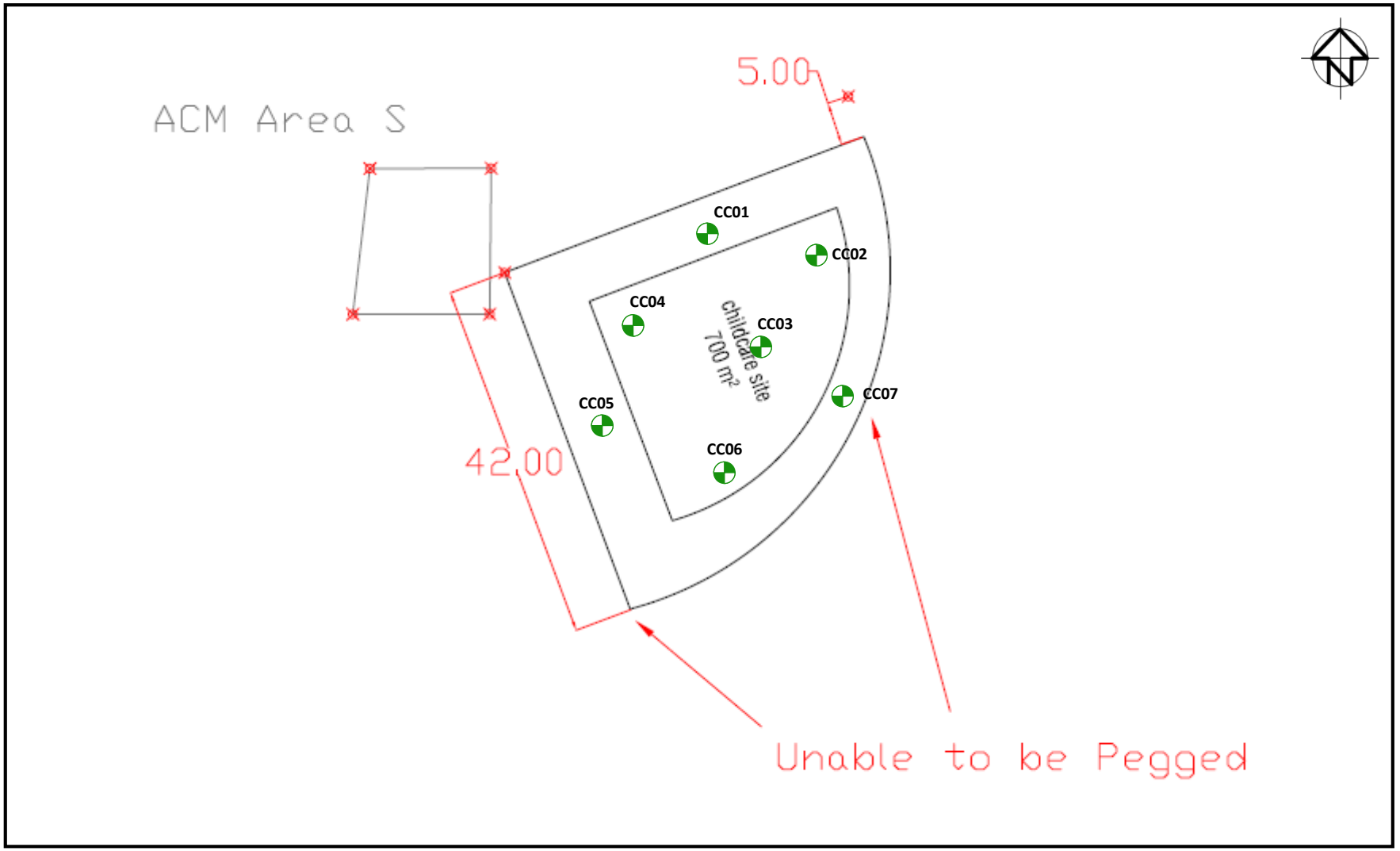
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DRAWING: CELL TWO CAPPING CONFORMANCE		JOB No.: 170069	LGA:
		PLAN No.: 1019	DATUM: N/A
CLIENT: ENVIROPACIFIC		DATE: 03/07/17	SCALE: NTS
PROJECT: ROOTY HILL		DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH STREET, ROOTY HILL		CHK:	SHEET :1 OF 1



Base Map Source – Total Survey Solutions, Plan Showing Survey of features, Plan No. 170069, 2017

Figure 2 – Site Layout
Child Care Centre
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



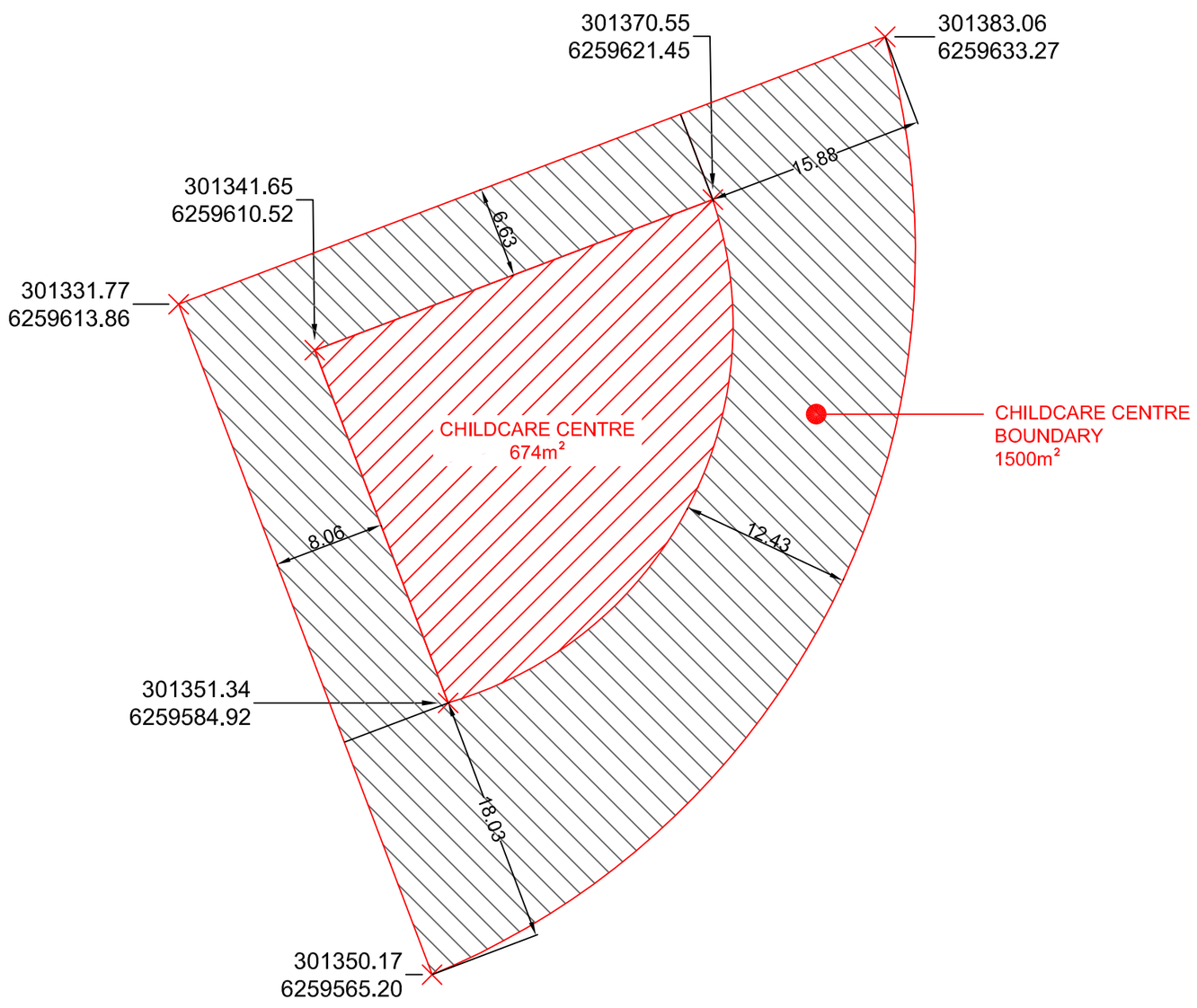
Total Survey Solutions, Set out sketch, Plan No. 170069, 2017

LEGEND

Site boundary

Sampling Location

Figure 3 – Sampling Location Plan
Child Care Centre
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

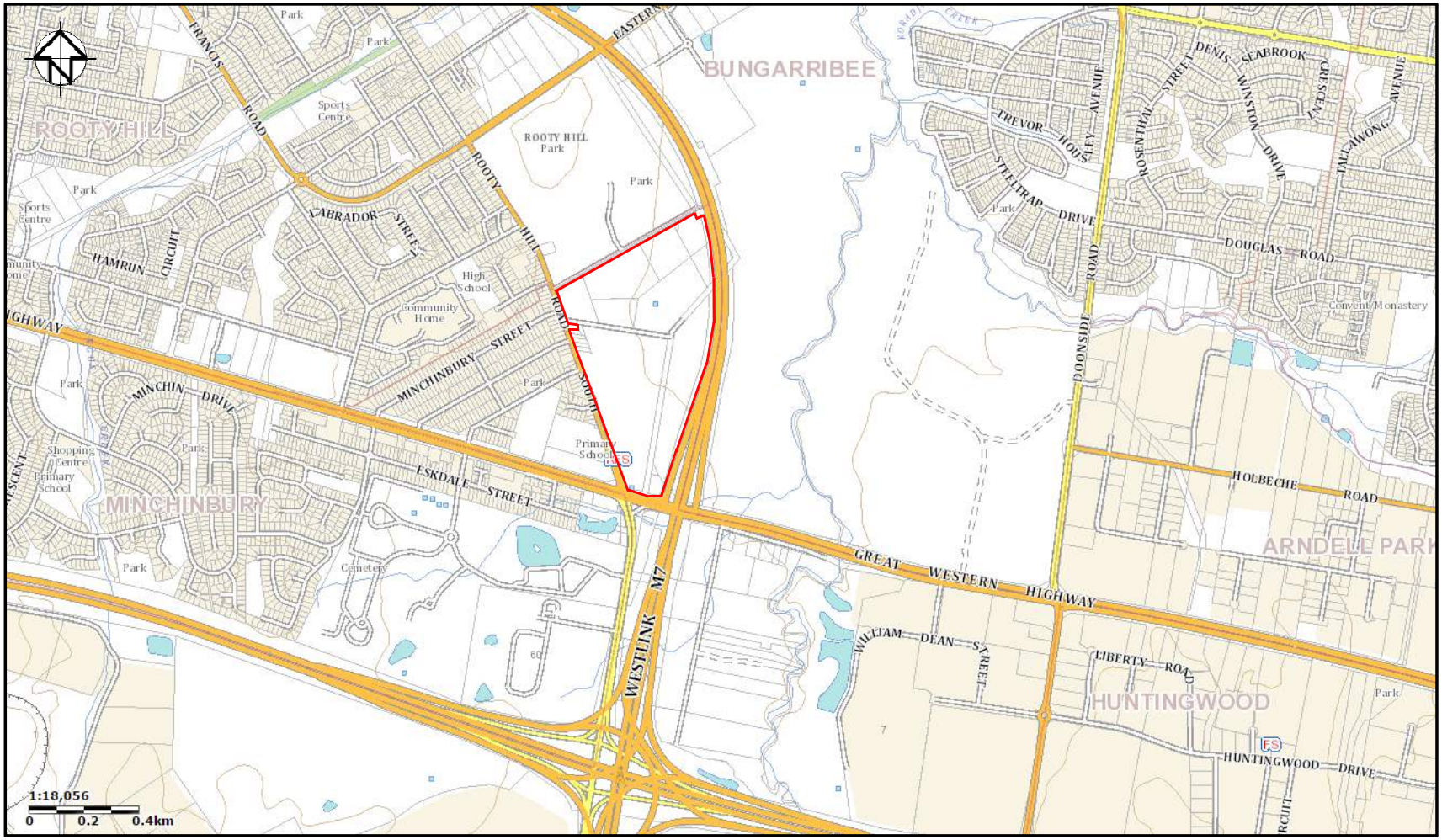


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	PLAN No.: 1003A	DATUM: NA
CLIENT: ENVIROPACIFIC	DATE: 26/07/2017	SCALE: NTS
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK:	SHEET :1 OF 1

Appendix D Consultant's Figures



Base Map Source – Six Maps, 2017

LEGEND

Site boundary

Figure 1 – Site Location Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



LEGEND

- Former structure remnants (footings)
- Sample from close to former structure remnants
- Recent fly tipping
- Remnant stockpile
- Stockpile test pit location
- Surface sample location

14-19 — Area of Environmental Concern (AEC). Approximate envelopes of former structures (primarily houses and sheds) - refer to historical aerial photographs.

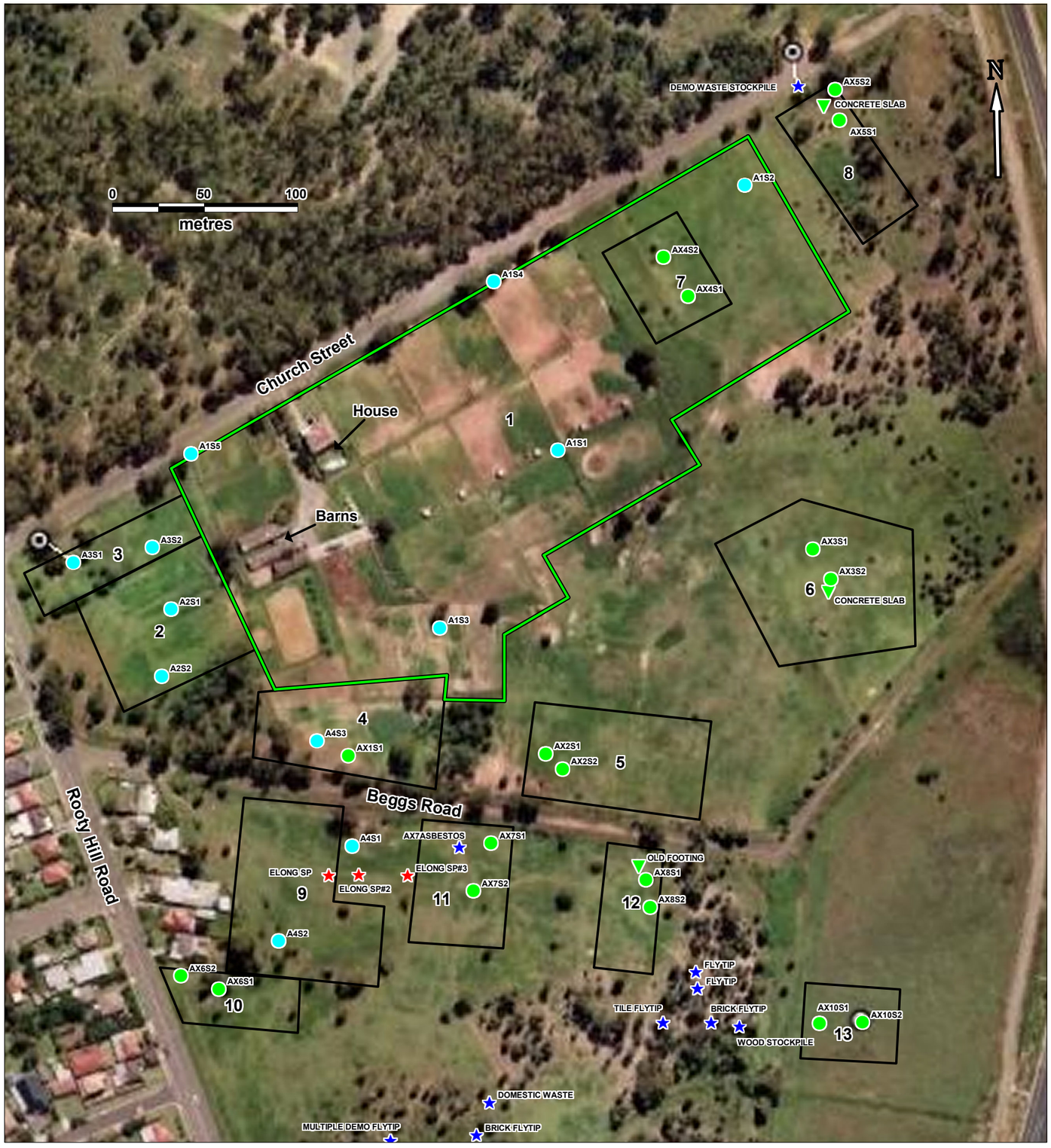
20 — AEC- Approximate area of former market garden.

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TITLE: **FIELDWORK LOCATIONS - SOUTHERN SECTION**
ROOTY HILL ROAD SOUTH
DOONSIDE

CLIENT: Western Sydney Parklands Trust			
DRAWN BY: ALT	SCALE: 1:2500	PROJECT No: 71065.02	OFFICE: SYDNEY
APPROVED BY:		DATE: 9 November 2009	DRAWING No: 1.1



LEGEND

- Former structure remnants (footings)
- Sample from close to former structure remnants
- Recent fly tipping
- Remnant stockpile
- Surface sample location

1 — Area of Environmental Concern 9AEC). Area of past and present market gardening

2-13 — Area of Environmental Concern (AEC). Approximate envelope of former structures (primarily houses and sheds) - refer to historical aerial photographs

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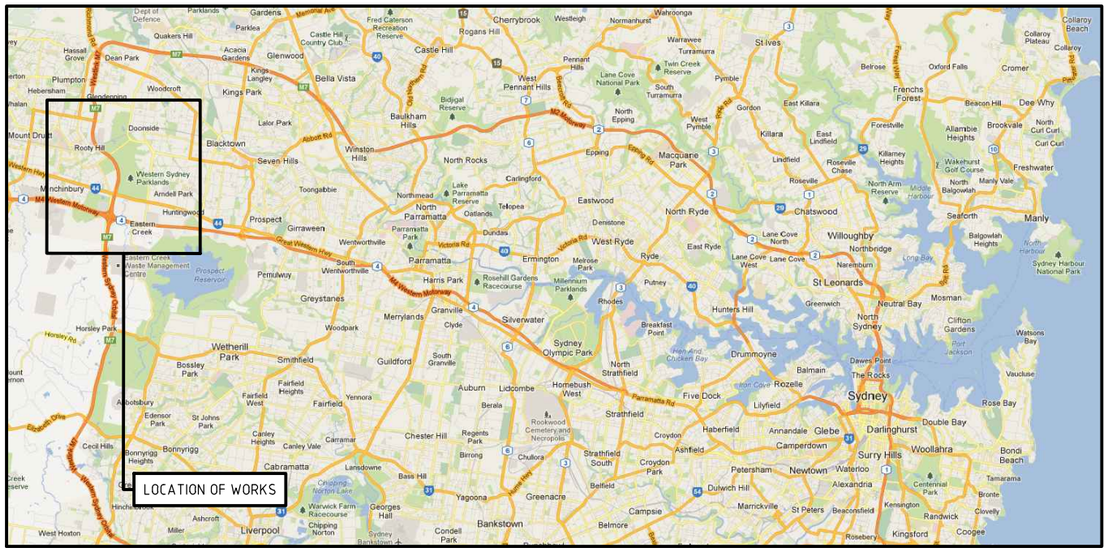
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CLIENT: Western Sydney Parklands Trust			
DRAWN BY: ALT	SCALE: 1:2500	PROJECT No: 71065.02	OFFICE: SYDNEY
APPROVED BY:		DATE: 9 November 2009	DRAWING No: 1.2

ECBH ENVIRONMENTAL SITE ASSESSMENT



LOCATION OF WORKS
SCALE 1:10,000 (A3)



LOCALITY MAP
NOT TO SCALE

DRAWING NUMBER	DRAWING TITLE	REVISION
S12388.01-DWG-001	SITE LOCATION	A
S12388.01-DWG-002	SITE LAYOUT AND SAMPLING LOCATIONS	A
S12388.01-DWG-003	PROPOSED LAND DIVISION USE	A
S12388.01-DWG-004	SUPERLOT 1 - SAMPLE LOCATION PLAN	A
S12388.01-DWG-005	SUPERLOT 2, AREA A & AREA C - SAMPLE LOCATION PLAN	A
S12388.01-DWG-006	AREA X - SAMPLE LOCATION PLAN	A
S12388.01-DWG-007	AREA Y - SAMPLE LOCATION PLAN	A
S12388.01-DWG-008	GROUNDWATER ELEVATION PLAN	A

REVISIONS

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DATE PLOTTED: 07 December, 2012 - 2:47pm

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1:10,000m
ORIGINAL SHEET SIZE A3

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PROJECT S12388.01 - ECBH ENVIRONMENTAL SITE ASSESSMENT
TITLE FIGURE 1
SITE LOCATION
STATUS DRAFT
DRG No. S12388.01-DWG-001
REV. A

CAD FILE: G:\CAD\SYDNEY\Projects\S12388.01 - Advice, Western Sydney Parklands Trust\Production Drawings\S12388.01-DWG-001.dwg



LEGEND	
	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
	PROPOSED BUILDING DEVELOPMENT LAYOUT
1	SUPERLOT
P	AREA
	BORE HOLE LOCATION
	TEST PIT LOCATION
	STOCKPILE LOCATION

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ORIGINAL SHEET SIZE A3

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PROJECT S12388.01 - ECBH ENVIRONMENTAL SITE ASSESSMENT
TITLE FIGURE 2
SITE LAYOUT & SAMPLING LOCATIONS
STATUS DRAFT
DRG No. S12388.01-DWG-002
REV. A



LEGEND	
	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
	PROPOSED BUILDING DEVELOPMENT LAYOUT

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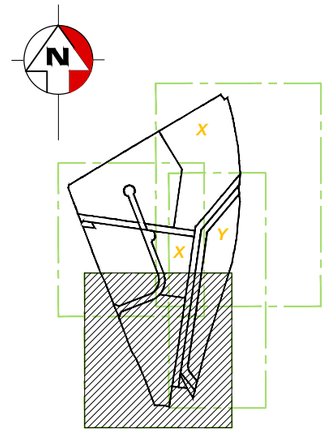
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TITLE
FIGURE 3
PROPOSED LAND DIVISION USE

STATUS DRAFT | DRG No. S12388.01-DWG-003 | REV. A





LOCALITY KEY

LEGEND	
	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
1	SUPERLOT
P	AREA
	BORE HOLE LOCATION
	TEST PIT LOCATION
	STOCKPILE LOCATION

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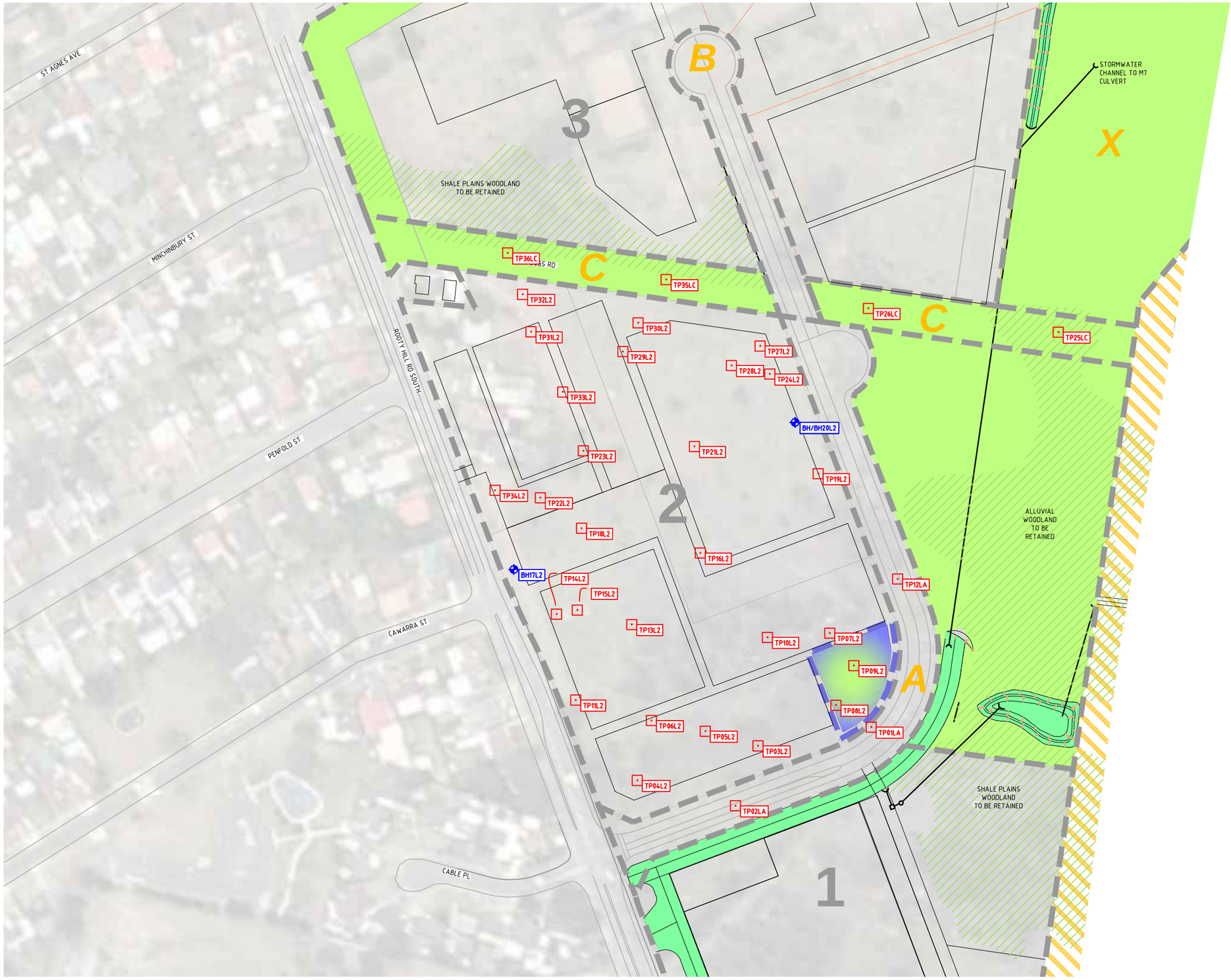
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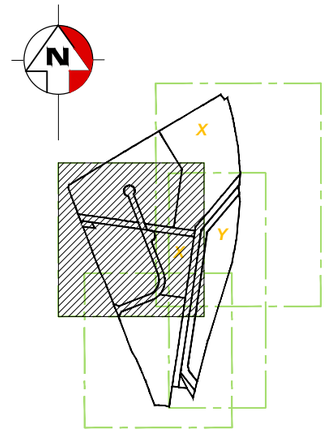
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TITLE FIGURE 4
SUPERLOT 1 - SAMPLE LOCATION PLAN

STATUS DRAFT | DRG No. S12388.01-DWG-004 | REV. A





LOCALITY KEY

LEGEND	
	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
1	SUPERLOT
P	AREA
	BORE HOLE LOCATION
	TEST PIT LOCATION
	STOCKPILE LOCATION

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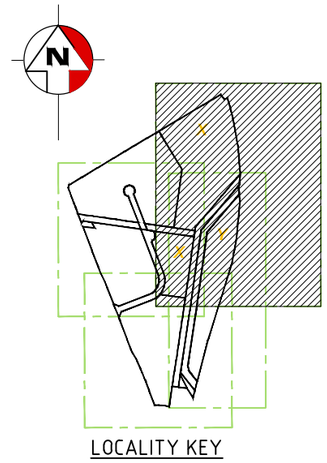
TITLE FIGURE 5
SUPERLOT 2,AREA A & AREA C
SAMPLE LOCATION PLAN

STATUS DRAFT

DRG No. S12388.01-DWG-005

REV. A





LEGEND

	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
1	SUPERLOT
P	AREA
	BORE HOLE LOCATION
	TEST PIT LOCATION
	STOCKPILE LOCATION

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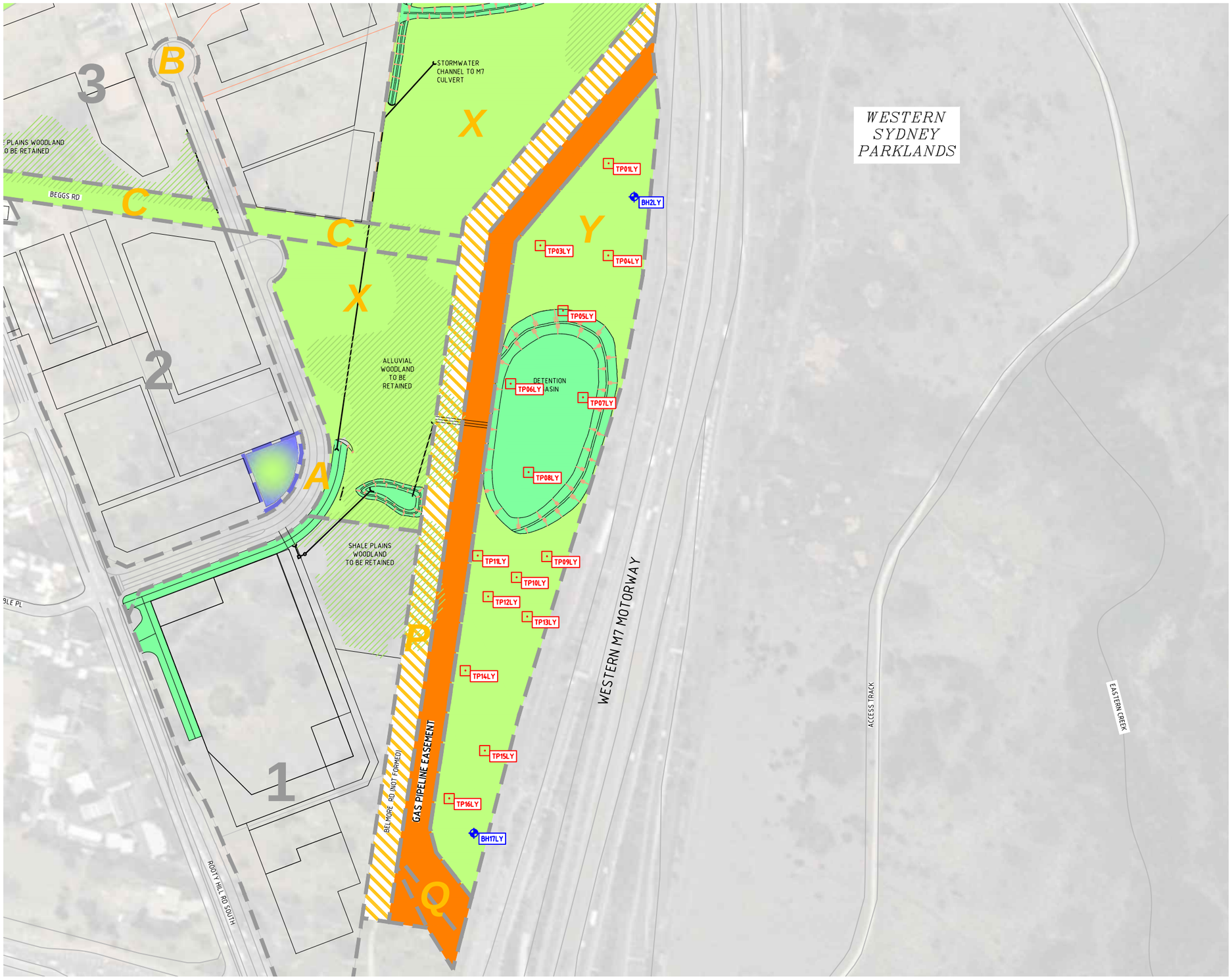
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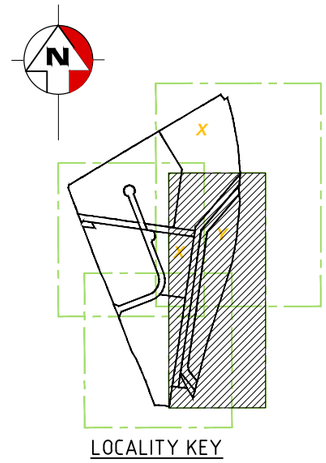
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TITLE FIGURE 6
AREA X
SAMPLE LOCATION PLAN

STATUS DRAFT | DRG No. S12388.01-DWG-006 | REV. A





LOCALITY KEY

LEGEND	
	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
1	SUPERLOT
P	AREA
	BORE HOLE LOCATION
	TEST PIT LOCATION
	STOCKPILE LOCATION

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SCALE A3

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TITLE FIGURE 7
AREA Y
SAMPLE LOCATION PLAN

STATUS DRAFT

DRG No. S12388.01-DWG-007

REV. A



LEGEND	
— — —	SUPERLOT/ AREA BOUNDARY
◆	BORE HOLE LOCATION
39	GROUNDWATER CONTOUR LINE (0.5m INTERVAL) (ELEVATION mAHD)
→	GROUNDWATER FLOW DIRECTION ARROW

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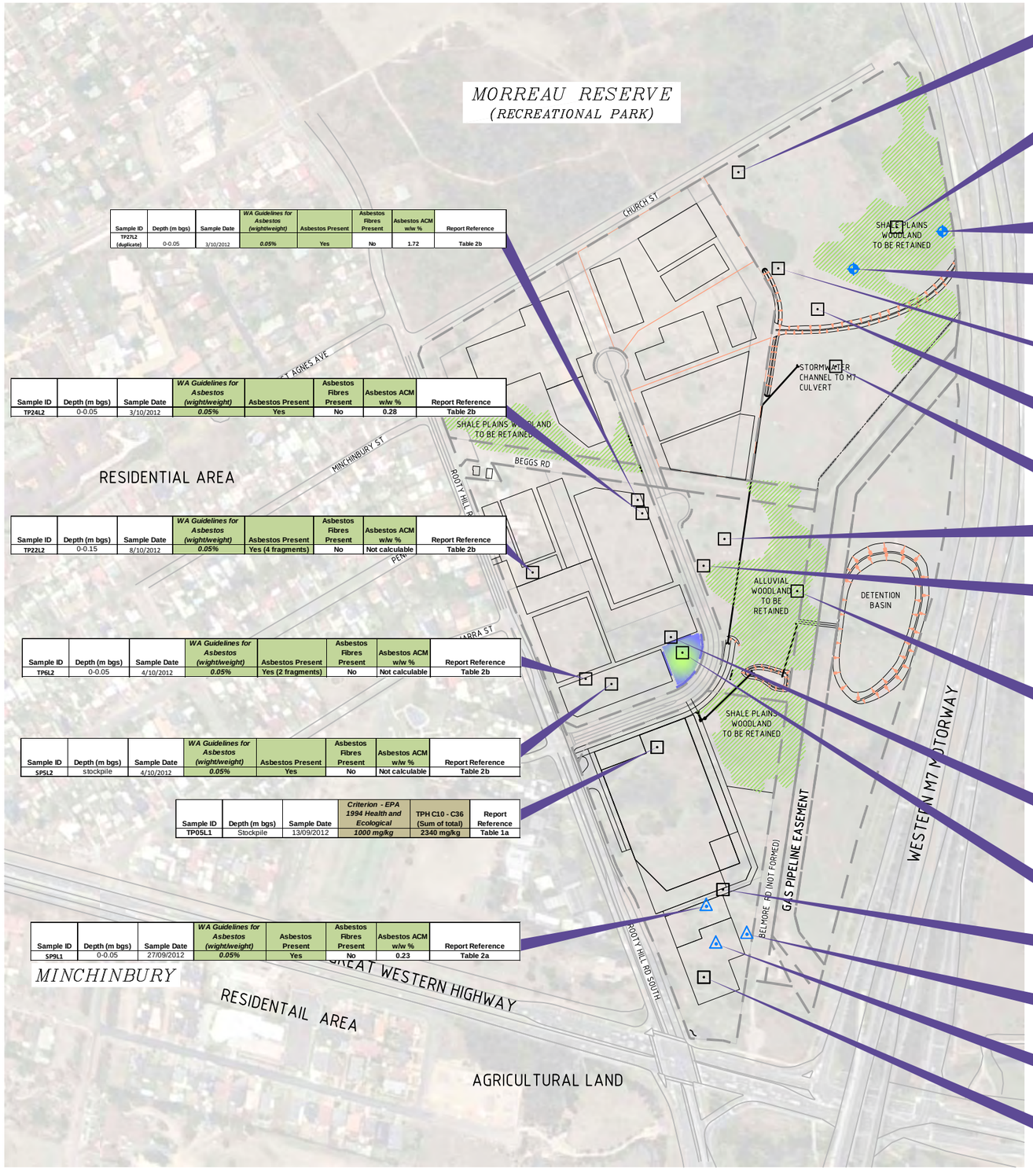
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ORIGINAL SHEET SIZE A3

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TITLE FIGURE 8
GROUNDWATER CONTOUR PLAN
STATUS DRAFT
DRG No. S12388.01-DWG-008
REV. A



Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP27L2 (duplicate)	0-0.05	3/10/2012	0.05%	Yes	No	1.72	Table 2b

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP24L2	0-0.05	3/10/2012	0.05%	Yes	No	0.28	Table 2b

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP22L2	0-0.15	8/10/2012	0.05%	Yes (4 fragments)	No	Not calculable	Table 2b

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP6L2	0-0.05	4/10/2012	0.05%	Yes (2 fragments)	No	Not calculable	Table 2b

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
SP5L2	stockpile	4/10/2012	0.05%	Yes	No	Not calculable	Table 2b

Sample ID	Depth (m bgs)	Sample Date	Criterion - EPA 1994 Health and Ecological	TPH C10 - C36 (Sum of total)	Report Reference
			1000 mg/kg	2340 mg/kg	Table 1a
TP05L1	Stockpile	13/09/2012			

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
SP9L1	0-0.05	27/09/2012	0.05%	Yes	No	0.23	Table 2a

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP11X	0-0.05	21/09/2012	0.05%	Yes	No	Not calculable	Table 2d

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3800 mg/kg	Table 1d
TP21X	0-0.05	24/09/2012			

Sample ID	Depth (m bgs)	Sample Date	Asbestos Present	WA Guidelines for ACM (wight/weight)	Asbestos ACM w/w %	Asbestos Fibres Present	WA Guidelines for Asbestos Fibres(wight/weight)	AF w/w Analysis (%)	Report Reference
TP21X	0-0.05	24/09/2012	Yes	0.05%	Not calculable	YES	0.001%	0.0001	Table 2d

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3100 mg/kg	Table 1d
BH20X	1.5-1.6	20/09/2012			

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3900 mg/kg	Table 1d
BH22X	0-0.05	19/09/2012			

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3200 mg/kg	Table 1d
TP23X	0-0.05	21/09/2012			

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3400 mg/kg	Table 1d
TP24X	0.1-0.15	21/09/2012			

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3900 mg/kg	Table 1d
TP28X	0.1-0.15	24/09/2012			

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP38X	0-0.05	11/09/2012	0.05%	Yes (2 fragments)	No	Not calculable	Table 2d

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP43X	0-0.05	11/09/2012	0.05%	Yes	No	Not calculable	Table 2d

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E	Copper	Criterion NEPM 1999 HIL E [2]	Lead	Report Reference
	0.1-0.15	13/09/2012		11000 mg/kg		1100 mg/kg	
TP47X	0.3-0.4	13/09/2012	2000 mg/kg	1400 mg/kg	600 mg/kg	770 mg/kg	Table 1d

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP47X	0-0.05	11/09/2012	0.05%	Yes	No	3.75	Table 2d

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3300 mg/kg	Table 1b
TP7L2	0-0.05	4/10/2012			

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Manganese	Report Reference
			3000 mg/kg	3700 mg/kg	Table 1b
TP9L2	0-0.05	4/10/2012			

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
TP16L1	0-0.05	26/09/2012	0.05%	Yes	No	Not calculable	Table 2a

Sample ID	Depth (m bgs)	Sample Date	Criterion NEPM 1999 HIL E [2]	Lead	Report Reference
			3000 mg/kg	610 mg/kg	Table 1a
SP6L1	0-0.05	27/09/2012			

Sample ID	Depth (m bgs)	Sample Date	WA Guidelines for Asbestos (wight/weight)	Asbestos Present	Asbestos Fibres Present	Asbestos ACM w/w %	Report Reference
SP8L1	0-0.05	27/09/2012	0.05%	Yes	No	4.84	Table 2a

Sample ID	Depth (m bgs)	Sample Date	Criterion - EPA 1994 Health and Ecological	TPH C10 - C36 (Sum of total)	Report Reference
			1000 mg/kg	2560 mg/kg	Table 1a
TP27L1B	0.1-0.15	27/09/2012			

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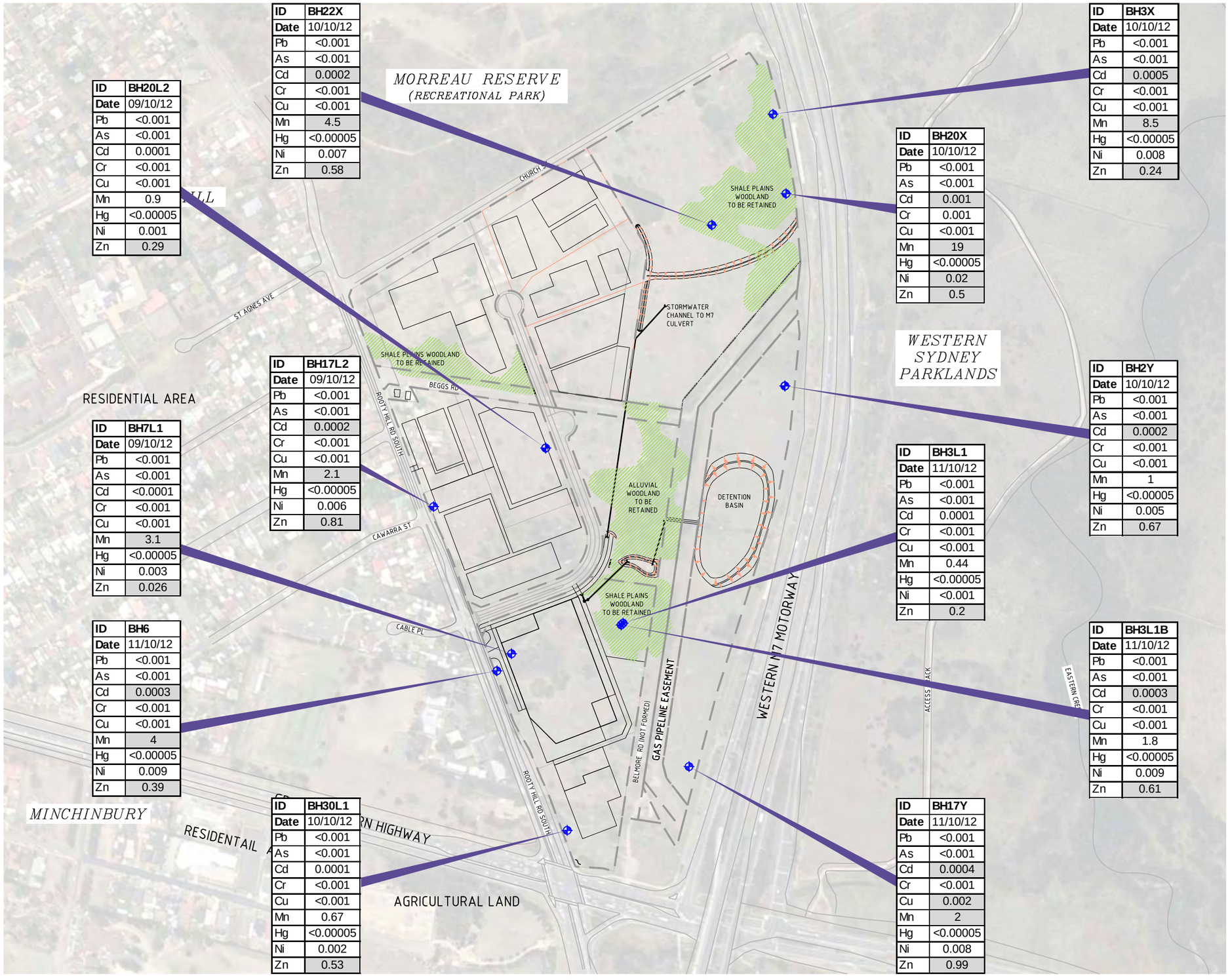
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PROJECT S12388.01 - ECBH ENVIRONMENTAL SITE ASSESSMENT

TITLE
FIGURE 9
SOIL CRITERIA EXCEEDANCES

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Zn	0.24

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Cd	0.0001
Cr	<0.001
Cu	<0.001
Mn	0.9
Hg	<0.00005
Ni	0.001
Zn	0.29

ID	BH20X
Date	10/10/12
Pb	<0.001
As	<0.001
Cd	0.001
Cr	0.001
Cu	<0.001
Mn	19
Hg	<0.00005
Ni	0.02
Zn	0.5

ID	BH17L2
Date	09/10/12
Pb	<0.001
As	<0.001
Cd	0.0002
Cr	<0.001
Cu	<0.001
Mn	2.1
Hg	<0.00005
Ni	0.006
Zn	0.81

ID	BH2Y
Date	10/10/12
Pb	<0.001
As	<0.001
Cd	0.0002
Cr	<0.001
Cu	<0.001
Mn	1
Hg	<0.00005
Ni	0.005
Zn	0.67

ID	BH7L1
Date	09/10/12
Pb	<0.001
As	<0.001
Cd	<0.0001
Cr	<0.001
Cu	<0.001
Mn	3.1
Hg	<0.00005
Ni	0.003
Zn	0.026

ID	BH3L1
Date	11/10/12
Pb	<0.001
As	<0.001
Cd	0.0001
Cr	<0.001
Cu	<0.001
Mn	0.44
Hg	<0.00005
Ni	<0.001
Zn	0.2

ID	BH6
Date	11/10/12
Pb	<0.001
As	<0.001
Cd	0.0003
Cr	<0.001
Cu	<0.001
Mn	4
Hg	<0.00005
Ni	0.009
Zn	0.39

ID	BH3L1B
Date	11/10/12
Pb	<0.001
As	<0.001
Cd	0.0003
Cr	<0.001
Cu	<0.001
Mn	1.8
Hg	<0.00005
Ni	0.009
Zn	0.61

ID	BH30L1
Date	10/10/12
Pb	<0.001
As	<0.001
Cd	0.0001
Cr	<0.001
Cu	<0.001
Mn	0.67
Hg	<0.00005
Ni	0.002
Zn	0.53

ID	BH17Y
Date	11/10/12
Pb	<0.001
As	<0.001
Cd	0.0004
Cr	<0.001
Cu	0.002
Mn	2
Hg	<0.00005
Ni	0.008
Zn	0.99

Analyte	Criteria
Pb	0.0034
As	
Cd	0.0002
Cr	
Cu	0.0014
Mn	1.9
Hg	0.0006
Ni	0.011
Zn	0.008

NOTES
1. ALL CONCENTRATIONS ARE IN MG/L.
2. CRITERIA USED ARE FROM **ANZECC & ARMCANZ (2000)** 95% LEVEL OF PROTECTION FOR FRESHWATER ECOSYSTEMS. GREY SHADING INDICATES SAMPLE CONCENTRATION EXCEEDENCE OF THE RELEVANT CRITERION.
3. ALL SAMPLES WERE FILTERED PRIOR TO ANALYSIS.

REVISIONS

No.	BY	DATE	DESCRIPTION	APPD
A	MSM	21/11/12	DRAFT	APP

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This drawing is confidential and shall only be used for the purposes of this project.

DESIGNED		CHECKED	
DRAWN	MSM	CHECKED	CG
APPROVED	MN	DATE	21/11/12

DATE PLOTTED: 07 December, 2012 - 2:56pm

SCALE
50 0 50 100 150m
1:5,000m
ORIGINAL SHEET SIZE A3

CDM Smith
cdmsmith.com

PROJECT S12388.01 - ECBH ENVIRONMENTAL SITE ASSESSMENT

TITLE
FIGURE 10
GROUNDWATER CRITERIA EXCEEDENCES

STATUS DRAFT | DRG No. S12388.01-DWG-010 | REV. A

CAD FILE: G:\CAD\SYDNEY\Projects\S12388.01 - Advice, Western Sydney Parklands Trust\Production Drawings\S12388.01-DWG-010.dwg



LEGEND	
	SUPERLOT/ AREA BOUNDARY
	POTENTIAL LOCATION FOR ACTIVITY PLAYGROUND
	GAS PIPELINE EASEMENT
	BUFFER TO GAS PIPELINE
	OPEN SPACE / CUMBERLAND PLAIN WOODLAND
	PROPOSED STORMWATER CONTROL AREA
	PROPOSED BUILDING DEVELOPMENT LAYOUT
1	SUPERLOT
P	AREA
	BORE HOLE LOCATION
	TEST PIT LOCATION
	STOCKPILE LOCATION
	IDENTIFIED FILL WITH WASTE CONTENT LOCATION
	IDENTIFIED ASBESTOS MATERIAL LOCATION

CAD FILE: G:\CADD\SYDNEY\Projects\S12388.01 - Aldrice, Western Sydney Parklands Trust\Production Drawings\S12388.01-DWG-011.dwg

REVISIONS

No.	BY	DATE	DESCRIPTION	APPD
A	MSM	10/12/12	DRAFT	APP

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DESIGNED		CHECKED	
DRAWN	MSM	CHECKED	CG
APPROVED	MN	DATE	10/12/12
DATE PLOTTED: 10 December, 2012 - 4:56pm			

SCALE
50 0 50 100 150m
1:5,000m
ORIGINAL SHEET SIZE A3

CDM Smith
cdmsmith.com

PROJECT S12388.01 - ECBH ENVIRONMENTAL SITE ASSESSMENT
TITLE FIGURE 11
ASBESTOS AND WASTE LOCATION LOCATIONS
STATUS DRAFT
DRG No. S12388.01-DWG-011
REV. A

Plan Showing Ownership Data - Western Sydney Parklands Precincts 2.3 & 2.4

SPATIAL INSITES DEVELOPMENT CONSULTANTS

SCALE 1:2000

SCALE 1:300

SCALE 1:100

LEGEND

- E1: Easement for Pipeline 24.835 wide [Vide Q916928]
- E2: Easement for Drainage 4.57 wide [Vide G642905]
- E3: Easement for Batter [Vide K920274]
- E4: Easement for Eaves and Gutters [Vide H614401]
- E5: Easement for Eaves and Gutters [Vide H614401]
- E6: Positive Covenant [Vide DP1051904]
- E7: Restriction(s) on the use of Land [Vide DP1051904]
- Precinct Lot

NOTES:

1. Digital Cadastral DataBase © 2009 NSW Dept. of Lands
2. Easement positions are indicative only and are subject to confirmation by survey

ID	Lot/Section/DP	Owner
1	5//DP1041487	BLACKTOWN CITY COUNCIL
2	1//DP1103025	WESTERN SYDNEY PARKLANDS TRUST
3	101//DP581882	THE COUNCIL OF THE CITY OF BLACKTOWN
4	1//DP909138	THE PRESBYTERIAN CHURCH (NEW SOUTH WALES) PROPERTY TRUST
5	4//DP1041487	BLACKTOWN CITY COUNCIL
6	3//DP1041487	WESTERN SYDNEY PARKLANDS TRUST
7	100//DP882326	WESTERN SYDNEY PARKLANDS TRUST
8	5/B/DP8681	WESTERN SYDNEY PARKLANDS TRUST
9	4/B/DP8681	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 3439-80]
10	3/B/DP8681	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 3439-80]
11	1//DP135665	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 9630-178]
12	13/B/DP8681	WESTERN SYDNEY PARKLANDS TRUST [AUTO-CONSOL 9630-178]
13	1/B/DP8681	WESTERN SYDNEY PARKLANDS TRUST
14	3//DP830836	WESTERN SYDNEY PARKLANDS TRUST
15	2//DP830836	WESTERN SYDNEY PARKLANDS TRUST
16	4//DP830836	WESTERN SYDNEY PARKLANDS TRUST
17	1//DP830836	WESTERN SYDNEY PARKLANDS TRUST
18	2//DP1041487	WESTERN SYDNEY PARKLANDS TRUST
18	2//DP1041487	WESTERN SYDNEY PARKLANDS TRUST
19	5//DP830836	WESTERN SYDNEY PARKLANDS TRUST
20	6//DP830836	WESTERN SYDNEY PARKLANDS TRUST
21	A//DP358346	WESTERN SYDNEY PARKLANDS TRUST
22	8//DP31130	WESTERN SYDNEY PARKLANDS TRUST
23	1//DP31130	WESTERN SYDNEY PARKLANDS TRUST
24	2//DP31130	ALBERT GATES MARGARET ALLAN GATES AS JOINT TENANTS
25	3//DP31130	MINISTER ADMINISTERING THE ENVIRONMENTAL PLANNING & ASSESSMENT ACT 19
26	4//DP31130	BARRY CLYDE DAWSON
27	5//DP31130	MINISTER ADMINISTERING THE ENVIRONMENTAL PLANNING & ASSESSMENT ACT 19
28	6//DP31130	WESTERN SYDNEY PARKLANDS TRUST
29	7//DP31130	WESTERN SYDNEY PARKLANDS TRUST
30	2/A/DP8681	WESTERN SYDNEY PARKLANDS TRUST
31	7//DP830836	WESTERN SYDNEY PARKLANDS TRUST
32	8//DP830836	WESTERN SYDNEY PARKLANDS TRUST
33	9//DP830836	WESTERN SYDNEY PARKLANDS TRUST
34	10//DP830836	WESTERN SYDNEY PARKLANDS TRUST
35	3/A/DP8681	WESTERN SYDNEY PARKLANDS TRUST
36	12//DP882325	WESTERN SYDNEY PARKLANDS TRUST
37	11//DP882325	WESTERN SYDNEY PARKLANDS TRUST
38	14//DP882325	WESTERN SYDNEY PARKLANDS TRUST
39	1//DP1069269	WESTERN SYDNEY PARKLANDS TRUST
40	2//DP1069269	WESTERN SYDNEY PARKLANDS TRUST
41	14//DP1051904	AGL GAS NETWORKS LIMITED
42	50//DP1121258	ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES
43	12//DP1041487	ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES
44	11//DP1041487	ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES

ID	Road Ownership Status
45	ROAD BEING THE RESIDUE OF LAND IN CERTIFICATE OF TITLE VOLUME 826 FOLIO 243
46	PUBLIC CROWN SUBDIVISION ROAD
47	PUBLIC CROWN RESERVED ROAD
48	ROAD BEING THE RESIDUE OF LAND IN CERTIFICATE OF TITLE VOLUME 147 FOLIO 41
49	PUBLIC CROWN SUBDIVISION ROAD

No.	Date	Revision Details	INI
B	30-04-2010	Ownership information updated, Easements added	KDS
A	20-07-2009	Table Amended	SAS

PREPARED FOR: Western Sydney Parklands

CHECKED BY/DATE: KDS/07-05-2010
APPROVED BY/DATE: DWF/07-05-2010
GIS REF: F719-G-003b.mxd
JOB REF: F719

CO-ORDS: MGA
DATUM: N/A
DATE OF PLAN: 07-05-2010

1:5,000 @ A3

0 50 100 150 200 250 300 Metres

© Whelans InSites Pty Ltd

P:\F719\Mapping\Acad-Gis\F719-G-003b.mxd, 7/05/2010 12:06:16 PM, by fnorzahari

A4

PROJECT No.	C121009
FILE NAME	F005
DATE	30.04.13
DRAWN	RR
APPROVED	RO



SOURCE: NEARMAPS.COM

CLIENT
WESTERN SYDNEY PARKLANDS TRUST

PROJECT
REMEDIATION ACTION PLAN
PHASE 1 EARLY WORKS FOR
EASTERN CREEK BUSINESS HUB,
ROOTY HILL, NSW

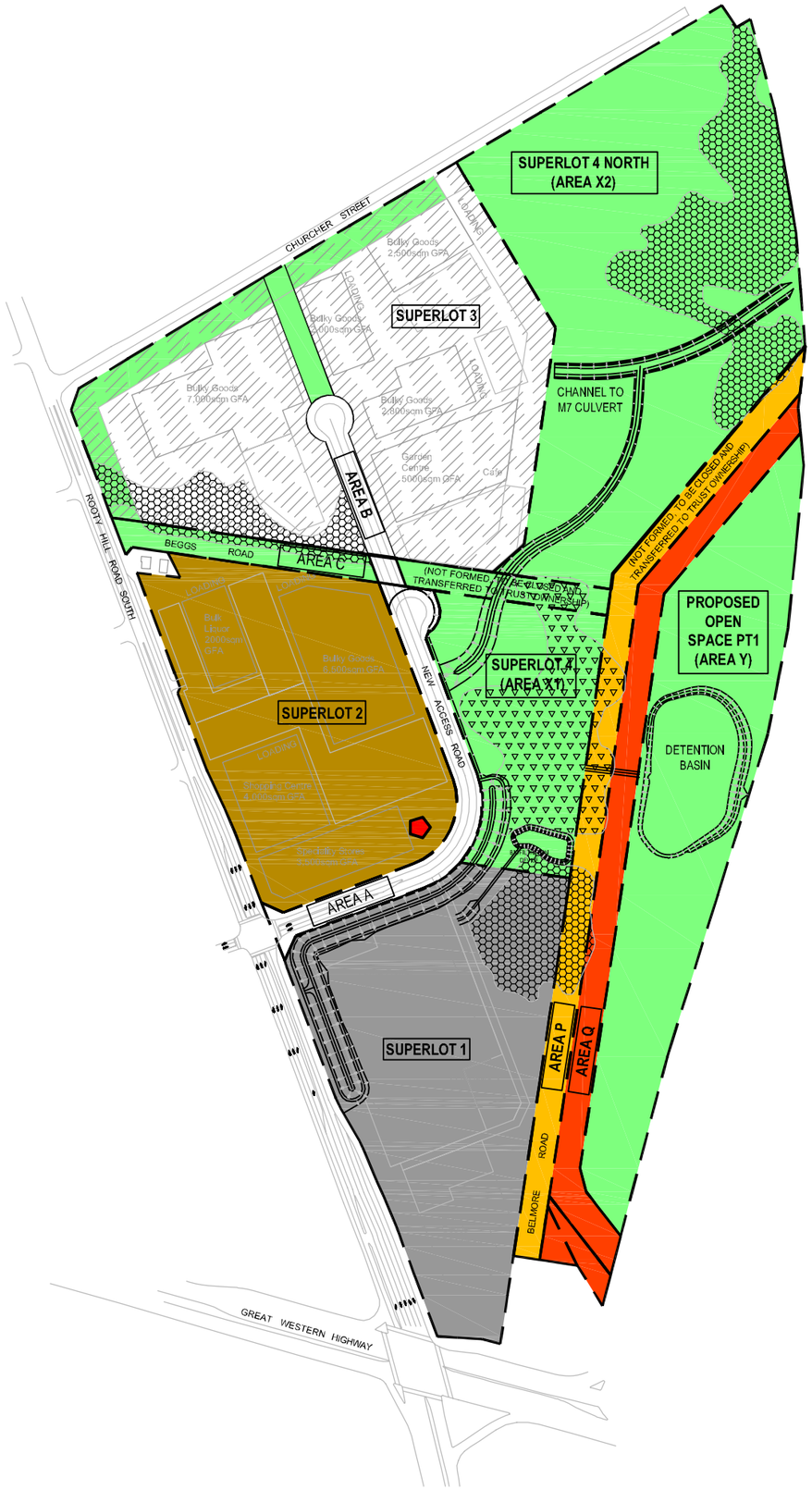
TITLE
SITE LOCATION PLAN

FIGURE No.
1

CONSARA
CONTAMINATED SITES assessment ■ remediation ■ advice

Plotted By: ReynoldsR Plot Date: 30/04/13 - 20:44 Cad File: E:\personal_CAD R2_CONSARA\C121009_ECHB\FIGURES\C121009-F005.dwg

A3



PROJECT No.	**C121009**
FILE NAME	**F006**
DATE	**30.04.13**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

- SUPERLOT BOUNDARY
- POTENTIAL LOCATION FOR ACTIVITY / PLAY GROUND
- BULKY GOODS / LARGE FORMAT RETAIL
- CONVENIENCE RETAIL / LARGE FORMAT RETAIL / BULKY GOODS
- BULKY GOODS / LARGE FORMAT RETAIL
- OPEN SPACE / CPW / CONSERVATION
- GAS MAIN EASEMENT
- BUFFER TO GAS MAIN (OPEN SPACE / CONSERVATION)
- SHALE PLAINS WOODLAND (CPW) TO BE RETAINED
- ALLUVIAL WOODLAND (CPW) TO BE RETAINED
- STORMWATER CHANNELS

0 50 100 150 200
(metres)

CLIENT
WESTERN SYDNEY PARKLANDS TRUST

PROJECT
REMEDIATION ACTION PLAN
PHASE 1 EARLY WORKS
EASTERN CREEK BUSINESSHUB,
ROOTY HILL, NSW

TITLE
SITE LAYOUT

FIGURE No.
2

CONSARA
CONTAMINATED SITES assessment • remediation • advice

Plotted By: ReynoldsR Plot Date: 30/04/13 - 20:44 Cad File: E:\personal_CAD R2_CONSARA\C121009_ECHB\FIGURES\C121009-F006.dwg

A3

PROJECT No.	**C121009**
FILE NAME	**F007**
DATE	**30.04.13**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

CURRENT PROPERTY BOUNDARIES

(A) : Q916928 - EASEMENT FOR PIPELINE 24.385 WIDE (VIDE DP 499004)

(B) : PROPOSED PIPELINE EASEMENT5 WIDE AND 7.5 WIDE (VIDE DP1044968)

(W1): PROPOSED EASEMENT FOR DRAINAGE OF WATER 10 WIDE

(W2): PROPOSED TEMPORARY EASEMENT FOR DRAINAGE OF WATER 8 WIDE

(CPW): CUMBERLAND PLAIN WOODLAND PROTECTION AREA



0 50 100 150 200
(metres)

CLIENT
WESTERN SYDNEY PARKLANDS TRUST

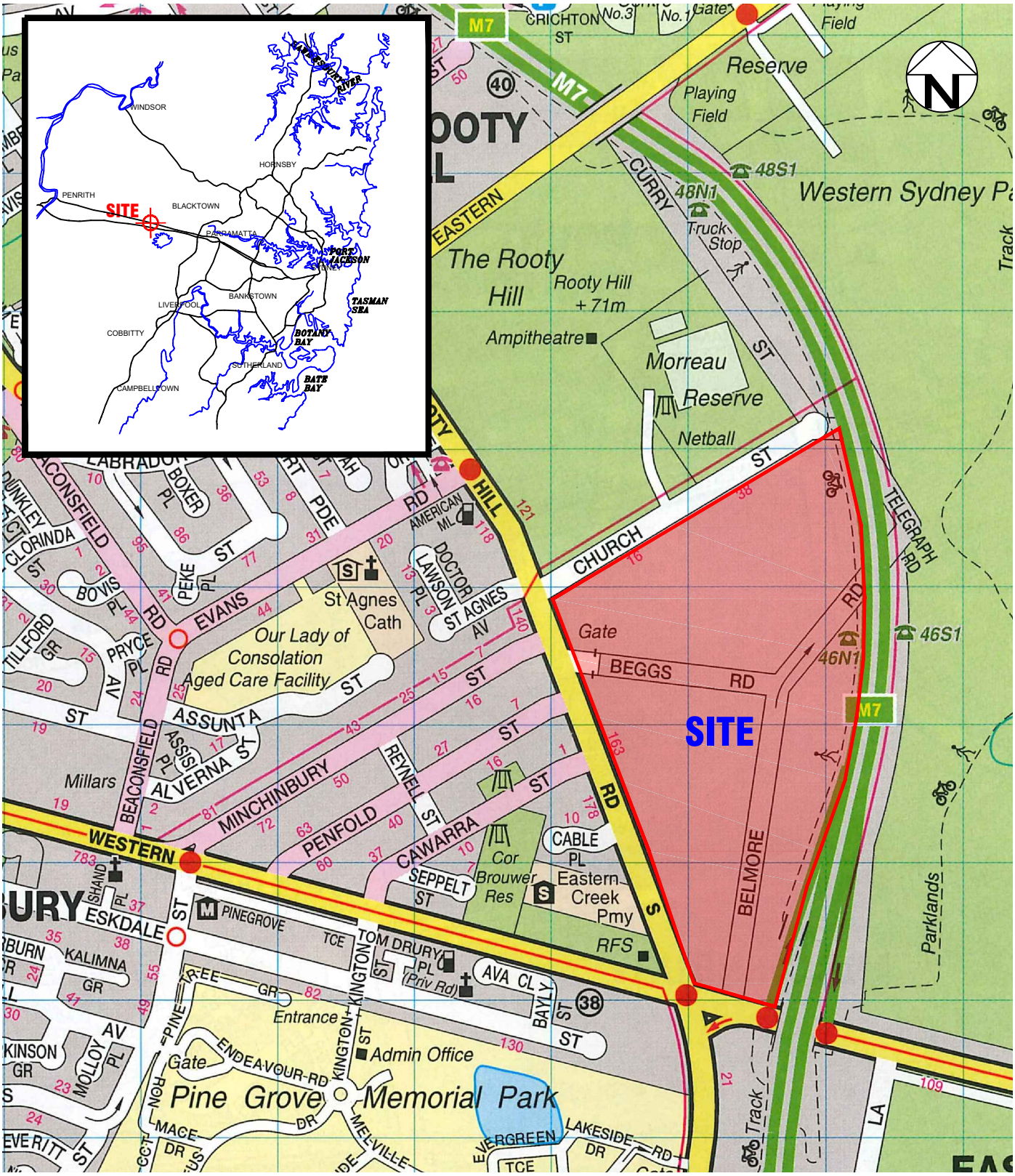
PROJECT
REMEDIATION ACTION PLAN
PHASE 1 EARLY WORKS
EASTERN CREEK BUSINESSHUB,
ROOTY HILL, NSW

TITLE
SUBDIVISION PLAN

FIGURE No.
3

CONSARA
CONTAMINATED SITES assessment ▪ remediation ▪ advice

Plotted By: ReynoldsR Plot Date: 30/04/13 - 20:44 Cad File: E:\personal_CAD R2_CONSARA\C21009_ECHB\FIGURES\C21009-F007.dwg



SOURCE: UBD STREET DIRECTORY GREGORYS SYDNEY & BLUE MOUNTAIN, NEW SOUTH WALES 48TH EDITION, 2015, MAP: 187

100 0 100 300 500

Scale (metres) 1:10 000

dra□n	MV
a□□roved	MD
date	20/07/15
scale	AS SHOWN
original si□e	A4

coffey

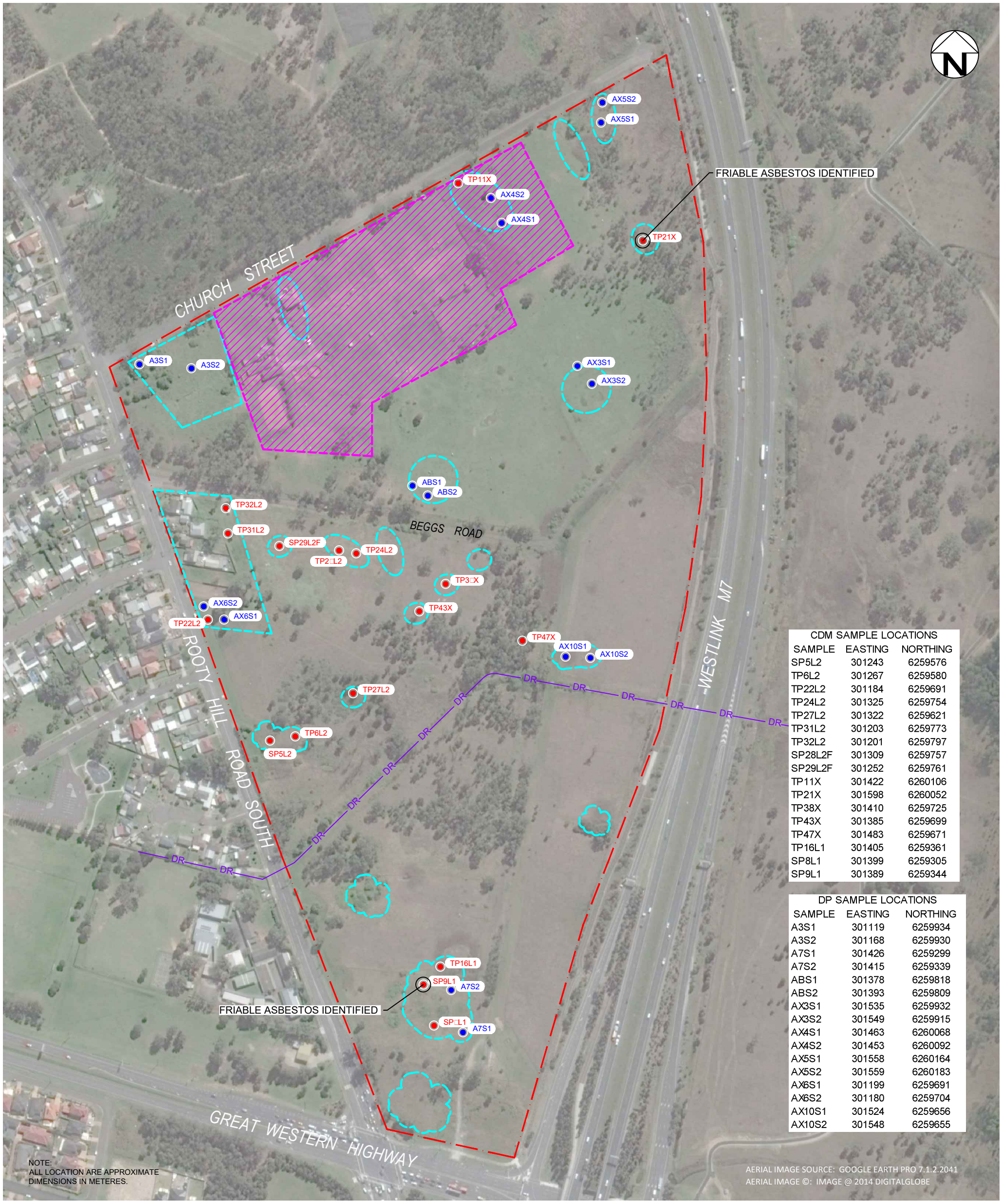
client: WESTERN SYDNEY PARKLANDS TRUST

□ro□ect: REVISED EARLY WORKS REMEDIATION ACTION PLAN BETWEEN M7 MOTORWAY, ROOTY HILL ROAD SOUTH AND CHURCH STREET, EASTERN CREEK, NSW

title: SITE LOCALITY PLAN

□ro□ect no: ENAURHOD046□3AC□R01 | □igure no: FIGURE 1 | rev: A

PLOT DATE: 21/07/2015 11:44:32 AM DWG FILE: F:\ENV\PROJECTS\ENAURHOD\ENAURHOD04 GOVIND\ENAURHOD04600\04699\ENAURHOD046□3 WESTERN SYDNEY PARKLANDS TRUST\ENAURHOD046□3AC EASTERN CREEK BUSINESS HUB\3. DRAWINGS\COFFEY FIGURES\ENAURHOD046□3AC□R01□D02.DWG



CDM SAMPLE LOCATIONS

SAMPLE	EASTING	NORTHING
SP5L2	301243	6259576
TP6L2	301267	6259580
TP22L2	301184	6259691
TP24L2	301325	6259754
TP27L2	301322	6259621
TP31L2	301203	6259773
TP32L2	301201	6259797
SP28L2F	301309	6259757
SP29L2F	301252	6259761
TP11X	301422	6260106
TP21X	301598	6260052
TP38X	301410	6259725
TP43X	301385	6259699
TP47X	301483	6259671
TP16L1	301405	6259361
SP8L1	301399	6259305
SP9L1	301389	6259344

DP SAMPLE LOCATIONS

SAMPLE	EASTING	NORTHING
A3S1	301119	6259934
A3S2	301168	6259930
A7S1	301426	6259299
A7S2	301415	6259339
ABS1	301378	6259818
ABS2	301393	6259809
AX3S1	301535	6259932
AX3S2	301549	6259915
AX4S1	301463	6260068
AX4S2	301453	6260092
AX5S1	301558	6260164
AX5S2	301559	6260183
AX6S1	301199	6259691
AX6S2	301180	6259704
AX10S1	301524	6259656
AX10S2	301548	6259655

revision

no.	descri□tion	dra□n	a□□roved	date
A	ORIGINAL ISSUE			

LEGEND

- APPROXIMATE SITE BOUNDARY
- SUSPECTED ASBESTOS IMPACT
- FORMER MARKET GARDEN
- DR — STORM DRAINAGE CHANNEL
- CDM SMITH SAMPLES
- DP SAMPLES

0 35 70 105 140 175
SCALE 1:3500 (A3) METRES

dra□n	MV
a□□roved	MD
date	20/07/15
scale	AS SHOWN
original si□e	A3

coffey

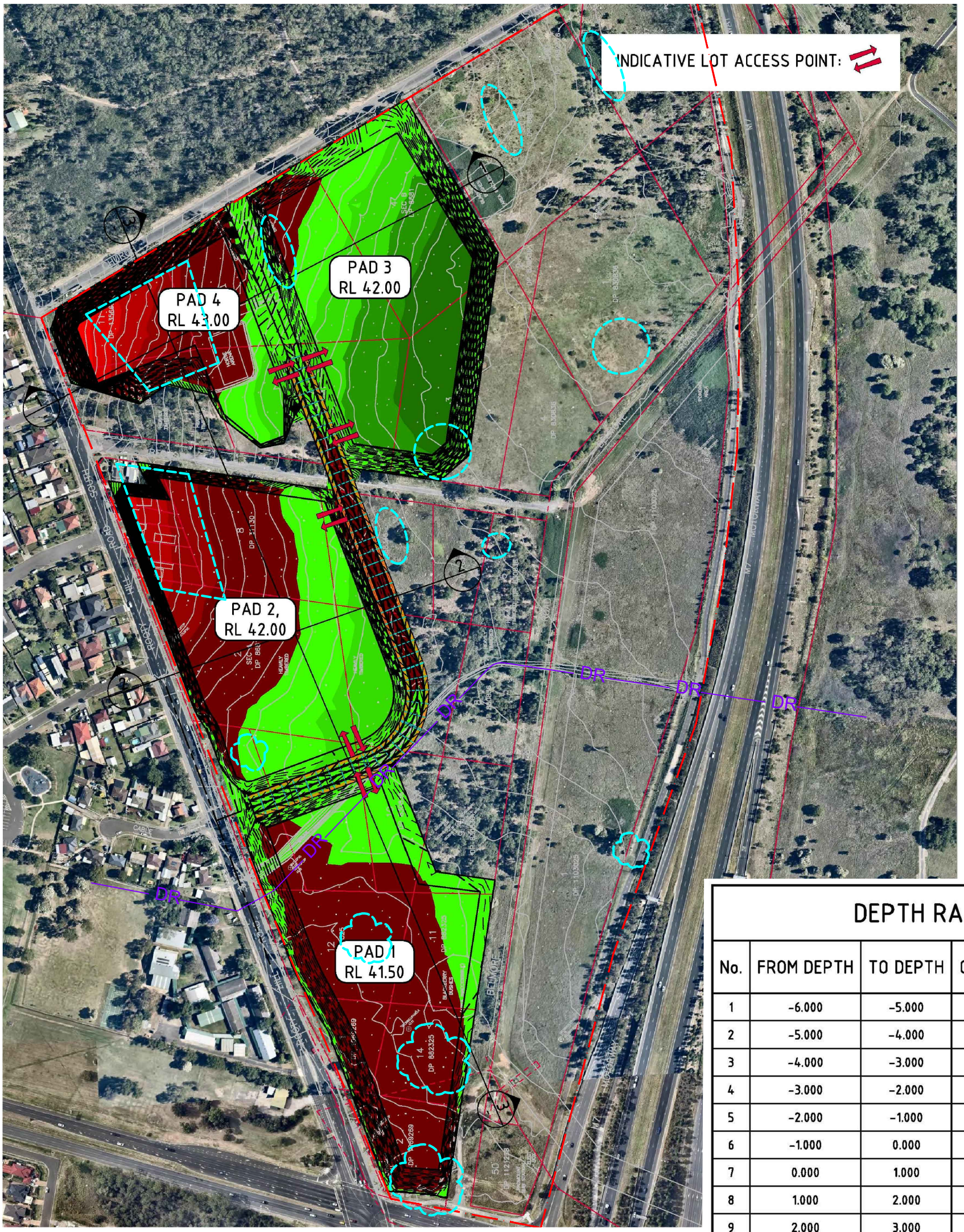
client: WESTERN SYDNEY PARKLANDS TRUST

□ro□ect: REVISED EARLY WORKS REMEDIATION ACTION PLAN BETWEEN M7 MOTORWAY, ROOTY HILL ROAD SOUTH AND CHURCH STREET, EASTERN CREEK, NSW

title: SITE LAYOUT PLAN

□ro□ect no: ENAURHOD046□3AC□R01 | □igure no: FIGURE 2 | rev: A

PLOT DATE: 23/07/2015 11:05:26 AM DWG FILE: F:□ENVI□PROJECTS□ENAURHOD□ENAURHOD04 GOVIND□ENAURHOD04600□04699 ENAURHOD046□3 WESTERN SYDNEY PARKLANDS TRUST ENAURHOD046□3AC EASTERN CREEK BUSINESS HUB3. DRAWINGS□COFFEY FIGURES ENAURHOD046□3AC□R01□D02.DWG



SOURCE: COSTINROE CONSULTING, C012693.00_SKC11, 23.01.2015.

DEPTH RANGE

No.	FROM DEPTH	TO DEPTH	COLOUR	DEPTH RANGE VOLUME
1	-6.000	-5.000		107m^3
2	-5.000	-4.000		1056m^3
3	-4.000	-3.000		3671m^3
4	-3.000	-2.000		9196m^3
5	-2.000	-1.000		19308m^3
6	-1.000	0.000		49237m^3
7	0.000	1.000		56480m^3
8	1.000	2.000		25578m^3
9	2.000	3.000		13661m^3
10	3.000	4.000		2925m^3

IMAGE SOURCE: HANSEN YUNCHEN, 12693.00-SKC31, 2015.

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE			

LEGEND

- APPROXIMATE SITE BOUNDARY
- SUSPECTED ASBESTOS IMPACT
- DR — STORM DRAINAGE CHANNEL

0 35 70 105 140 175
SCALE 1:3500 (A3) METRES

drawn	MV
approved	MD
date	20/07/15
scale	AS SHOWN
original size	A3

coffey

client: WESTERN SYDNEY PARKLANDS TRUST

project: REVISED EARLY WORKS REMEDIATION ACTION PLAN BETWEEN M7 MOTORWAY, ROOTY HILL ROAD SOUTH AND CHURCH STREET, EASTERN CREEK, NSW

title: CUT AND FILL

project no: ENAURHOD046_3AC_R01 | figure no: FIGURE 3 | rev: A

PLOT DATE: 21/07/2015 12:10:32 PM DWG FILE: F:\ENV\PROJECTS\ENAURHOD ENAURHOD04 GOVIND ENAURHOD04600 04699 ENAURHOD046_3 WESTERN SYDNEY PARKLANDS TRUST ENAURHOD046_3AC EASTERN CREEK BUSINESS HUB 3. DRAWINGS COFFEY FIGURES ENAURHOD046_3AC_R01_D02.DWG

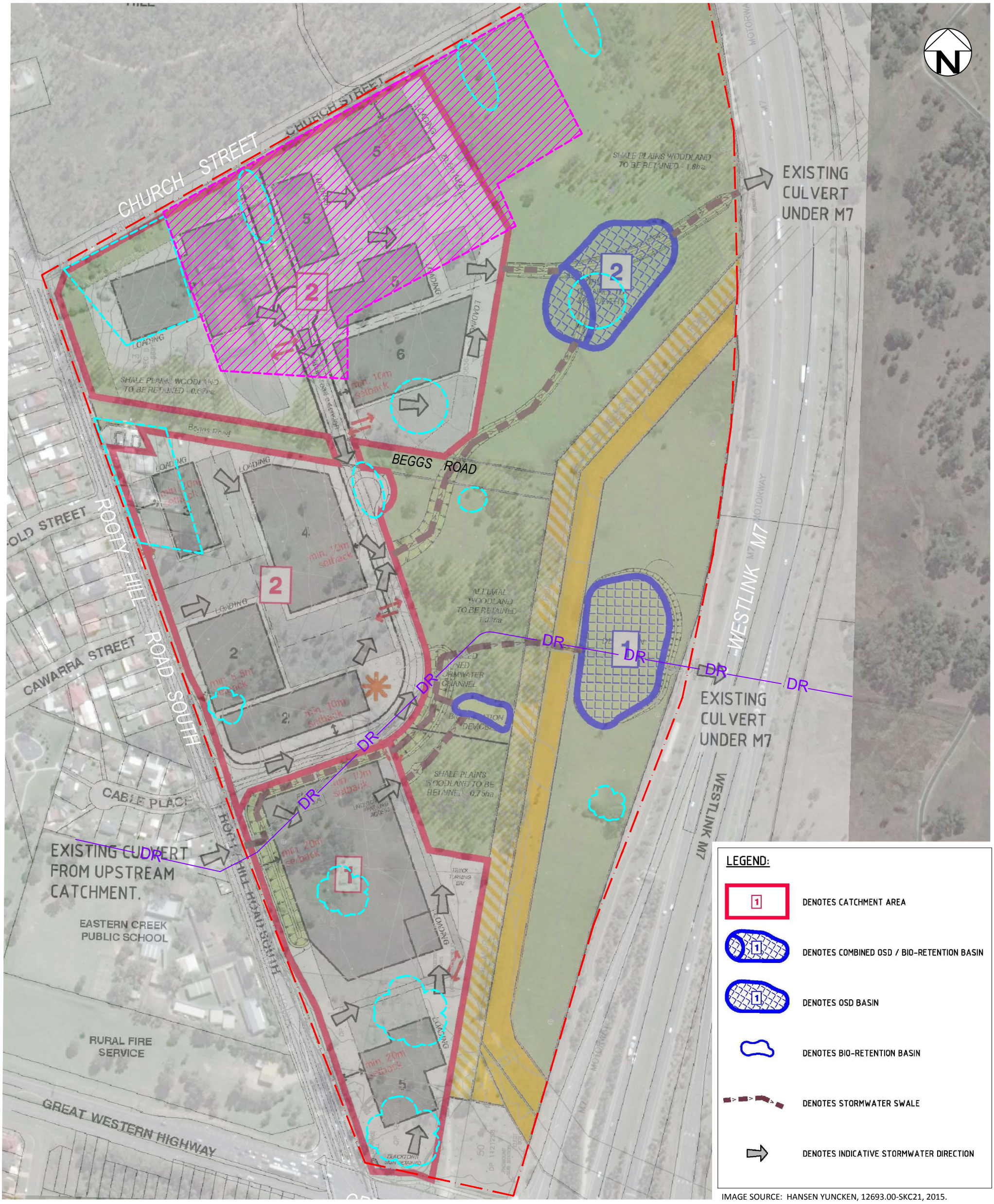


IMAGE SOURCE: HANSEN YUNCKEN, 12693.00-SKC21, 2015.

revision	no.	description	drawn	approved	date
	A	ORIGINAL ISSUE			

LEGEND

- APPROXIMATE SITE BOUNDARY
- SUSPECTED ASBESTOS IMPACT
- FORMER MARKET GARDEN
- DR — STORM DRAINAGE CHANNEL

NOTE:
ALL LOCATION ARE APPROXIMATE
DIMENSIONS IN METERES.

50 0 50 100 150

Scale (metres) 1:3000

drawn	MV
approved	MD
date	20/07/15
scale	AS SHOWN
original size	A3

coffey

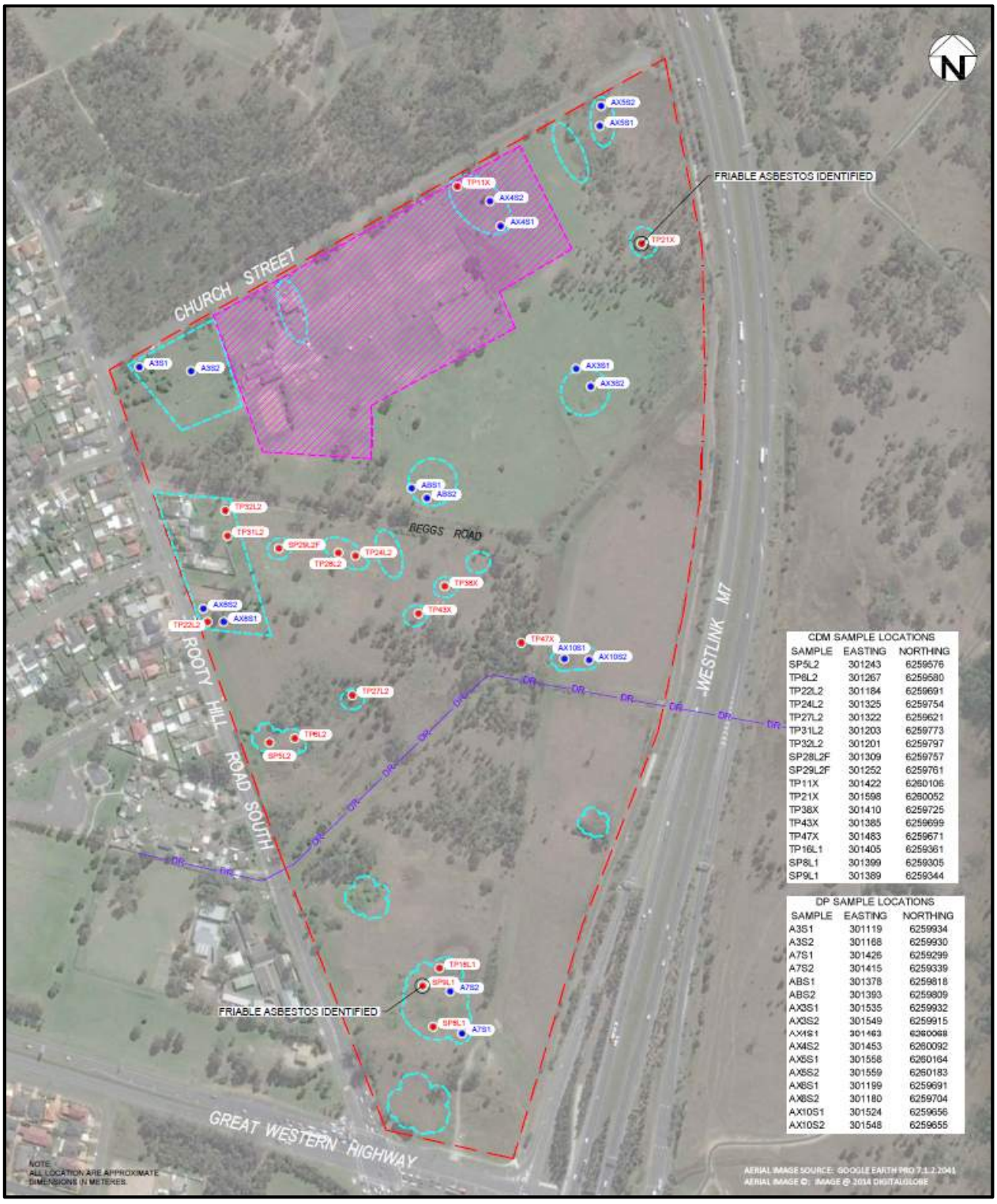
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project: REVISED EARLY WORKS REMEDIATION ACTION PLAN BETWEEN M7 MOTORWAY, ROOTY HILL ROAD SOUTH AND CHURCH STREET, EASTERN CREEK, NSW

title: DRAINAGE CHANNEL

project no: ENAURHOD046_3AC_R01 | figure no: FIGURE 4 | rev: A

PLOT DATE: 21/07/2015 12:17:17 PM DWG FILE: F:\ENVI\PROJECTS\ENAURHOD\ENAURHOD04 GOVIND\ENAURHOD04600\04699\ENAURHOD046_3 WESTERN SYDNEY PARKLANDS TRUST\ENAURHOD046_3AC EASTERN CREEK BUSINESS HUB\3. DRAWINGS\COFFEY FIGURES\ENAURHOD046_3AC_R01_D02.DWG



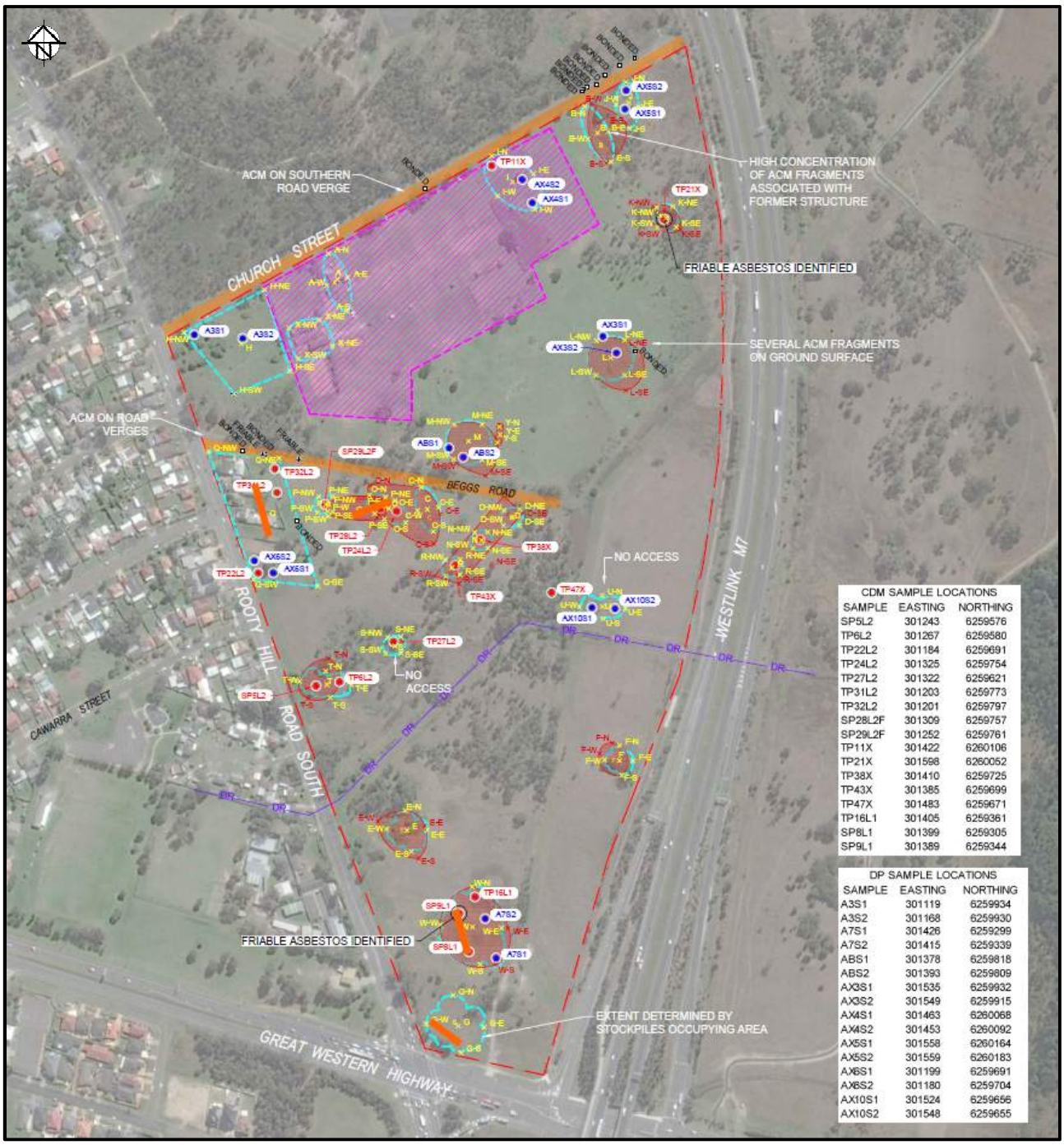
Base Map Source – RAP, Coffey (2015)

LEGEND

Approximate Site Boundary

High Likelihood Zones (Coffey, 2015)

Figure 2 – Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

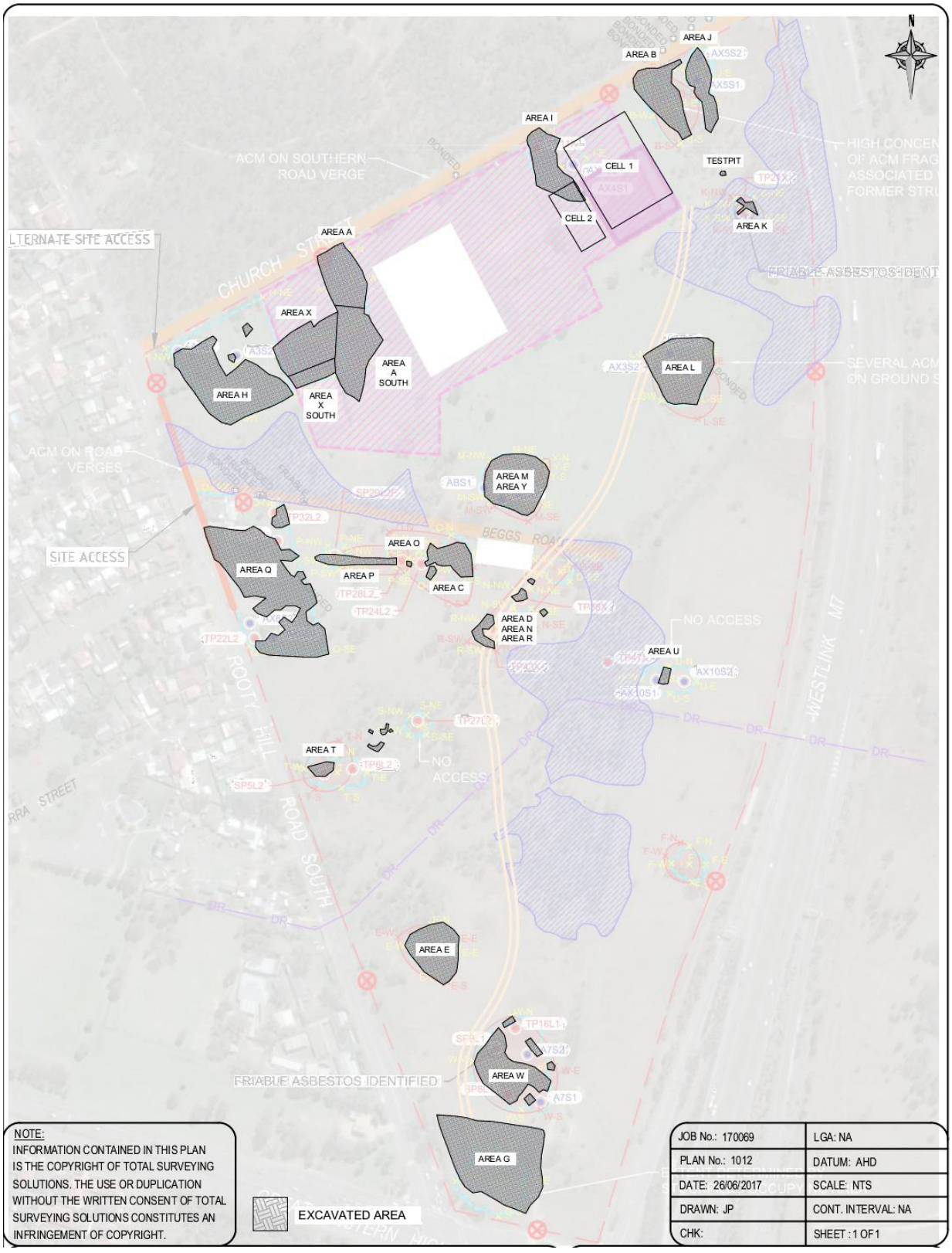


Base Map Source – Coffey, 2016, Suspected and actual of ACM occurrences

Figure 3 – Updated Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

LEGEND

- Approximate Site Boundary
- Suspected/Proposed Asbestos Impact (Coffey, 2016)
- Revised Suspected Areas of ACM Occurrences (Coffey, 2016)



Base Map Source – Total Surveying Solutions, 2017, Final ACM Areas Plan 1012.

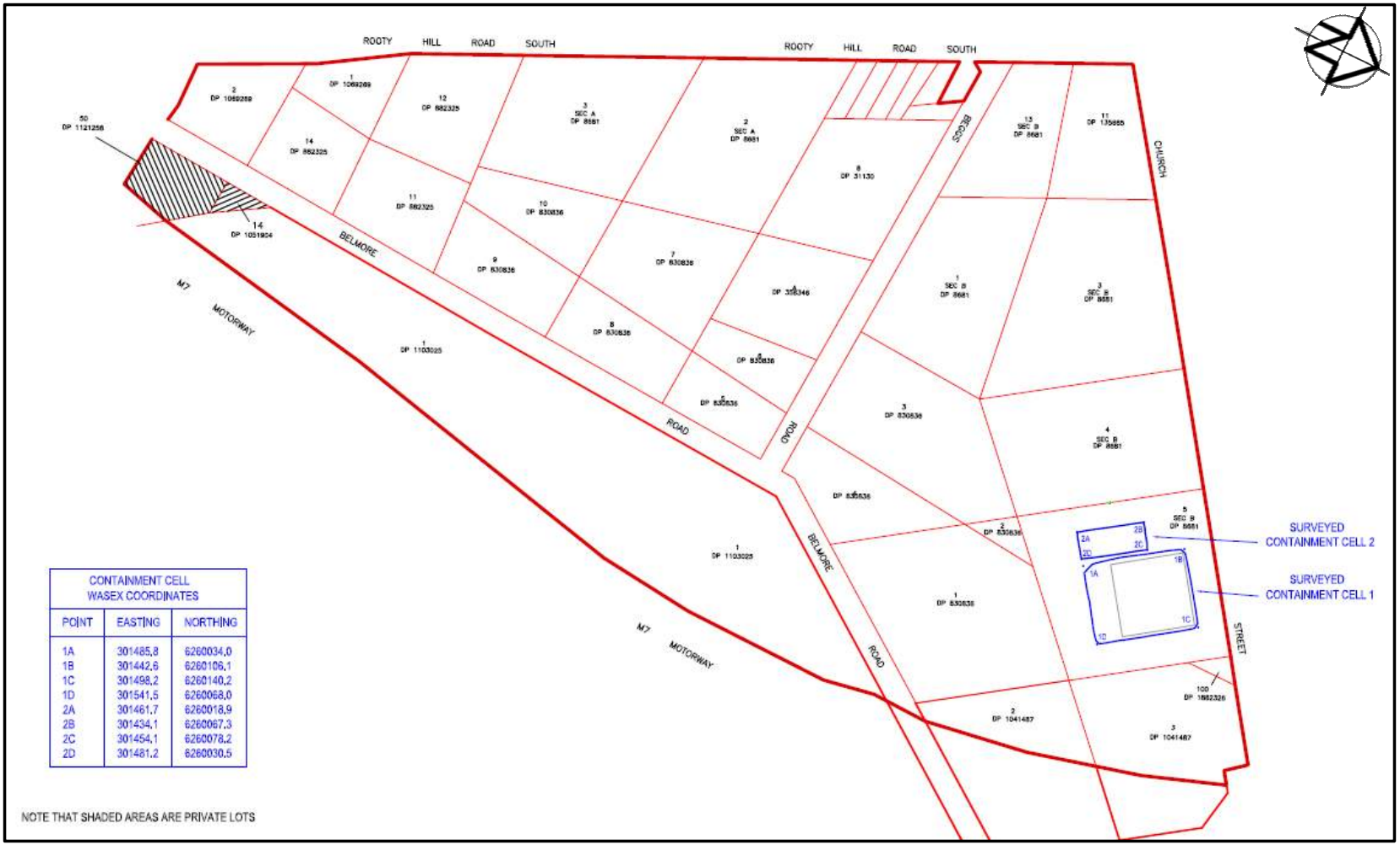
LEGEND

Approximate Site Boundary

Suspected/Proposed Asbestos Impact (Coffey, 2016)

Excavated Areas

Figure 4 – Excavated Areas and Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

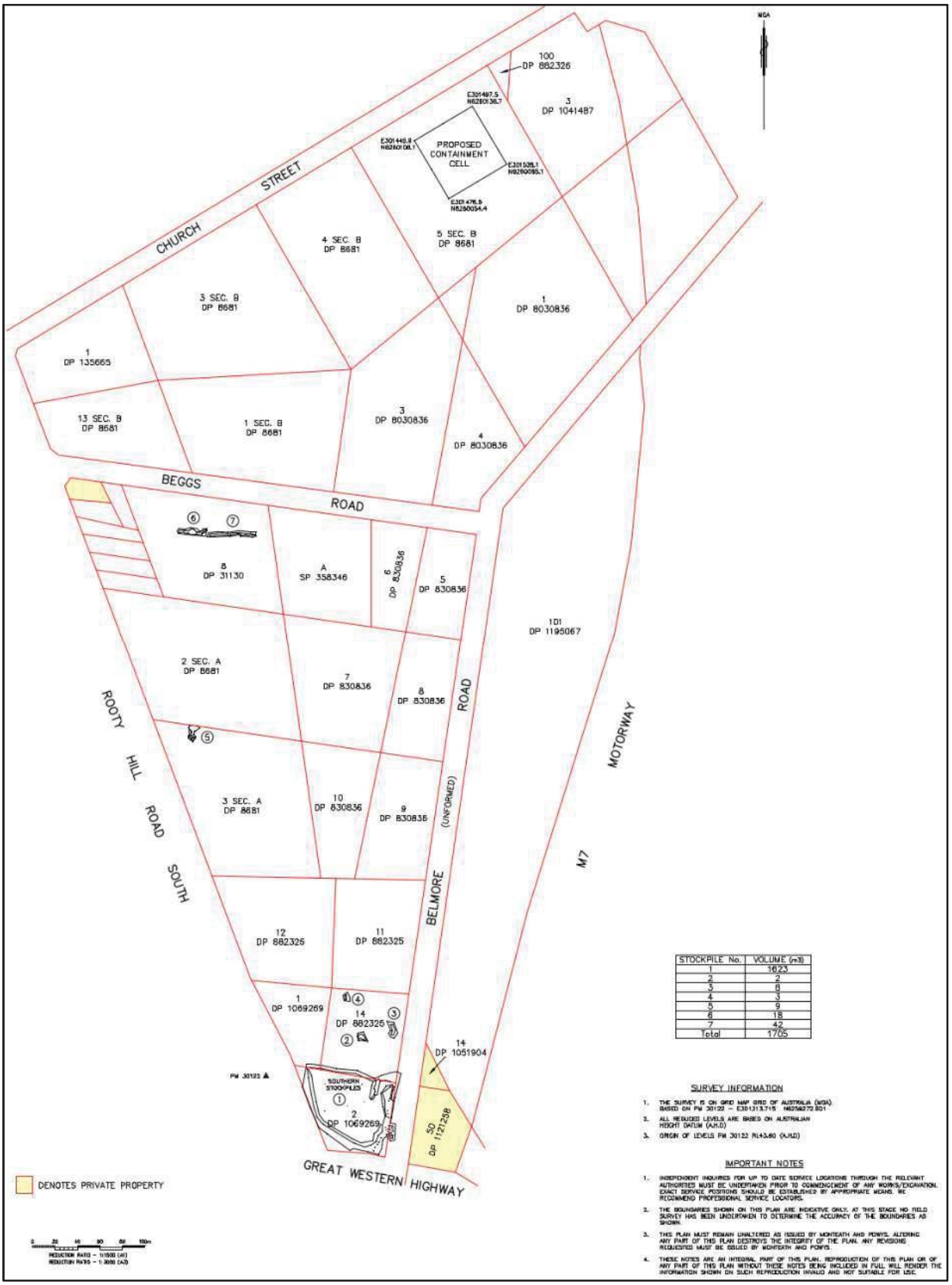


Base Map Source – Total Survey Solutions, containment Cell Overlayed With Buildings, Plan No. 1014, 2017

LEGEND

Site boundary

Figure 4 – Site Survey Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



Base Map Source – Monteath & Powys, 2017, Stockpile Survey, Ref No:16/0419.

Figure 6 – Excavated Areas and Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

N

AREA J

AREA B

AX5S2

AX5S1

J-N

J-E

B-W

B-S

AREA I

CELL 1

CELL 2

AX4S1

TESTPIT

TP21X

AREA K

K-NW

K-NE

K-SW

K-SE

HIGH C
OF ACM
ASSOC
FORME

FRIABLE ASBESTOS

EXCAVATED AREA

BONDED

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DRAWING: FINAL ACM AREAS	JOB No.: 170069 / LGA: NA
	PLAN No.: 1012 / DATUM: AHD
CLIENT: ENVIROPACIFIC	DATE: 26/06/2017 / SCALE: 1:1000
PROJECT: ROOTY HILL	DRAWN: JP / CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK: / SHEET :1 OF 6

ATE SITE ACCESS

CHURCH STREET

AREA A

AREA A SOUTH

AREA X

AREA X SOUTH

AREA H

EXCAVATED AREA

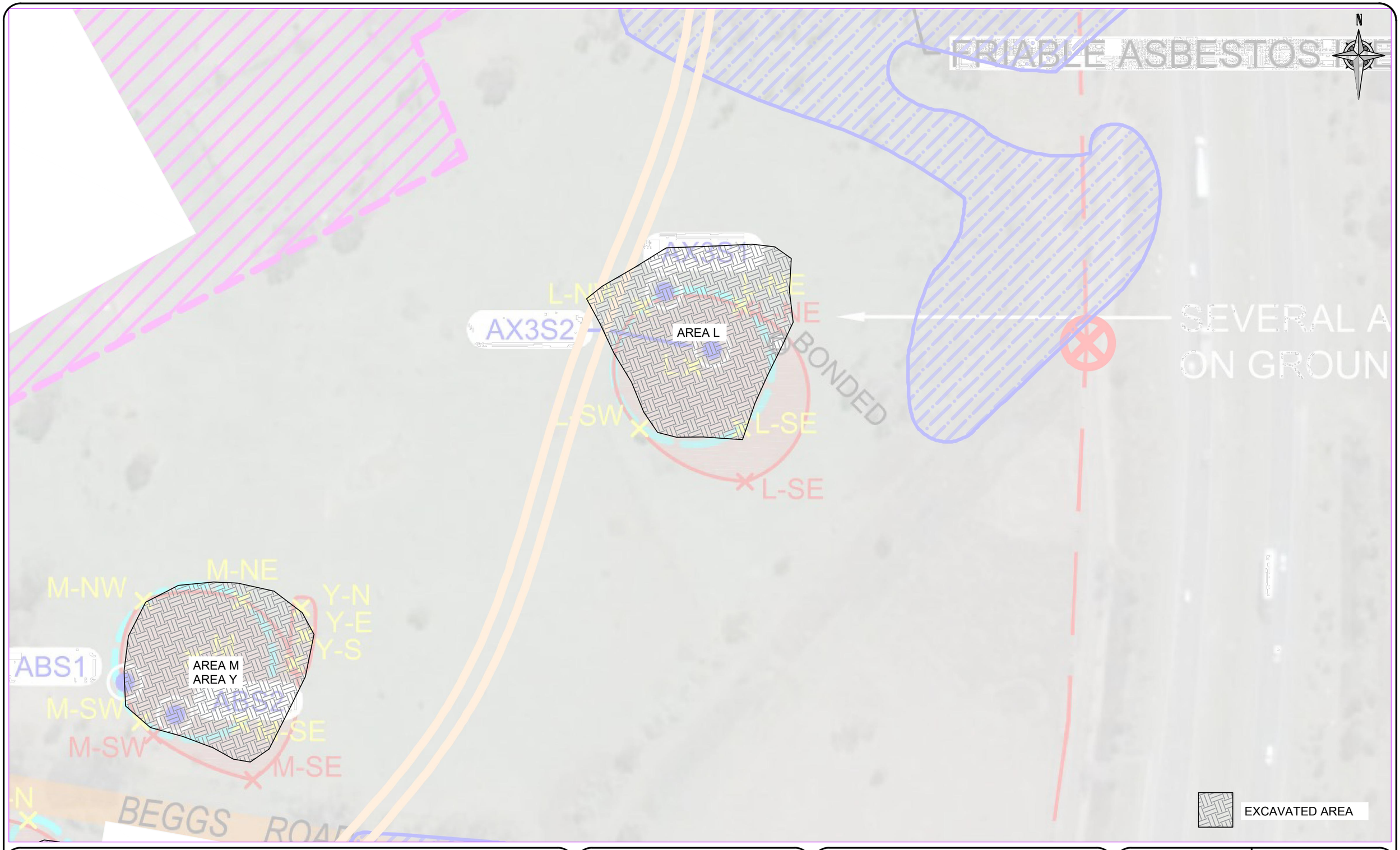
ON ROAD VERGES

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	PLAN No.: 1012	DATUM: AHD
CLIENT: ENVIROPACIFIC	DATE: 26/06/2017	SCALE: 1:1000
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK:	SHEET :2 OF 6



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		PLAN No.: 1012	DATUM: AHD
CLIENT:	ENVIROPACIFIC	DATE: 26/06/2017	SCALE: 1:1000
PROJECT:	ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS:	CHURCH ST, ROOTY HILL	CHK:	SHEET :3 OF 6

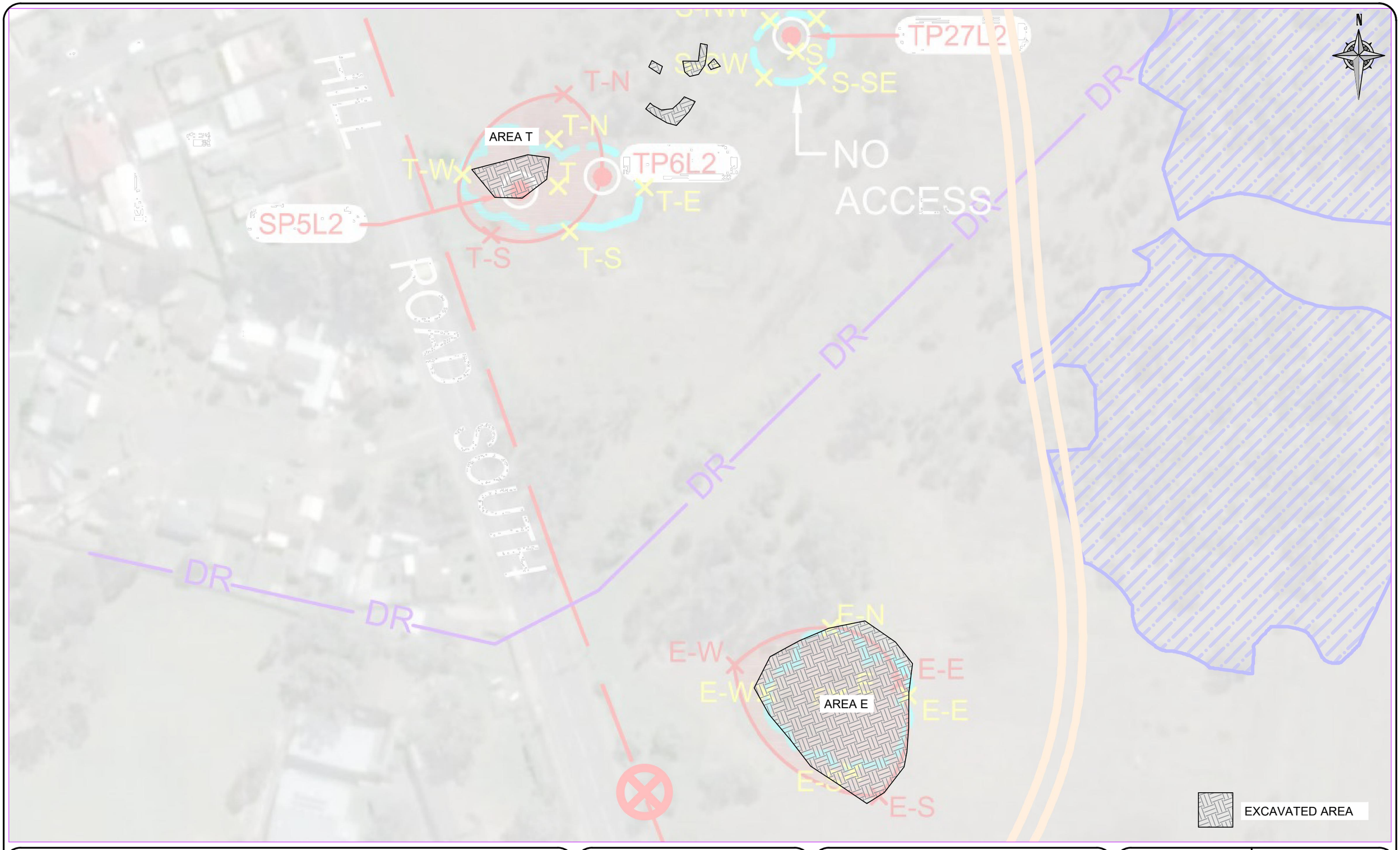


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DRAWING: FINAL ACM AREAS	JOB No.: 170069
	PLAN No.: 1012
CLIENT: ENVIROPACIFIC	DATE: 26/06/2017
PROJECT: ROOTY HILL	DRAWN: JP
ADDRESS: CHURCH ST, ROOTY HILL	CHK:

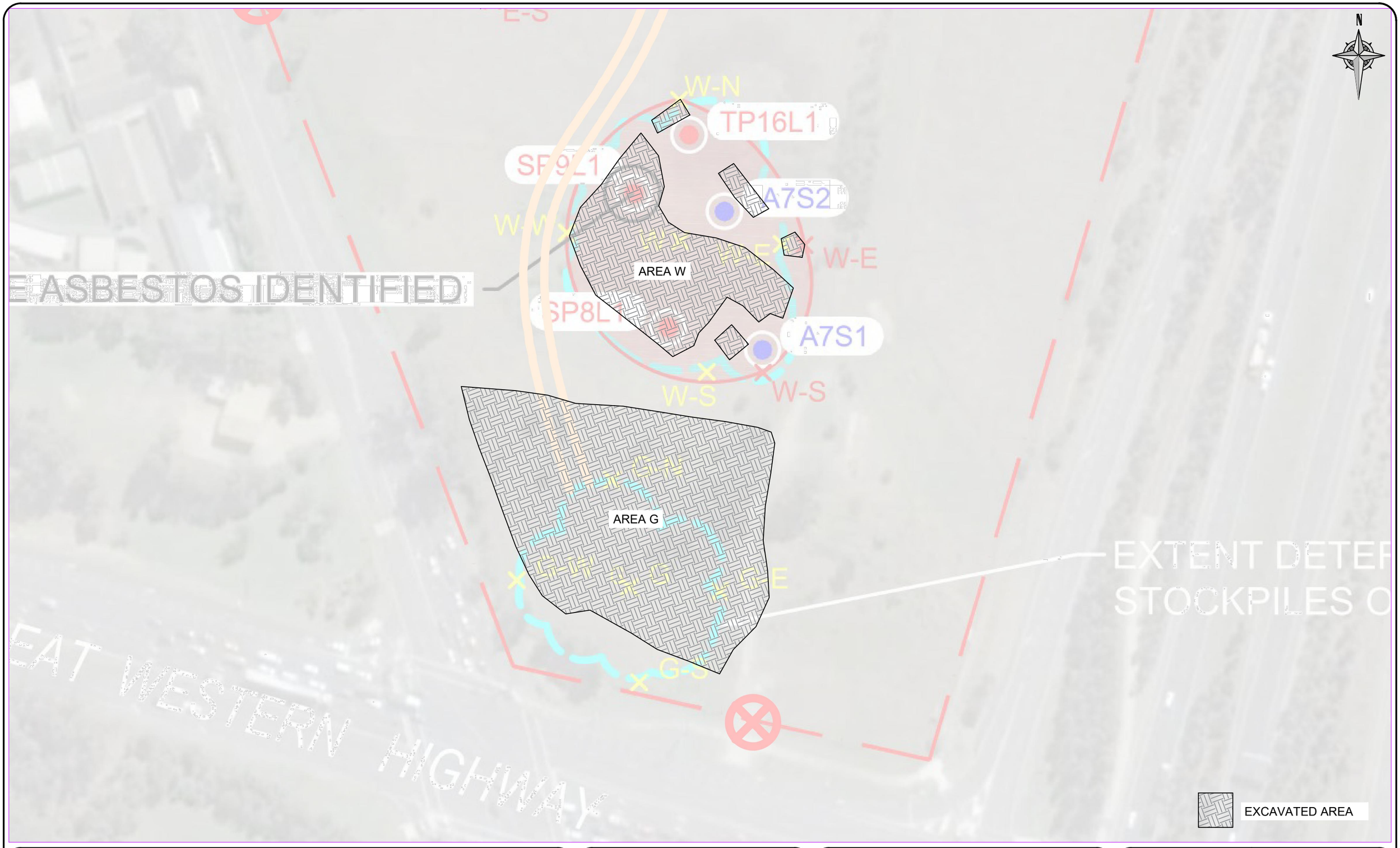
LGA: NA	
DATUM: AHD	
SCALE: 1:1000	
CONT. INTERVAL: NA	
SHEET :4 OF 6	



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DRAWING: FINAL ACM AREAS		JOB No.: 170069	LGA: NA
		PLAN No.: 1012	DATUM: AHD
CLIENT:	ENVIROPACIFIC	DATE: 26/06/2017	SCALE: 1:1000
PROJECT:	ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS:	CHURCH ST, ROOTY HILL	CHK:	SHEET :5 OF 6

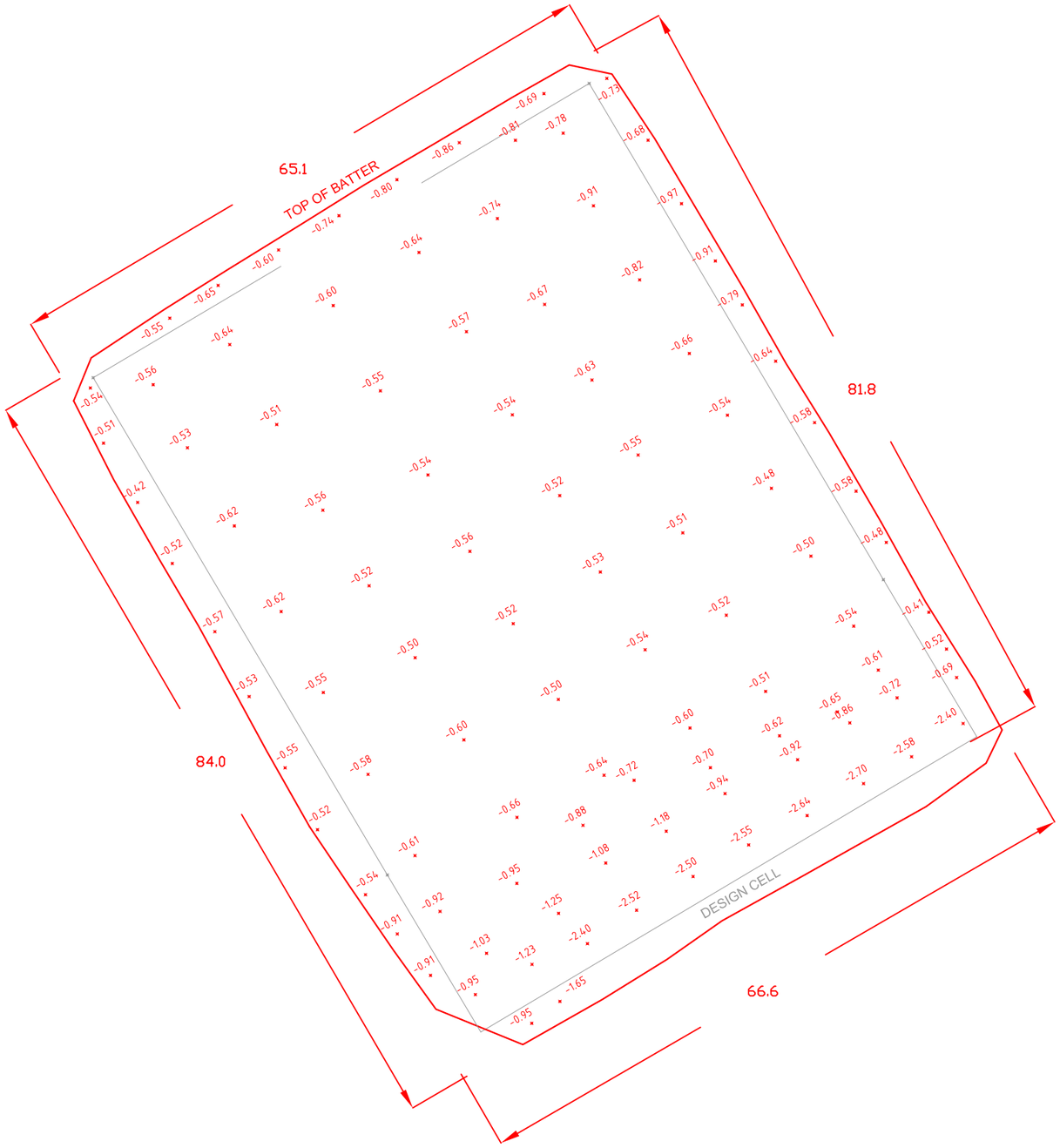


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	PLAN No.: 1012	DATUM: AHD
CLIENT: ENVIROPACIFIC	DATE: 26/06/2017	SCALE: 1:1000
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK:	SHEET :6 OF 6

PLAN VIEW



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

VOLUME OF EXCAVATED MATERIAL TO GROUND LEVEL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-11350.699
Total fill	0.000
Total balance	-11350.699

ie excess of cut over fill 11350.699m3

VOLUME OF EXCAVATED MATERIAL TO CAPPING LAYER

Volumes from tin "tin Exist Ground Level down 200" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-10230.285
Total fill	0.000
Total balance	-10230.285

ie excess of cut over fill 10230.285m3

VOLUME OF FILLED MATERIAL

Volumes from tin "tin Surveyed Cell Floor Pick Up Extension 170508" to tin "tin Surveyed Cell Fill Material 170522 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	- 0.000
Total fill	7210.464
Total balance	- 0.000

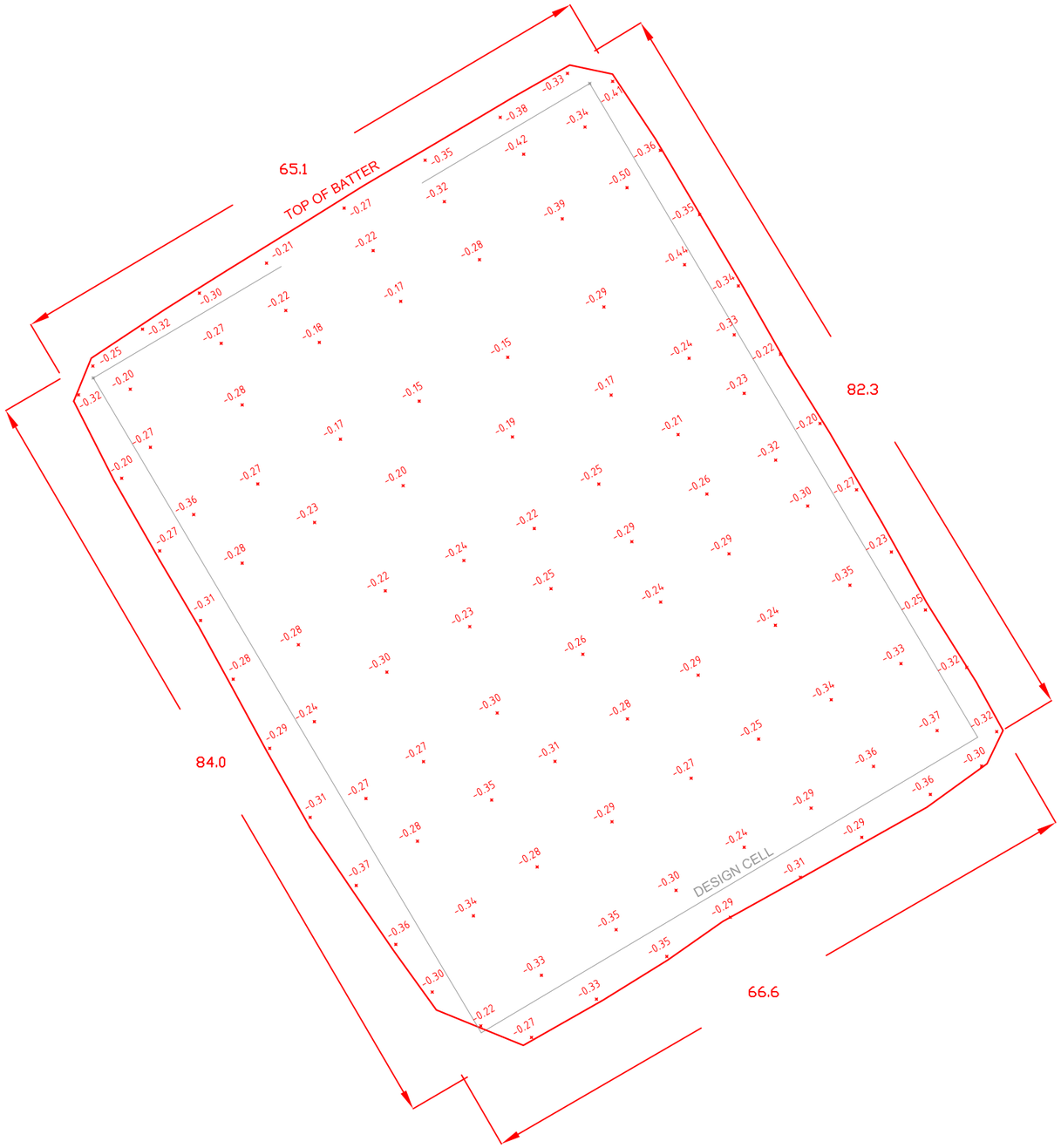
ie excess of fill over cut 7210.464m3

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DRAWING: Volume of Material in Containment Cell	JOB No.: 170069	LGA:
	PLAN No.: 1010	DATUM: N/A
CLIENT: EnviroPacific	DATE: 22/05/17	SCALE: NTS
PROJECT: Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS: Church St, Rooty Hill	CHK:	SHEET :1 OF 1

PLAN VIEW



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

VOLUME OF EXCAVATED MATERIAL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-11350.699
Total fill	0.000
Total balance	-11350.699
ie excess of cut over fill	11350.699m3

VOLUME OF FILLED MATERIAL

Volumes from tin "tin Surveyed Cell Floor Pick Up Extension 170508" to tin "tin Surveyed Cell Fill Material 170602 - (with no plan polygon)

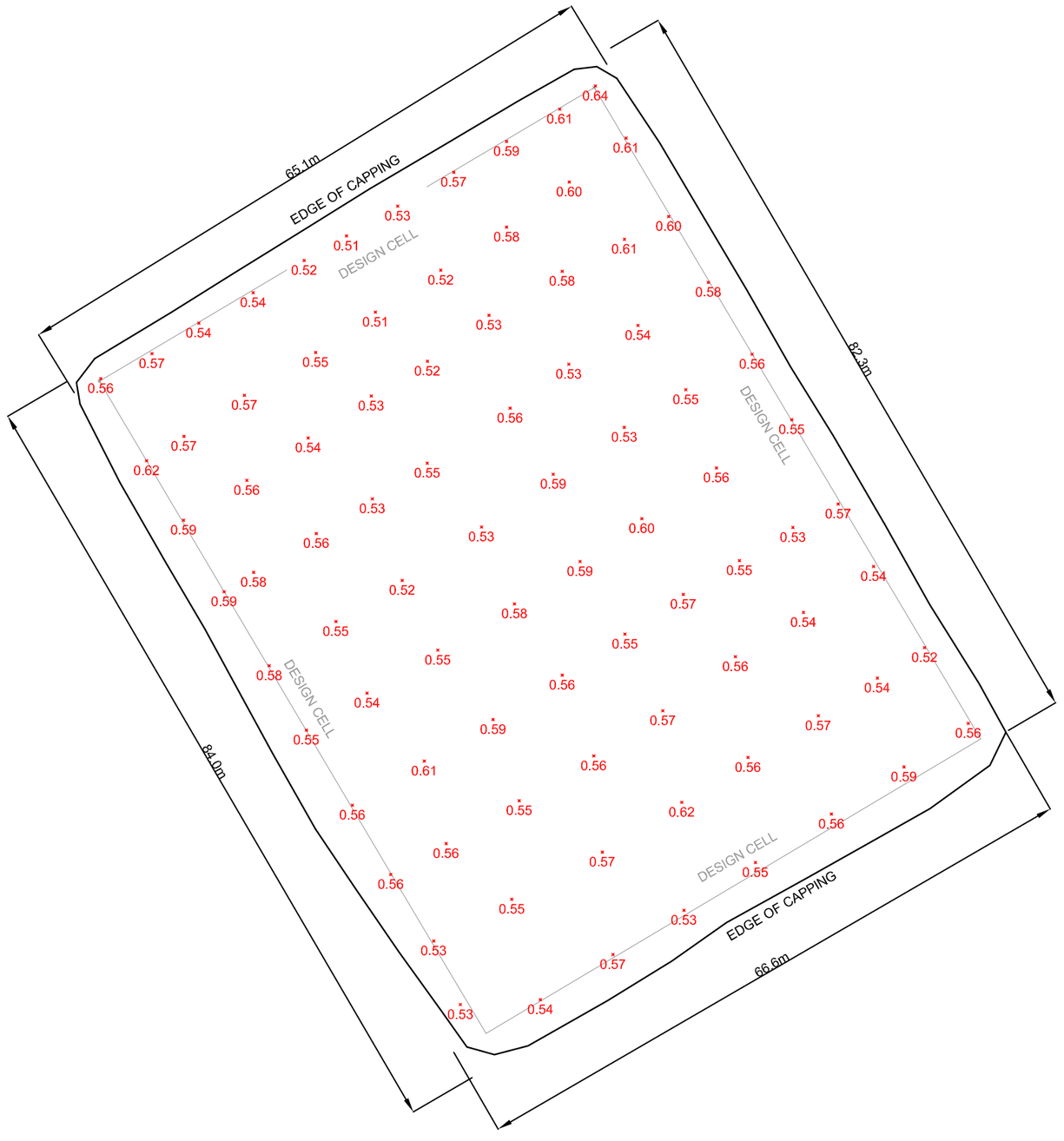
cut volumes are negative
fill volumes are positive

Total cut	- 0.000
Total fill	9813.612
Total balance	- 0.000
ie excess of fill over cut	9813.612m3

TOTAL SURVEYING SOLUTIONS
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DRAWING: Volume of Material in Containment Cell		JOB No.: 170069	LGA:
		PLAN No.: 1011	DATUM: N/A
CLIENT:	EnviroPacific	DATE: 02/06/17	SCALE: NTS
PROJECT:	Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS:	Church St, Rooty Hill	CHK:	SHEET :1 OF 1



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

TOTAL SURVEYING SOLUTIONS

SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570

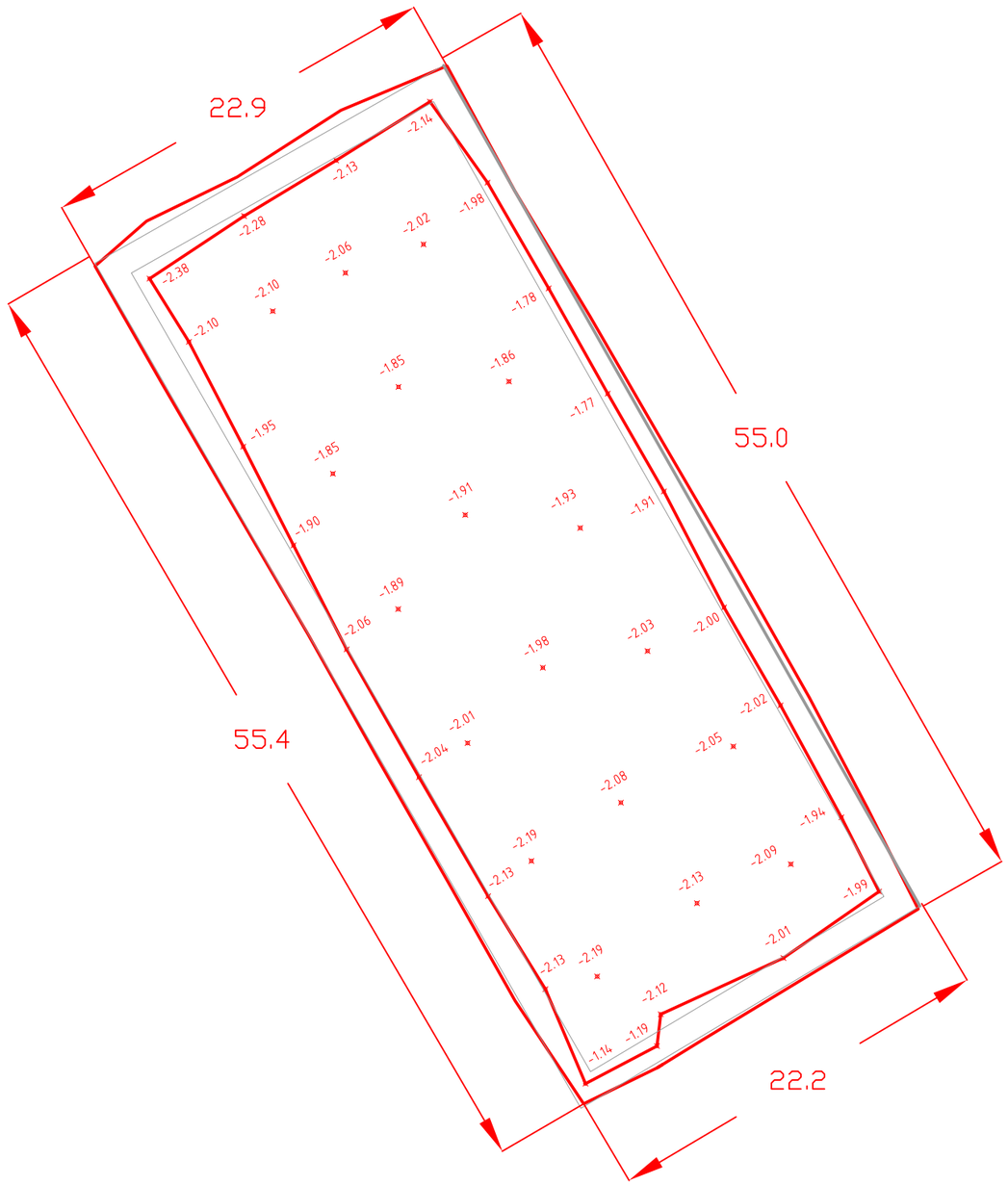
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NOTE:

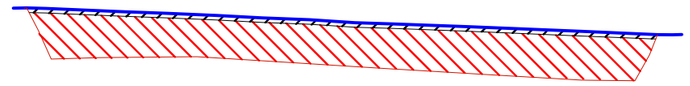
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DRAWING: CELL ONE CAPPING CONFORMANCE	JOB No.: 170069	LGA:
	PLAN No.: 1016	DATUM: N/A
CLIENT: ENVIROPACIFIC	DATE: 27/06/17	SCALE: NTS
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH STREET, ROOTY HILL	CHK:	SHEET :1 OF 1

PLAN VIEW



SECTION VIEW



Existing Ground Level
Surveyed Excavated Cell
Top of Capping Material
Capping Material
Asbestos Imported Soils

Note: Capping material has minimum 0.200m thickness above Asbestos Imported Soils.
Asbestos Imported Soils volume of 2,011m3 leaves Top of Capping Material 0.200m Below Existing Ground Level.

VOLUME OF EXCAVATED MATERIAL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Second Cell Floor Pick Up 170606" - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-2259.616
Total fill	0.000
Total balance	-2259.616
ie excess of cut over fill	2259.616

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DRAWING: Containment Cell Volume of Material Removed	JOB No.: 170069	LGA:
	PLAN No.: 1006A	DATUM: N/A
CLIENT: EnviroPacific	DATE: 09/03/17	SCALE: NTS
PROJECT: Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS: Church St, Rooty Hill	CHK:	SHEET :1 OF 1



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF IMPORTED FILL TO TOP OF CAPPING LAYER

TOTAL SURVEYING SOLUTIONS

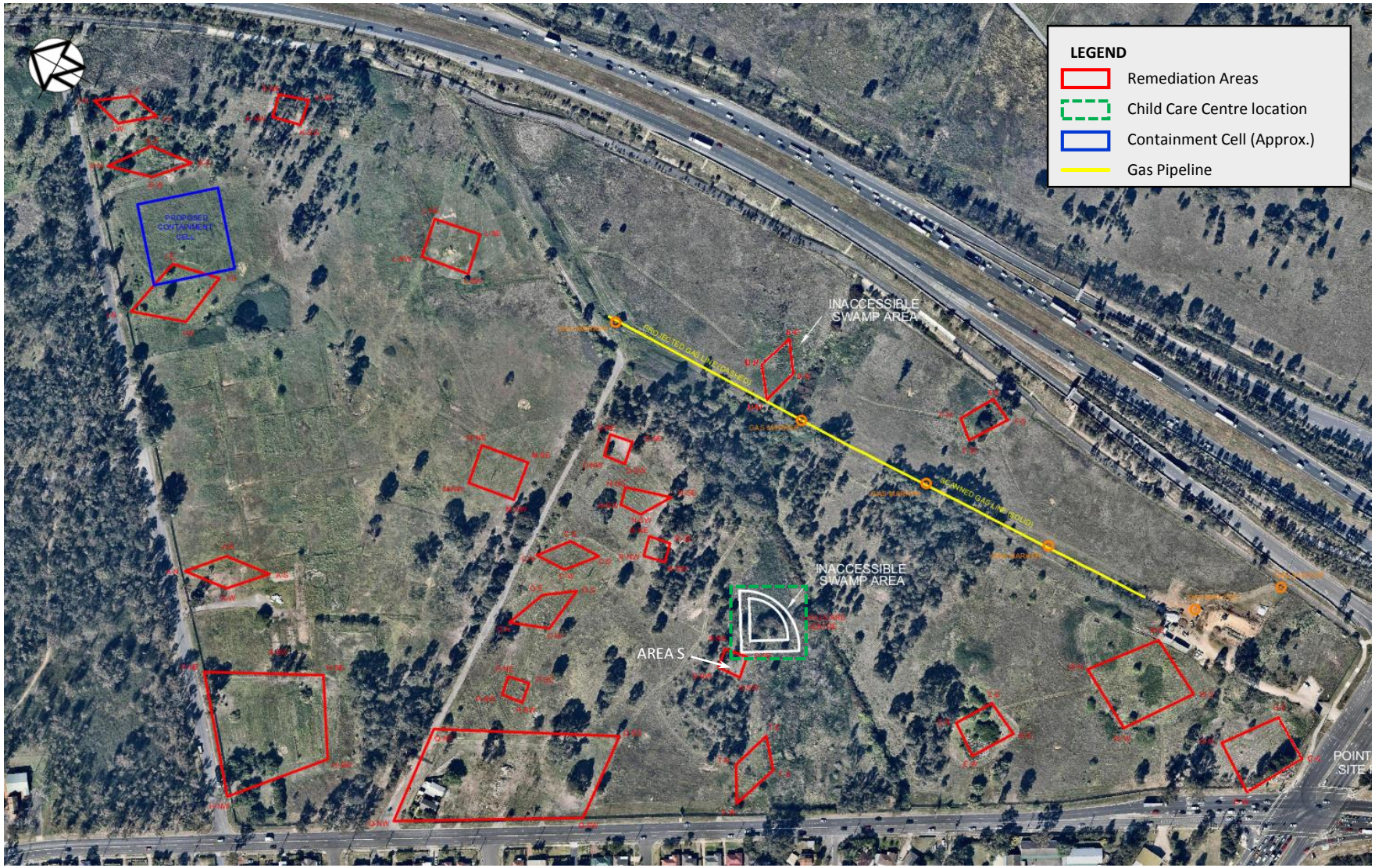
SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570

Ph. (02) 4655 4035 Fax. (02) 46 55 7094 Email: tss@totalsurveying.com.au

NOTE:

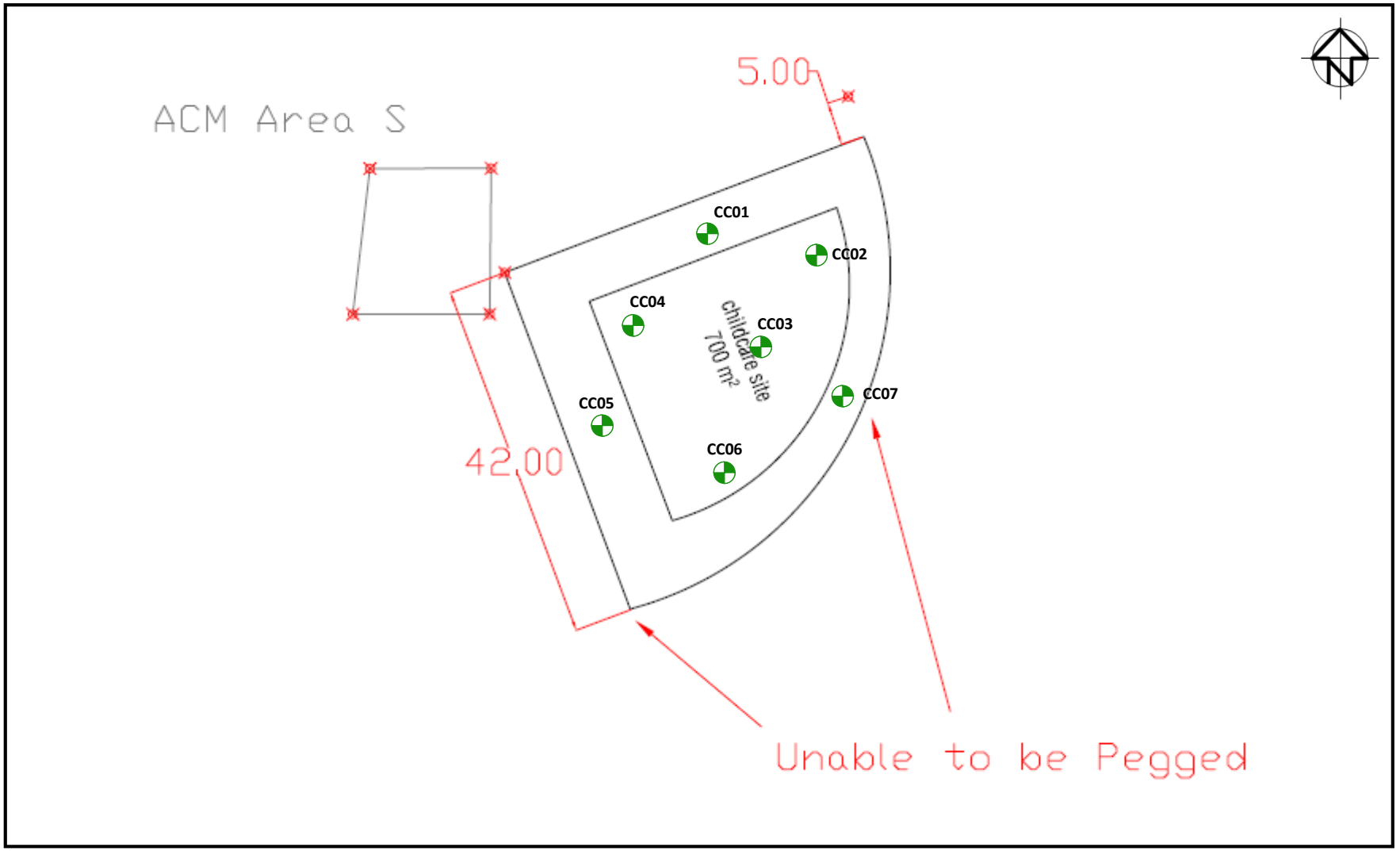
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DRAWING: CELL TWO CAPPING CONFORMANCE		JOB No.: 170069	LGA:
		PLAN No.: 1019	DATUM: N/A
CLIENT: ENVIROPACIFIC		DATE: 03/07/17	SCALE: NTS
PROJECT: ROOTY HILL		DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH STREET, ROOTY HILL		CHK:	SHEET :1 OF 1



Base Map Source – Total Survey Solutions, Plan Showing Survey of features, Plan No. 170069, 2017

Figure 2 – Site Layout
Child Care Centre
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



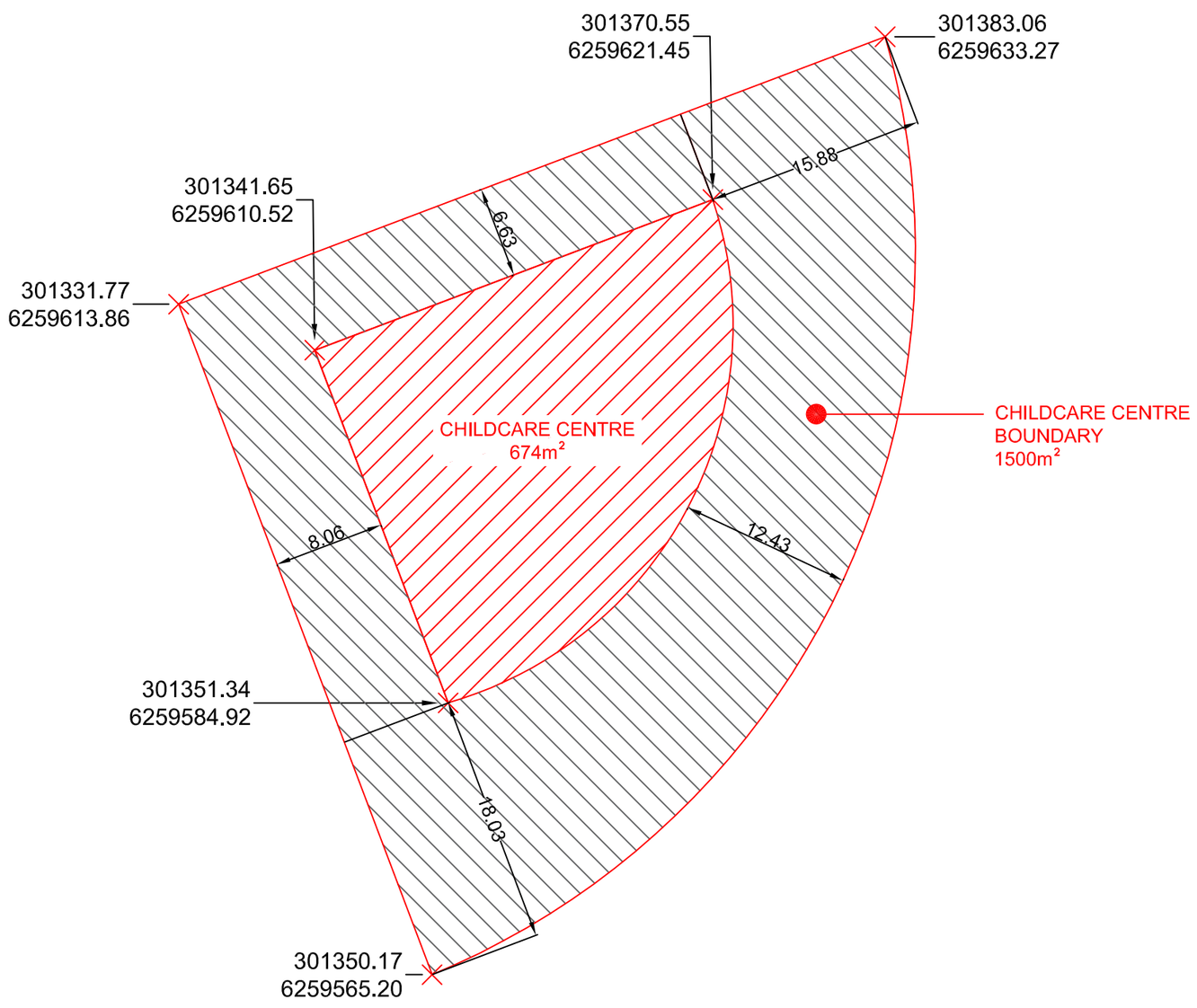
Total Survey Solutions, Set out sketch, Plan No. 170069, 2017

LEGEND

Site boundary

Sampling Location

Figure 3 – Sampling Location Plan
Child Care Centre
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



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DRAWING: REVISED CHILDCARE CENTRE COORDINATES	JOB No.: 170069	LGA: NA
	PLAN No.: 1003A	DATUM: NA
CLIENT: ENVIROPACIFIC	DATE: 26/07/2017	SCALE: NTS
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK:	SHEET :1 OF 1

Appendix E Consultant's Summary Results Tables

Douglas Partners
Geotechnics · Environment · Groundwater

Table 5 - Results of Soil and Materials Analysis (All results in mg/kg unless otherwise stated)

Sample ID	Fill/Natural	Heavy Metals								PAH		TPH		Benzene	Toluene	Ethylbenzene	Total Xylene	PCB[2]	OCP[2]	Phenols	Asbestos	Asbestos fragment
		As	Cd	Cr[1]	Cu	Pb	Hg	Ni	Zn	B(a)P	total[2]	C6-C9	C10-C36									
TP1/0.9-1	F	6	<0.5	18	16	37	<0.1	13	42	<0.05	0.2	<25	<250	<0.5	<0.5	<1	<3	<0.6	<PQL	<5.0	ND	-
TP3/1.6-1.8	F	8	<0.5	30	8	27	<0.1	6	11	<0.05	<PQL	<25	<250	<0.5	<0.5	<1	<3	<0.6	<PQL	<5.0	ND	-
TP5/0.1-0.4	F	4	<0.5	16	30	64	<0.1	15	83	0.1	0.9	<25	230	<0.5	<0.5	<1	<3	<0.6	<PQL	<5.0	ND	-
TP7/0.1-0.3	F	5	<0.5	25	35	68	<0.1	22	***440***	0.5	4.1	<25	110	<0.5	<0.5	<1	<3	<0.6	<PQL	<5.0	ND	-
TP9/1.5-1.7	F	10	<0.5	36	15	35	<0.1	9	26	<0.05	<PQL	<25	<250	<0.5	<0.5	<1	<3	<0.6	<PQL	<5.0	ND	-
BD1 010909	F	8	<0.5	33	9	30	<0.1	7	15	-	-	-	-	-	-	-	-	-	-	-	-	-
TP10/0.1-0.3	F	5	<0.5	22	39	150	<0.1	32	120	0.07	0.37	<25	130	<0.5	<0.5	<1	<3	<0.6	<PQL	<5.0	ND	-
A1S1	N	9	<0.5	37	15	32	<0.1	7	30	-	-	-	-	-	-	-	-	-	<PQL	-	-	-
A1S2	N	6	<0.5	19	10	23	<0.1	5	36	-	-	-	-	-	-	-	-	-	<PQL	-	-	-
A1S3	N	10	<0.5	22	29	59	<0.1	9	100	-	-	-	-	-	-	-	-	-	<PQL	-	-	-
A2S1	F	-	-	-	-	-	-	-	-	<0.05	<PQL	-	-	-	-	-	-	-	-	-	ND	-
A2S2	F	8	<0.5	29	24	45	<0.1	12	***210***	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
A3S1	F	6	<0.5	22	25	46	<0.1	13	140	-	-	-	-	-	-	-	-	-	<PQL	-	ND	***AD***
A3S2	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	
A4S2	F	14	<0.5	39	18	39	<0.1	6	74	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
A4S3	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
A5S1	N	19	<0.5	27	11	68	0.3	7	43	-	-	-	-	-	-	-	-	-	<PQL	-	-	-
A5S2	N	5	<0.5	33	11	31	1	5	52	-	-	-	-	-	-	-	-	-	<PQL	-	-	-
BD5 040909	N	6	0.2	31	10	35	***1.23***	7	69	<0.05	<PQL	-	-	-	-	-	-	-	-	-	-	-
A6S1	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
A6S2	F	7	<0.5	24	35	110	0.2	7	***350***	-	-	-	-	-	-	-	-	-	-	-	ND	-
BD4 030909	F	8	<0.5	27	40	110	0.2	7	***340***	0.06	0.16	-	-	-	-	-	-	-	-	-	-	-
A7S1	F	11	<0.5	33	15	33	<0.1	8	64	-	-	-	-	-	-	-	-	-	-	-	ND	***AD***
A7S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<PQL	-	ND	
Site Assessment Criteria (SAC)																						
PPBIL / EIL [3i]		20	3	400%	100	600	1	60	200													
HIL[3ii] - Parks recreational open space		200	40	24%	2000	600	30	600	14000	2	40	65 [5]	1000 [5]	1 [5]	1.4 [5]	3.1 [5]	14 [5]	20	20/100/400/20 [4]	17000	0.02% / 0.001%[6i]	Not in top 100mm[6i]
HIL[3iii] - Commercial/industrial		500	100	60%	5000	1500	75	3000	35000	5	100	65 [5]	1000 [5]	1 [5]	1.4 [5]	3.1 [5]	14 [5]	50	50/250/1000/50 [4]	42500	0.05% / 0.001%[6ii]	Not in top 100mm[6ii]

Notes:

1	All Chromium are assumed to exist in the stable Cr(III) oxidation state, as Cr(VI) will be too reactive and unstable under the normal environment
2	where analytical results below laboratory practical quantitation limit (PQL) for all compounds, results quoted as <PQL of most compounds
3i	Provisional Phytotoxicity Based Investigation Level / Ecological Investigation Level
3ii	Health based investigation levels for parks and receational open space
3iii	Health based investigation levels for commercial or industrial sites
4	OCP thresholds given in order Aldrin+Dieldrin/Chlordane/ DDD+DDE+DDT/Heptachlor
5	Service Station Guidelines
6i	0.02% asbestos cement / 0.001% for asbestos fibres / No asbestos in top 100mm (WA Department of Health)
6ii	0.05% asbestos cement / 0.001% for asbestos fibres / No asbestos in top 100mm (WA Department of Health)
AD	Asbestos Detected
ND	Not detected
-	not analysed/ not applicable
PQL	Laboratory practical quantative limit, Envirolab
Bold	exceeds PPBIL / EIL; does not exceed health based SAC
Bold	exceeds health-based SAC
BD1 010909	Field duplicate of sample TP9/1.5-1.7
BD4 030909	Field duplicate of sample A6S2
BD5A 040909	Field duplicate of sample A5S2
N/F	Natural/ Filling.

Table 5 - Results of Soil and Materials Analysis (All results in mg/kg unless otherwise stated)

Sample ID	Fill/Natural	Heavy Metals								PAH		TPH[5]		Benzene[5]	Toluene[5]	Ethylbenzene[5]	Total Xylene[5]	PCB[2]	OCP[2]	Phenols	Asbestos	Asbestos fragment
		As	Cd	Cr[1]	Cu	Pb	Hg	Ni	Zn	B(a)P	total[2]	C6-C9	C10-C36									
A8S1	F	4	2.9	15	20	130	<0.1	9	***1600***	-	-	-	-	-	-	-	-	-	<PQL	-	-	***AD***
A8S2	F	7	<0.5	24	27	50	0.3	8	81	-	-	-	-	-	-	-	-	-	<PQL	-	-	
A9S1	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
A9S2	F	6	<0.5	27	33	78	<0.1	23	71	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
Ax1S1	N	7	<0.5	26	15	47	<0.1	6	72	-	-	-	-	-	-	-	-	-	-	-	ND	-
Ax2S1	F	10	<0.5	28	24	150	<0.1	7	76	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
Ax2S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
Ax3S1	F	7	<0.5	19	18	48	<0.1	9	73	-	-	-	-	-	-	-	-	-	<PQL	-	ND	***AD***
Ax3S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	
Ax4S1	N	6	0.6	20	29	***1400***	<0.1	8	620	-	-	-	-	-	-	-	-	-	<PQL	-	ND	***AD***
Ax4S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	ND	
Ax5S1	N	5	<0.5	17	18	46	<0.1	8	120	-	-	-	-	-	-	-	-	-	<PQL	-	ND	***AD***
Ax5S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	
Ax6S1	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	***AD***
Ax6S2	F	11	<0.5	46	21	120	<0.1	10	68	-	-	-	-	-	-	-	-	-	<PQL	-	ND	
Ax7S1	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
Ax7S2	F	9	<0.5	33	25	65	<0.1	22	92	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
Ax8S1	F	9	<0.5	23	23	48	<0.1	5	72	-	-	-	-	-	-	-	-	-	<PQL	-	ND	-
Ax8S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
Ax9S1	F	6	0.5	29	29	130	0.2	13	***220***	-	-	-	-	-	-	-	-	-	-	-	ND	-
Ax9S2	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-
Ax10S1	N	5	<0.5	16	16	32	<0.1	8	35	-	-	-	-	-	-	-	-	-	-	-	ND	***AD***
Ax10S2	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	
Site Assessment Criteria (SAC)																						
PPBIL / EIL [3i]		20	3	400%	100	600	1	60	200													
HIL[3ii] - Parks recreational open space		200	40	24%	2000	600	30	600	14000	2	40	65 [5]	1000 [5]	1 [5]	1.4 [5]	3.1 [5]	14 [5]	20	20/100/400/20 [4]	17000	0.02% / 0.001%[6i]	Not in top 100mm[6i]
HIL[3iii] - Commercial/industrial		500	100	60%	5000	1500	75	3000	35000	5	100	65 [5]	1000 [5]	1 [5]	1.4 [5]	3.1 [5]	14 [5]	50	50/250/1000/50 [4]	42500	0.05% / 0.001%[6ii]	Not in top 100mm[6ii]

Notes:

1	All Chromium are assumed to exist in the stable Cr(III) oxidation state, as Cr(VI) will be too reactive and unstable under the normal environment
2	where analytical results below laboratory practical quantitation limit (PQL) for all compounds, results quoted as <PQL of most compounds
3i	Provisional Phytotoxicity Based Investigation Level / Ecological Investigation Level
3ii	Health based investigation levels for parks and receational open space
3iii	Health based investigation levels for commercial or industrial sites
4	OCP thresholds given in order Aldrin+Dieldrin/Chlordane/ DDD+DDE+DDT/Heptachlor
5	Service Station Guidelines
6i	0.02% asbestos cement / 0.001% for asbestos fibres / No asbestos in top 100mm (WA Department of Health)
6ii	0.05% asbestos cement / 0.001% for asbestos fibres / No asbestos in top 100mm (WA Department of Health)
AD	Asbestos Detected
ND	Not detected at laboratory reporting limit; No respirable fibres detected
-	not analysed/ not applicable
PQL	Laboratory practical quantative limit, Envirolab
Bold	exceeds PPBIL / EIL; does not exceed health based SAC
Bold	exceeds health-based SAC
BD1 010909	Field duplicate of sample TP9/1.5-1.7
BD4 030909	Field duplicate of sample A6S2
BD5A 040909	Field duplicate of sample A5S2
N/F	Natural/ Filling.

Table 1a - Heavy Metals, TPH, BTEX - Superlot 1

Sample Location						TP01L1		TP2L1		BH3L1					TP04L1		TP05L1				TP6L1		BH7L1					TP8L1		TP10L1		TP11L1	
Sample ID						TP01L1	TP01L1	TP2L1	TP2L1	BH3L1	BH3L1	BH3L1	BH3L1	QAQC13 (Intra Dupe for BH3L1)	TP04L1	TP04L1	TP05L1	TP05L1	TP5L1	TP5L1	TP6L1	TP6L1	BH7L1	BH7L1	BH7L1	BH7L1	QAQC14 (Intra Dupe for BH7L1)	TP8L1	TP8L1	TP10L1	TP10L1	TP11L1	TP11L1
Depth (m bgs)						0-0.05	0.45-0.55	0-0.05	0.1-0.15	0-0.05	0.1-0.15	4-4.1	5.5-5.6		0-0.05	0.1-0.15	SP	0-0.05	0-0.05	0.5-0.6	0-0.05	0.3-0.4	0-0.05	0.5-0.6	7-7.1	9.6-9.7		0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6
Date Sampled						13/09/2012	13/09/2012	12/09/2012	12/09/2012	17/09/2012	17/09/2012	17/09/2012	17/09/2012		13/09/2012	13/09/2012	13/09/2012	13/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	18/09/2012	18/09/2012	18/09/2012	18/09/2012		26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012
PID Reading						0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0		0.1	0.0	0.0	0.0	IS	IS	0.3	1.4	0.2	0.0	0.4	0.0	IS	0.4	0.6	0.7	0.8	0.4	0.4
Soil Matrix Description						Topsoil	Clay	Topsoil		Topsoil		Clay	Shale		Topsoil		Topsoil		Topsoil	Clay	Topsoil	Clay	Fill	Clay	Shale			Topsoil	Clay	Topsoil		Topsoil	Clay
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]																											
Heavy Metals																																
Arsenic	4	-	200	500	***20***	6	4	<4	<4	<4	<4	9	7	7	<4	<4	6	5	6	<4	<4	7	4	4	10	6	6	<4	<4	<4	5	5	10
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Chromium (III+VI)	1	-	-	-	***401***	19	13	9	8	9	9	12	13	11	12	9	35	16	16	13	9	21	21	15	16	12	12	16	13	14	17	16	25
Copper	1	-	2000	5000	***100***	14	21	5	4	4	4	31	33	31	8	4	***120***	15	19	16	7	13	30	11	35	37	39	16	15	10	10	24	19
Manganese	1	-	3000	7500	***500***	***1300***	170	54	***24***	57	19	74	***830***	***770***	61	15	430	410	***880***	39	350	***1400***	410	***630***	***1100***	***860***	500	380	39	210	68	***660***	***590***
Mercury	0.1	-	30	75	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
Nickel	1	-	600	3000	***60***	7	8	3	2	3	2	15	16	16	4	2	21	7	10	8	4	7	18	7	18	14	14	15	5	4	4	6	6
Lead	1	-	600	1500	***600***	24	13	14	7	9	8	14	16	14	29	8	73	22	20	9	43	20	35	13	20	22	17	34	11	37	11	92	30
Zinc	1	-	14000	35000	***200***	24	30	11	5	7	4	51	58	59	33	7	***650***	64	25	19	33	17	89	14	60	61	68	56	16	65	12	170	21
TPHs																																
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<250	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	640	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	1700	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	2340	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Table 1a - Heavy Metals, TPH, BTEX - Superlot 1 (cont'd)

Sample Location						TP12L1				TP13L1		TP14L1			TP15L1		TP16L1			TP17L1		TP18L1		TP19L1								TP20L1	
Sample ID						TP12L1	QAQC43 (Intra Dupe for TP12L1)	QAQC44 (Inter Dupe for TP12L1)	TP12L1	TP13L1	TP13L1	TP14L1	TP14L1	TP14L1a	TP15L1	TP15L1	TP16L1	TP16L1	QAQC41 (Intra Dupe for TP16L1)	TP17L1	TP17L1	TP18L1	TP18L1	TP19L1	TP19L1	TP19L1	TP19L1	TP19L1	TP19L1_A	TP19L1_B	TP20L1	TP20L1
Depth (m bgs)						0-0.05			0.2-0.3	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0.0-0.05	0-0.05	0.1-0.15	0-0.05	0.5-0.6		0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0.2-0.25	SP	SP	0-0.05	0.1-0.15
Date Sampled						26/09/2012			26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012		26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012
PID Reading						0.0	IS	IS	0.2	0.6	0.7	IS	IS	IS	0.3	0.8	0.3	0.4		0.0	0.1	0.2	0.7	IS	IS	IS	IS	0.2	0.1	0.1	0.2	0.2
Soil Matrix Description						Topsoil				Topsoil		Topsoil			Topsoil	Clay	Topsoil	Clay		Topsoil	Clay	Topsoil	Clay	-	-	Fill					Topsoil	
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]																											
Heavy Metals																																
Arsenic	4	-	200	500	***20***	<4	<4	7	<4	<4	<4	7	7	6	<4	7	<4	6	5	6	6	4	<4	5	7	6	5	6	6	5	5	8
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-	-	***401***	15	16	21	13	12	9	25	26	21	15	22	13	18	19	21	24	16	8	16	20	20	18	21	21	18	19	25
Copper	1	-	2000	5000	***100***	29	27	38	7	12	4	8	9	14	11	15	11	14	12	7	12	16	7	8	9	17	7	13	18	14	12	12
Manganese	1	-	3000	7500	***500***	330	350	465	130	380	77	***1700***	***780***	***960***	***600***	190	***550***	15	26	***860***	36	***510***	5	370	500	***590***	340	140	440	***720***	430	***1100***
Mercury	0.1	-	30	75	-	0.4	0.7	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.6	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.5	0.8
Nickel	1	-	600	3000	***60***	6	6	8	2	5	2	6	6	7	5	7	5	4	4	4	6	5	2	4	5	8	3	7	7	6	6	7
Lead	1	-	600	1500	***600***	260	190	271	23	100	12	30	20	66	27	16	36	13	11	25	15	37	6	20	20	58	15	17	47	47	47	36
Zinc	1	-	14000	35000	***200***	***250***	***270***	***362***	21	71	10	18	13	77	33	18	93	14	14	30	13	93	6	15	16	***230***	18	***410***	180	120	68	88
TPHs																																
C6 - C9	25	65	-	-	-	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)

2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)

3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)

EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 1a - Heavy Metals, TPH, BTEX - Superlot 1 (cont'd)

Sample Location						TP32L1				TP33L1				SP1L1			SP2L1			SP3L1	SP4L1	SP5L1			Area A						QA67	QA69	QA71
Sample ID						TP32L1	TP32L1	QAQC49 (Intra Dupe for TP32L1)	QAQC50 (Inter Dupe for TP32L1)	TP33L1	TP33L1	QAQC47 (Intra Dupe for TP33L1)	QAQC48 (Inter Dupe for TP33L1)	SP1L1	SP1L1A	SP1L1B	SP2L1a	SP2L1b	SP2L1c	SP3L1	SP4L1	SP5L1a	SP5L1b	SP5L1c	TP01A	TP01A	TP02A	TP02A	TP12A	TP12A	TP36C	TP35C	TP25C
Depth (m bgs)						0-0.05	0.5-0.6			0-0.05	0.1-0.15			0.5-0.6	0.5-0.6	0.9-1	0.4-0.5	0.4-0.5	0.4-0.5	0.5-0.6	0.5-0.6	0.3-0.4	0.4-0.5	0.4-0.5	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	0-0.05	0.1-0.15
Date Sampled						27/09/2012	27/09/2012			27/09/2012	27/09/2012			27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	9/10/2012	9/10/2012	9/10/2012
PID Reading						0.3	0.6			0.4	0.6			0.5	0.8	0.8	0.5	0.4	0.8	0.8	0.0	0.6	0.5	0.3	0.5	0.8	IS	IS	0.2	IS	IS		
Soil Matrix Description						Fill				Topsoil				Fill			Fill			Fill	Clay	Fill			Fill	Fill			Fill				
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]																												
Heavy Metals																																	
Arsenic	4	-	**200**	500	***20***	5	11	7	10	5	<4	<4	<5	4	5	5	4	4	4	11	<4	8	6	7	5	6	7	<4	<4	7	9	13	7
Cadmium	0.5	-	**40**	100	***3***	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.6	<0.5
Chromium (III+VI)	1	-	-	-	***401***	17	22	21	34	29	17	21	18	32	27	22	33	23	11	20	3	21	31	29	16	18	20	16	13	24	27	18	20
Copper	1	-	**2000**	5000	***100***	18	25	22	24	19	38	44	51	33	26	38	27	26	43	40	14	27	38	16	11	11	12	17	6	14	19	34	7
Manganese	1	-	**3000**	7500	***500***	470	***850***	***640***	***1670***	500	420	460	***568***	***530***	340	***1700***	460	300	450	400	28	470	420	***2300***	***530***	***680***	***1100***	***110***	***370***	***27***	***100***	***770***	***400***
Mercury	0.1	-	**30**	75	-	0.1	0.2	0.2	0.3	<0.1	<0.1	0.1	<0.1	0.1	<0.1	0.3	<0.1	<0.1	<0.1	0.2	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	**600**	3000	***60***	12	13	10	9	35	33	41	47	35	30	7	34	26	12	13	2	22	27	12	7	7	7	7	4	6	4	15	3
Lead	1	-	**600**	1500	***600***	41	160	180	346	100	100	150	219	70	49	69	64	35	17	70	100	31	71	60	23	23	27	10	18	15	17	23	18
Zinc	1	-	**14000**	35000	***200***	49	180	140	***233***	150	61	72	80	66	45	76	73	41	35	150	140	87	160	67	27	23	29	19	16	12	17	57	8
TPHs																																	
C6 - C9	25	65	-	-	-	<25	<25	<25	<10	<25	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	120	<100	500	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	450	230	430	<100	<100	<100	350	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	570	230	930	NC	NC	NC	350	NC	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
BTEX																																	
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<0.5	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (o)	1	-	-	-	-	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 1a - Heavy Metals, TPH, BTEX - Superlot 1 (cont'd)

Sample Location						QAQC33	QAQC34	QAQC35	QAQC36	QAQC37					Area C	TP36C - Triplicate				SP6L1	SP7L1			SP8L1		SP9L1
Sample ID						TP9Y	TP9Y	TP10Y	TP10Y	TP15Y	TP25C	TP25C	TP26C	TP26C	TP35C	TP35C	TP36C	TP36C	TP36C	SP6L1	SP7L1	QAQC53 (Intra Dupe for SP7L1)	QAQC54 (Inter Dupe for SP7L1)	SP8L1	SP8L1a	SP9L1
Depth (m bgs)						0.1-0.15	0.1-0.15	0-0.05	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0-0.05	0.1-0.15	0-0.05	0-0.05			0-0.05	0.1-0.15	0-0.05
Date Sampled						25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	27/09/2012	27/09/2012			27/09/2012	27/09/2012	27/09/2012
PID Reading																				0.5	0.8			0.2	IS	0.2
Soil Matrix Description																				Fill	Fill			Fill		Fill
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]																					
Heavy Metals																										
Arsenic	4	-	**200**	500	***20***	<4	<5	<4	<5	6	<4	8	5	6	<4 - 8	7	<4	<4	7	20	6	5	10	<4	11	4
Cadmium	0.5	-	**40**	100	***3***	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	***4.5***	<0.5	<0.5	<1	<0.5	***3.2***	0.9
Chromium (iii+VI)	1	-	-	-	***401***	8	9	7	7	13	6	20	15	30	3 - 19	18	30	36	25	21	22	18	35	13	25	12
Copper	1	-	**2000**	5000	***100***	4	<5	4	<5	14	38	7	25	15	27 - 90	15	40	37	16	***110***	12	14	14	15	38	27
Manganese	1	-	**3000**	7500	***500***	***67***	***44***	***63***	***79***	***8***	***560***	***390***	***590***	***44***	***300 - 360***	***18***	***510***	***490***	***180***	***610***	***700***	***1100***	***727***	320	310	170
Mercury	0.1	-	**30**	75	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.2	0.1	<0.1	2.2	<0.1
Nickel	1	-	**600**	3000	***60***	3	3	2	2	3	17	3	14	13	5 - 11	4	32	34	7	47	9	8	7	6	14	7
Lead	1	-	**600**	1500	***600***	13	11	14	15	13	17	17	15	16	7 - 16	13	15	13	14	***610***	28	32	31	63	120	50
Zinc	1	-	**14000**	35000	***200***	11	8	14	15	12	54	9	41	13	27 - 34	10	57	53	20	***3400***	***300***	***640***	***283***	***300***	***2400***	***1000***
TPHs																										
C6 - C9	25	65	-	-	-	<25	<10	<25	<10	<25	<25	<25	<25	<25	<25	<25	-	<25	<25	<25	<25	<25	<10	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 - 150	<100	-	<100	<100	390	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 - 740	<100	-	260	<100	540	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	<200	<250	<200	<250	<200	<200	<200	<200	<200	<200 - 890	<200	-	310	<200	930	NC	NC	NC	NC	NC	NC
BTEX																										
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<0.5	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<0.5	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<0.5	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<0.5	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)

2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)

3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)

EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 1b - VOCs, PCBs, OCPs - Superlot 1

Sample Location				TP01L1		TP2L1		BH3L1					TP04L1		TP05L1				TP6L1		BH7L1					TP8L1	
Sample ID				TP01L1	TP01L1	TP2L1	TP2L1	BH3L1	BH3L1	BH3L1	BH3L1	QAQC13 (Intra Dupe for BH3L1)	TP04L1	TP04L1	TP05L1	TP05L1	TP5L1	TP5L1	TP6L1	TP6L1	BH7L1	BH7L1	BH7L1	BH7L1	QAQC14 (Intra Dupe for BH7L1)	TP8L1	TP8L1
Depth (m bgs)				0-0.05	0.45-0.55	0-0.05	0.1-0.15	0-0.05	0.1-0.15	4-4.1	5.5-5.6		0-0.05	0.1-0.15	SP	0-0.05	0-0.05	0.5-0.6	0-0.05	0.3-0.4	0-0.05	0.5-0.6	7-7.1	9.6-9.7		0-0.05	0.5-0.6
Date Sampled				13/09/2012	13/09/2012	12/09/2012	12/09/2012	17/09/2012	17/09/2012	17/09/2012	17/09/2012		13/09/2012	13/09/2012	13/09/2012	13/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	18/09/2012	18/09/2012	18/09/2012	18/09/2012		26/09/2012	26/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																								
VOCs																											
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Bromodichloromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Bromoform	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Chloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Chloroform	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Chloromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Dibromomethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Trichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Tetrachloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Vinyl chloride	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
2-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
4-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Bromobenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Chlorobenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Bromomethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Isopropylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
n-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
n-propylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
sec-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Styrene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
tert-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
Cyclohexane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA	NA	<1	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	NA
PCBs																											
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA
PCBs (Sum of total)		**20**	50	NC	NA	NC	NA	NC	NC	NA	NA	NA	NC	NA	NA	NC	NC	NA	NC	NA	NC	NC	NA	NA	NC	NC	NA
OCPs																											
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.3
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<1.5	<0.3	<0.2	<0.2	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	<0.2
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 1b - VOCs, PCBs, OCPs - Superlot 1 (cont'd)

Sample Location				TP10L1		TP11L1		TP12L1				TP13L1		TP14L1			TP15L1		TP16L1			TP17L1		TP18L1		TP19L1						
Sample ID				TP10L1	TP10L1	TP11L1	TP11L1	TP12L1	QAQC43 (Intra Dupe for TP12L1)	QAQC44 (Inter Dupe for TP12L1)	TP12L1	TP13L1	TP13L1	TP14L1	TP14L1a	TP14L1	TP15L1	TP15L1	TP16L1	TP16L1	QAQC41 (Intra Dupe for TP16L1)	TP17L1	TP17L1	TP18L1	TP18L1	TP19L1	TP19L1	TP19L1_A	TP19L1_B	TP19L1	TP19L1	TP19L1
Depth (m bgs)				0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05			0.2-0.3	0-0.05	0.1-0.15	0-0.05	0.0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.5-0.6		0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.1-0.15	SP	SP	0-0.05	0.1-0.15	0.2-0.25
Date Sampled				26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012			26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012		26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																													
VOCs																																
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Bromodichloromethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Bromoform	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Chloroethane	1	-	-	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Chloroform	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Chloromethane	1	-	-	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Dibromomethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Trichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Tetrachloroethene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Vinyl chloride	1	-	-	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
2-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
4-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Bromobenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Chlorobenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Bromomethane	1	-	-	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Isopropylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
n-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
n-propylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
sec-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Styrene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
tert-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
Cyclohexane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA
PCBs																																
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA
PCBs (Sum of total)		**20**	50	NC	NA	NC	NA	NC	NC	<0.1	NA	NC	NA	NC	NC	NA	NC	NA	NC	NA	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NC	NA
OCPs																																
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.1	<0.3	<0.3	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 1b - VOCs, PCBs, OCPs - Superlot 1 (cont'd)

Sample Location				TP20L1		TP21L1				TP22L1		TP23L1			TP24L1		TP25L1		TP26L1		TP27L1					TP28L1			TP29L1		BH30L1			
Sample ID				TP20L1	TP20L1	TP21L1	QAQC39 (Intra Dupe for TP21L1)	QAQC40 (Inter Dupe for TP21L1)	TP21L1	TP22L1	TP22L1	TP23L1	QAQC10 (Intra Dupe for TP23L1)	TP23L1	TP24L1	TP24L1	TP25L1	TP25L1	TP26L1	TP26L1	TP27L1	TP27L1B	TP27L1	QAQC45 (Intra Dupe for TP27L1)	TP27L1	TP28L1	TP28L1	TP28L1	TP29L1	TP29L1	BH30L1	BH30L1	BH30L1	BH30L1
Depth (m bgs)				0-0.05	0.1-0.15	0-0.05			0.3-0.4	0-0.05	0.1-0.15	0-0.05		0.45-0.55	0-0.05	0.95-1.05	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0.1-0.15		0.9-1	0-0.05	0.45-0.55	1.2-1.3	0.0-0.05	0.1-0.15	0-0.05	0.1-0.15	4-4.1	8-8.1
Date Sampled				14/09/2012	14/09/2012	25/09/2012			25/09/2012	25/09/2012	25/09/2012	14/09/2012		14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	26/09/2012	27/09/2012	26/09/2012		26/09/2012	14/09/2012	14/09/2012	14/09/2012	27/09/2012	27/09/2012	18/09/2012	18/09/2012	18/09/2012	18/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																														
VOCs																																	
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Bromodichloromethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Bromoform	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Chloroethane	1	-	-	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Chloroform	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Chloromethane	1	-	-	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Dibromomethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Trichloroethene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Tetrachloroethene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Vinyl chloride	1	-	-	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
2-chlorotoluene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
4-chlorotoluene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Bromobenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Chlorobenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Bromomethane	1	-	-	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Isopropylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
n-butylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
n-propylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
sec-butylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Styrene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
tert-butylbenzene	1	-	-	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
Cyclohexane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA	NA	<1	<1	NA	NA
PCBs																																	
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	<0.5	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA
PCBs (Sum of total)		**20**	50	NC	NA	NC	NC	NA	NA	NC	NA	NC	NC	NA	NC	NA	NC	NA	NC	NA	NC	NC	NA	NA	NA	NC	NC	NA	NA	NA	NC	NC	NA	NA
OCPs																																	
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	0.5	0.4	0.41	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	-	-	0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.2	<0.2	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	0.1	<0.3	0.5	0.4	0.41	<0.2	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 1b - VOCs, PCBs, OCPs - Superlot 1 (cont'd)

Sample Location				TP31L1		TP32L1				TP33L1				SP1L1			SP2L1			SP3L1	SP4L1	SP5L1a			SP6L1	SP7L1			SP8L1		SP9L1
Sample ID				TP31L1	TP31L1	TP32L1	TP32L1	QAQC49 (Intra Dupe for TP32L1)	QAQC50 (Inter Dupe for TP32L1)	TP33L1	TP33L1	QAQC47 (Intra Dupe for TP33L1)	QAQC48 (Inter Dupe for TP33L1)	SP1L1	SP1L1A	SP1L1B	SP2L1a	SP2L1b	SP2L1c	SP3L1	SP4L1	SP5L1a	SP5L1b	SP5L1c	SP6L1	SP7L1	QAQC53 (Intra Dupe for SP7L1)	QAQC54 (Inter Dupe for SP7L1)	SP8L1	SP8L1a	SP9L1
Depth (m bgs)				0-0.05	0.5-0.6	0-0.05	0.5-0.6			0-0.05	0.1-0.15			0.5-0.6	0.5-0.6	0.9-1	0.4-0.5	0.4-0.5	0.4-0.5	0.5-0.6	0.5-0.6	0.3-0.4	0.4-0.5	0.4-0.5	0-0.05	0-0.05			0-0.05	0.1-0.15	0-0.05
Date Sampled				26/09/2012	26/09/2012	27/09/2012	27/09/2012			27/09/2012	27/09/2012			27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012			27/09/2012	27/09/2012	27/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																												
VOCs																															
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<2	<0.5	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1,1-trichloroethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1,2-trichloroethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1-dichloroethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1-dichloroethene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,1-dichloropropene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,2,3-trichloropropane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,2-dichloroethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,2-dichloropropane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,3-dichloropropane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2,2-dichloropropane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Bromodichloromethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Bromoform	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Carbon tetrachloride	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Chlorodibromomethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Chloroethane	1	-	-	<1	NA	NA	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Chloroform	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Chloromethane	1	-	-	<1	NA	NA	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
cis-1,2-dichloroethene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
cis-1,3-dichloropropene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Dibromomethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Trichloroethene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Tetrachloroethene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
trans-1,2-dichloroethene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
trans-1,3-dichloropropene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Vinyl chloride	1	-	-	<1	NA	NA	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
1,2,3-trichlorobenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-chlorotoluene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
4-chlorotoluene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Bromobenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Chlorobenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,2-dibromoethane	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Bromomethane	1	-	-	<1	NA	NA	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Dichlorodifluoromethane	1	-	-	<1	NA	NA	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Trichlorofluoromethane	1	-	-	<1	NA	NA	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
1,2,4-trimethylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,3,5-trimethylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Isopropylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
n-butylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
n-propylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
p-isopropyltoluene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
sec-butylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Styrene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
tert-butylbenzene	1	-	-	<1	NA	NA	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Cyclohexane	1	-	-	<1	NA	NA	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
PCBs																															
Arochlor 1016	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Arochlor 1221	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Arochlor 1232	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Arochlor 1242	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Arochlor 1248	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Arochlor 1254	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
Arochlor 1260	0.1	-	-	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1
PCBs (Sum of total)		**20**	50	NC	NA	NA	NC	NC	<0.1	NC	NC	NC	<0.1	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	<0.1	NC	NC	NC
OCPs																															
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	**0.5**	<0.3	<0.3	<0.05	<0.3	<0.3	**0.1**
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.55**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.9	<0.2	<0.2	<0.05	<0.2	<0.2	0.2
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 1c - SVOCs - Superlot 1

Sample Location				TP01L1		TP2L1		BH3L1					TP04L1		TP05L1				TP6L1		BH7L1					TP8L1		TP10L1		TP11L1		TP12L1				TP13L1		TP14L1			TP15L1	
Sample ID				TP01L1	TP01L1	TP2L1	TP2L1	BH3L1	BH3L1	BH3L1	BH3L1	QAQC13 (Intra Dupe for BH3L1)	TP04L1	TP04L1	TP05L1	TP05L1	TP5L1	TP5L1	TP6L1	TP6L1	BH7L1	BH7L1	BH7L1	BH7L1	QAQC14 (Intra Dupe for BH7L1)	TP8L1	TP8L1	TP10L1	TP10L1	TP11L1	TP11L1	TP12L1	QAQC43 (Intra Dupe for TP12L1)	QAQC44 (Inter Dupe for TP12L1)	TP12L1	TP13L1	TP13L1	TP14L1	TP14L1a	TP14L1	TP15L1	TP15L1
Depth (m bgs)				0-0.05	0.45-0.55	0-0.05	0.1-0.15	0-0.05	0.1-0.15	4-4.1	5.5-5.6		0-0.05	0.1-0.15	SP	0-0.05	0-0.05	0.5-0.6	0-0.05	0.3-0.4	0-0.05	0.5-0.6	7-7.1	9.6-9.7		0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05			0.2-0.3	0-0.05	0.1-0.15	0-0.05	0.0-0.05	0.1-0.15	0-0.05	0.1-0.15
Date Sampled				13/09/2012	13/09/2012	12/09/2012	12/09/2012	17/09/2012	17/09/2012	17/09/2012	17/09/2012		13/09/2012	13/09/2012	13/09/2012	13/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	18/09/2012	18/09/2012	18/09/2012	18/09/2012		26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012			26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012
Compound	EQL	NEPM 1999 HIL E [1]	NEPM 1999 HIL F [2]																																					
SVOCs																																								
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
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1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
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Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
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1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
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g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1
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Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
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Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Isophorone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
2-(acetylamino) fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
4-(dimethylamino) azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<

Table 1c - SVOCs - Superlot 1 (Cont'd)

Sample Location				TP16L1			TP17L1		TP18L1		TP19L1							TP20L1		TP21L1				TP22L1		TP23L1			TP24L1		TP25L1		TP26L1		TP27L1					TP28L1			TP29L1	
Sample ID				TP16L1	TP16L1	QAQC41 (Intra Dupe for TP16L1)	TP17L1	TP17L1	TP18L1	TP18L1	TP19L1	TP19L1	TP19L1_A	TP19L1_B	TP19L1	TP19L1	TP19L1	TP20L1	TP20L1	TP21L1	QAQC39 (Intra Dupe for TP21L1)	QAQC40 (Inter Dupe for TP21L1)	TP21L1	TP22L1	TP22L1	TP23L1	QAQC10 (Intra Dupe for TP23L1)	TP23L1	TP24L1	TP24L1	TP25L1	TP25L1	TP26L1	TP26L1	TP27L1	TP27L1B	TP27L1	QAQC45 (Intra Dupe for TP27L1)	TP27L1	TP28L1	TP28L1	TP28L1	TP29L1	TP29L1
Depth (m bgs)				0-0.05	0.5-0.6		0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.1-0.15	SP	SP	0-0.05	0.1-0.15	0.2-0.25	0-0.05	0.1-0.15	0-0.05			0.3-0.4	0-0.05	0.1-0.15	0-0.05		0.45-0.55	0-0.05	0.95-1.05	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15		0.9-1	0-0.05	0.45-0.55	1.2-1.3	0.0-0.05	0.1-0.15
Date Sampled				26/09/2012	26/09/2012		26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	26/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	25/09/2012			25/09/2012	25/09/2012	25/09/2012	14/09/2012		14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	14/09/2012	26/09/2012	27/09/2012	26/09/2012		26/09/2012	14/09/2012	14/09/2012	14/09/2012	27/09/2012	27/09/2012
Compound	EQL	NEPM 1999 HIL E [1]	NEPM 1999 HIL F [2]																																								
SVOCs																																											
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin + Dieldrin	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT+DDE+DDD	1	400	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	2	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<

Table 1c - SVOCs - Superlot 1 (Cont'd)

Sample Location				BH30L1				TP31L1		TP32L1				TP33L1				SP1L1			SP2L1			SP3L1	SP4L1	SP5L1a			SP6L1	SP7L1			SP8L1		SP9L1
Sample ID				BH30L1	BH30L1	BH30L1	BH30L1	TP31L1	TP31L1	TP32L1	TP32L1	QAQC49 (Intra Dupe for TP32L1)	QAQC50 (Inter Dupe for TP32L1)	TP33L1	TP33L1	QAQC47 (Intra Dupe for TP33L1)	QAQC48 (Inter Dupe for TP33L1)	SP1L1	SP1L1A	SP1L1B	SP2L1a	SP2L1b	SP2L1c	SP3L1	SP4L1	SP5L1a	SP5L1b	SP5L1c	SP6L1	SP7L1	QAQC53 (Intra Dupe for SP7L1)	QAQC54 (Inter Dupe for SP7L1)	SP8L1	SP8L1a	SP9L1
Depth (m bgs)				0-0.05	0.1-0.15	4-4.1	8-8.1	0-0.05	0.5-0.6	0-0.05	0.5-0.6			0-0.05	0.1-0.15			0.5-0.6	0.5-0.6	0.9-1	0.4-0.5	0.4-0.5	0.4-0.5	0.5-0.6	0.5-0.6	0.3-0.4	0.4-0.5	0.4-0.5	0-0.05	0-0.05			0-0.05	0.1-0.15	0-0.05
Date Sampled				18/09/2012	18/09/2012	18/09/2012	18/09/2012	26/09/2012	26/09/2012	27/09/2012	27/09/2012			27/09/2012	27/09/2012			27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012	27/09/2012			27/09/2012	27/09/2012	27/09/2012
Compound	EQL	NEPM 1999 HIL E [1]	NEPM 1999 HIL F [2]																																
SVOCs																																			
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Aldrin + Dieldrin	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	NA	<1	<1	<1
DDT+DDE+DDD	1	400	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	NA	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Heptachlor	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 2	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Benzo(a) pyrene	1	2	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 2	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1 - 3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<0.5	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 2	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<0.5	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 7	<1	<1	0.6	2	2	<1	1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<0.5	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 2	<1	<1	<0.5	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<0.5	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1 - 6	<1	<1	0.5	1	2	<1	1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<0.5	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	3	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Isophorone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
2-(acetylamino) fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
4-(dimethylamino) azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroethoxy) methane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Bis(2-chloroisopropyl) ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Carbazole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Dibenzofuran	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Hexachloropropene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Methapyrilene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
N-nitrosomorpholine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
N-nitrosopiperidine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Phenacetin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1
Pentachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Comm

Table 1d - Asbestos - Superlot 1

Sample ID			TP01L1	TP2L1	BH3L1	BH3L1	TP04L1	QA5	TP05L1	TP5L1	TP6L1	BH7L1	BH7L1	TP8L1	TP9L1	TP10L1	TP11L1	TP12L1	TP13L1	TP14L1	TP14L1A	TP15L1	TP16L1	TP16L1	TP17L1
Sample Type			SLB	SS	SS	SS	SLB	SLB	SLB	SLB	SLB	SS	SS	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	Fragment	SLB
Laboratory Reference			78908-49	78908-A-73	79070-40	79070-41	78908-53	78908-63	78908-59	79537-113	79537-90	79070-97	79070-99	79537-95	79537-130	79537-78	79537-108	79537-103	79537-74	79537-99	79537-139	79537-86	79537-121	79537-153	79537-117
Depth (m bgs)			0.0-0.5	0.0-0.5	0.0-0.05	0.1-0.15	0.0-0.5		0.0-0.5	0.0-0.05	0.0-0.05	0.0-0.05	0.5-0.6	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05F	0.0-0.05
Date Sampled			12/09/12	12/09/12	17/09/12	17/09/12	12/09/12		12/09/12	26/09/12	26/09/12	18/09/12	18/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12	26/09/12
Components	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA																							
Sample Description			Brown fine-grained soil & rocks	Brown fine-grained soil	Brown fine-grained soil & debris	Light brown fine-grained soil & debris	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained clay soil & rocks	Brown sandy clayey soil & rocks	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown fine-grained soil & rocks	Grey coarse-grained clayey soil & rocks	Brown coarse-grained clay soil & rocks	Grey-brown sandy clayey soil	Grey coarse-grained clayey soil & rocks	Brown sandy clayey soil & rocks	Brown coarse-grained clay soil & rocks	Brown fine-grained clayey soil & rocks	Brown fine-grained clayey soil	Brown fine-grained soil & rocks	Grey compressed fibre cement material	Brown coarse-grained clay soil & rocks
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-
d) Sample mass (g)	NA	NA	478.51	40.00	40.00	40.00	389.35	361.70	320.51	305.73	537.28	40.00	40.00	594.88	331.92	485.92	382.76	277.49	422.58	251.34	467.17	418.07	306.53	-	297.82
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50x25x4	-
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	NC	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA																						NC	

Table 1d - Asbestos - Superlot 1 (Cont'd)

Sample ID			TP18L1	TP19L1	TP19L1	TP19L1_A	TP20L1	TP21L1	QAQC39	TP22L1	TP23L1	QAQC10	TP24L1	TP25L1	TP26L1	TP27L1	TP28L1	TP28L1	BH30L1	BH30L1	TP31L1	TP32L1	QAQC49	TP33L1	QAQC47
Sample Type			SLB	SLB	SLB	SS	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SS	SS	SLB	SLB	SLB	SLB	SLB
Laboratory Reference			79537-82	79070-81	79070-82	79070-87	79070-77	79537-41	79537-145	79537-37	79070-65	79070-138	79070-73	79070-69	79070-61	79537-125	79070-90	79070-92	79070-119	79070-120	79537-134	79621-39	79621-50	79621-2	79621-49
Depth (m bgs)			0.0-0.05	0.0-0.05	0.1-0.15	SP	0.0-0.05	0.0-0.05		0.0-0.05	0.0-0.05		0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.45-0.55	0.0-0.05	0.1-0.15	0.0-0.05	0.5-0.6		0.1-0.15	
Date Sampled			26/09/12	14/09/12	14/09/12	14/09/12	14/09/12	25/09/12		25/09/12	14/09/12		14/09/12	14/09/12	14/09/12	26/09/12	14/09/12	14/09/12	18/09/12	18/09/12	26/09/12	27/09/12		27/09/12	
Components	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA																							
Sample Description			Brown coarse-grained clay soil & rocks	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown coarse-grained clay soil & rocks	Grey coarse-grained clayey soil & rocks	Brown sandy clayey soil & rocks	Brown fine-grained soil & debris	Brown fine-grained soil & debris	Brown fine-grained soil & debris	Brown fine-grained soil & debris	Brown coarse-grained soil & debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & debris	Brown fine-grained soil & debris	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Grey coarse-grained clay soil & rocks	Brown coarse-grained soil & rocks
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	NA	NA	231.41	478.48	573.36	40.00	489.31	355.36	379.92	269.01	352.34	258.20	387.11	302.22	604.48	436.69	783.47	438.31	40.00	40.00	419.25	383.50	279.39	359.17	469.46
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA																							

Table 1d - Asbestos - Superlot 1 (Cont'd)

Sample ID			TP33L1	SP1L1	SP1L1A	SP1L1B	SP2L1A	SP2L1B	SP2L1C	SP3L1	SP4L1	SP5L1C	SP5L1A	SP5L1B	SP6L1	SP7L1	QAQC53	SP8L1	SP8L1A	SP9L1
Sample Type			SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB
Laboratory Reference			79621-5	79621-33	79621-36	79621-48	79621-9	79621-12	79621-13	79621-32	79621-30	79621-14	79621-17	79621-18	79621-27	79621-19	79621-52	79621-23	79621-24	79621-21
Depth (m bgs)			0.0-0.05	0.5-0.6	0.5-0.6	0.9-1.0	0.4-0.5	0.4-0.5	0.4-0.5	0.5-0.6	0.5-0.6	0.4-0.5	0.3-0.4	0.4-0.5	0.0-0.05	0.0-0.05		0.0-0.05	0.1-0.15	0.0-0.05
Date Sampled			27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12	27/09/12		27/09/12	27/09/12	27/09/12
Components	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA																		
Sample Description			Brown coarse-grained clay soil & rocks	Brown fine-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Assorted sandy clay soil & rocks	Brown coarse-grained clay soil & rocks	Grey-brown sandy soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown clay soil & organic debris	Brown coarse-grained clay soil & rocks	Dark grey sandy clay soil & rocks	Dark grey sandy soil & organic debris	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-	Present
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-	Present
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	NA	NA	370.75	604.49	511.85	611.79	389.21	245.38	381.29	543.31	542.83	336.92	378.67	420.78	199.48	423.95	226.74	306.50	121.55	230.00
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	0.00328
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.830	-	0.526
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.996	-	NR
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	NC	No Asbestos Detected	0.0014%
j) ACM w/w Analysis (%)	0.05%	NA																4.84%		0.23%

Notes:
a) Chrysotile in ACM fragments (g)
b) Amosite in ACM fragments (g)
c) Crocidolite in ACM fragments (g)
d) Total mass of soil sample (g)
e) Laboratory reported dimentions of ACM fragments
f) Total free asbestos AF and FA (g)
g) Laboratory reported mass of ACM
h) Laboratory calculated fibres by weight of ACM (g)
i) Weight/Weight fibres in soil sample/sub-sample (%)
j) Weight/Weight ACM in soil sample/sub-sample (%)
NR = Not reported
NA = No criteria exist
SP = Stockpile
SS = Sub-sample
SLB = Snap Lock Bag
'-' = not identified
NC = Non calculable

Table 2a - Heavy Metals, TPH, BTEX - Superlot 2, Area A

Area of Site						Superlot 2																													
Sample Location						TP3L2		TP4L2		TP5L2					TP6L2				TP7L2		TP8L2		TP9L2		TP10L2		TP11L2		TP13L2		TP14L2		TP15L2	
Sample ID						TP3L2	TP3L2	TP4L2	TP4L2	TP5L2	TP5L2	SP5L2	QA59 (Intra Dupe for SP5L2)	QA60 (Inter Dupe for SP5L2)	TP6L2	QA61 (Intra Dupe for SP6L2)	QA62 (Inter Dupe for SP6L2)	TP6L2	TP7L2	TP7L2	TP8L2	TP8L2	TP9L2	TP9L2	TP10L2	TP10L2	TP11L2	TP11L2	TP13L2	TP13L2	TP14L2	TP14L2	TP15L2	TP15L2
Depth (m bgs)						0-0.05	0.5-0.6	0-0.05	0.5-0.6	0-0.05	0.1-0.15	SP			0-0.05			0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.6-0.7
Date Sampled						4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012			4/10/2012			3/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	4/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012
PID Reading						0.3	0.5	0.3	0.8	0.3	0.1	IS			0.5			0.4	0.3	0.3	0.2	0.2	0.4	0.2	0.7	0.8	0.4	0.3	4.9	2.1	0.1	0.1	0.5	0.1
Soil Matrix Description						Topsoil	Clay	Topsoil	Clay	Topsoil		Fill			Topsoil				Topsoil		Topsoil	Clay	Topsoil		Topsoil		Topsoil	Clay	Topsoil		Topsoil	Clay	Topsoil	Clay
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																													
Heavy Metals																																		
Arsenic	4	-	200	500	***20***	7	<4	7	5	7	<4	8	6	6	8	9	7	8	10	6	6	5	8	<4	8	5	8	5	6	5	7	7	7	6
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<1	0.6	0.6	<1	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-	-	***401***	18	13	34	17	30	11	26	18	23	23	24	25	24	22	21	15	13	18	13	23	19	27	16	18	17	19	15	21	22
Copper	1	-	2000	5000	***100***	13	20	11	15	17	13	25	15	14	27	31	24	15	15	15	10	16	13	17	12	18	17	20	11	12	11	16	12	16
Manganese	1	-	3000	7500	***500***	***1700***	270	440	17	***1300***	37	***1600***	***710***	***814***	***990***	***1000***	***943***	***1300***	***3300***	***930***	***1200***	240	***3700***	40	***800***	110	***680***	43	***1400***	***300***	***720***	13	***680***	60
Mercury	0.1	-	30	75	***1***	0.2	<0.1	1.6	<0.1	1.1	<0.1	0.7	<0.1	0.2	0.2	0.3	0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	***60***	8	12	5	5	7	4	9	6	8	8	9	7	7	11	7	6	11	10	6	6	6	11	5	7	6	5	3	6	7
Lead	1	-	600	1500	***600***	23	8	35	9	67	6	37	20	38	76	100	102	41	37	20	21	11	36	9	27	13	21	11	28	18	22	8	23	15
Zinc	1	-	14000	35000	***200***	83	25	53	11	120	15	140	35	52	***350***	***390***	***420***	***220***	28	23	20	20	48	21	23	18	33	19	28	14	36	11	34	18
TPH																																		
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<10	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																		
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Table 2a - Heavy Metals, TPH, BTEX - Superlot 2, Area A (Cont'd)

Area of Site						Superlot 2																													
Sample Location						TP16L2				BH17L2				TP18L2		TP19L2		BH20L2				TP21L2		TP22L2			TP23L2		TP24L2		TP27L2			
Sample ID						TP16L2	TP16L2	QA57 (Intra Dupe for SP16L2)	QA58 (Inter Dupe for SP16L2)	BH17L2	BH17L2	BH17L2	QAQC12 (Intra Dupe for SP17L2)	TP18L2	TP18L2	TP19L2	TP19L2	BH20L2	BH20L2	BH20L2	BH20L2	TP21L2	TP21L2	TP22L2	QA63 (Intra Dupe for SP22L2)	QA64 (Inter Dupe for SP22L2)	TP22L2	TP23L2	TP23L2	TP24L2	TP24L2	TP27L2	QA55 (Intra Dupe for SP27L2)	QA56 (Inter Dupe for SP27L2)	TP27L2
Depth (m bgs)						0-0.05	0.1-0.15			0-0.05	0.5-0.6	7-7.1		8-8.1	0-0.05	0.5-0.6	0-0.05	0.5-0.6	0-0.05	0.1-0.15	4.45-4.55	8-8.1	0-0.05	0.1-0.15	0-0.05			0.1-0.15	0-0.05	0.4-0.5	0-0.05	0.5-0.6	0-0.05			0.1-0.15
Date Sampled						3/10/2012	3/10/2012			17/09/2012	17/09/2012	17/09/2012		17/09/2012	8/10/2012	8/10/2012	3/10/2012	3/10/2012	17/09/2012	17/09/2012	17/09/2012	17/09/2012	3/10/2012	3/10/2012	8/10/2012			8/10/2012	8/10/2012	8/10/2012	3/10/2012	3/10/2012	3/10/2012			3/10/2012
PID Reading						0.5	0.4			IS	0	IS		0	0.5	0.1	0.7	0.6	0.1	0.1	0.1	0.4	1	0.5	0.2			0.1	0.2	0.1	0.5	0.5	0.5			0.4
Soil Matrix Description						Topsoil	Clay			Fill	Clay	Shale		Shale	Fill	Clay	Topsoil	Clay	Topsoil			Shale	Topsoil		Fill			Fill	Clay	Clay	Topsoil	Clay	Topsoil			Topsoil
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																														
Heavy Metals																																			
Arsenic	4	-	200	500	***20***	5	6	4	6	8	6	<4	4	<4	7	4	8	4	6	8	6	4	9	9	10	13	14	9	11	8	12	11	10	12	10	10
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.8	0.8	<1	1	0.6	1	0.7	<0.5	<0.5	<0.5	<1	<0.5
Chromium (III+VI)	1	-	-	-	***401***	18	18	17	18	26	10	11	10	10	19	17	22	12	21	19	16	10	26	27	30	33	38	27	34	18	31	20	29	32	20	27
Copper	1	-	2000	5000	***100***	15	17	18	17	11	19	38	38	34	13	21	14	11	16	20	17	29	19	17	17	23	22	26	11	49	18	9	29	27	32	28
Manganese	1	-	3000	7500	***500***	***790***	***540***	240	468	***700***	13	***910***	***1300***	***900***	***660***	86	***2200***	10	490	500	48	***1000***	***840***	***970***	500	360	***814***	***510***	430	***1400***	***550***	9	360	350	***515***	320
Mercury	0.1	-	30	75	***1***	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	***60***	7	6	6	5	6	5	17	16	13	6	16	11	3	8	6	6	15	12	10	7	6	9	10	7	13	11	2	13	10	15	14
Lead	1	-	600	1500	***600***	29	24	14	24	20	7	15	15	13	52	22	31	10	24	52	14	20	30	22	100	96	166	300	29	100	29	11	29	24	29	20
Zinc	1	-	14000	35000	***200***	43	33	25	22	18	22	60	60	50	89	22	37	10	94	140	22	70	59	51	200	150	***451***	***330***	82	***340***	71	7	66	59	58	58
TPH																																				
C6 - C9	25	65	-	-	-	<25	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<10	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																				
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<0.5	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Table 2a - Heavy Metals, TPH, BTEX - Superlot 2, Area A (Cont'd)

Area of Site						Superlot 2																		Area A					
Sample Location						TP28L2			TP29L2			TP30L2		TP31L2		TP32L2		TP33L2				TP34L2		TP01A		TP02A		TP12A	
Sample ID						TP28L2	TP28L2	SP28L2	TP29L2	TP29L2	SP29L2	TP30L2	TP30L2	TP31L2	TP31L2	TP32L2	TP32L2	TP33L2	SP33L2	QA65 (Intra Dupe for SP33L2)	QA66 (Inter Dupe for SP33L2)	TP34L2	TP34L2	TP01A	TP01A	TP02A	TP02A	TP12A	TP12A
Depth (m bgs)						0-0.05	0.1-0.15	SP	0-0.05	0.1-0.15	SP	0-0.5	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	SP			0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.45-0.55			
Date Sampled						3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012			8/10/2012	8/10/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012			
PID Reading						0.2	0.2	-	0.4	0.3	0.2	0.2	0.4	0.1	0.2	0.2	0.2	0.1				0.2	0.1	0	0	4.8	0	0	0			
Soil Matrix Description						Topsoil	Fill	Topsoil	Topsoil	Fill	Topsoil	Clay	Topsoil		Topsoil		Topsoil	Fill				Fill	Topsoil	Topsoil		Topsoil		Topsoil	Clay			
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																													
Heavy Metals																																		
Arsenic	4	-	200	500	***20***	11	7	7	11	7	7	8	8	8	7	8	8	9	13	10	***24***	7	7	5	6	7	<4	<4	7						
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	0.6	<0.5	0.7	0.7	1	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5						
Chromium (III+VI)	1	-	-	-	***401***	28	19	31	28	23	30	24	16	22	20	24	24	23	16	14	22	23	24	16	18	20	16	13	24						
Copper	1	-	2000	5000	***100***	21	7	36	13	12	37	12	17	22	9	21	16	22	89	70	***192***	17	11	11	11	12	17	6	14						
Manganese	1	-	3000	7500	***500***	470	100	***940***	14	40	***930***	420	11	***940***	500	***730***	***1300***	***650***	200	210	217	480	***690***	***530***	***680***	***1100***	110	370	27						
Mercury	0.1	-	30	75	***1***	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1						
Nickel	1	-	600	3000	***60***	10	3	25	2	5	24	10	2	9	3	8	8	6	10	9	11	8	6	7	7	7	7	4	6						
Lead	1	-	600	1500	***600***	23	11	23	12	14	23	20	12	35	18	51	27	37	160	140	248	59	23	23	23	27	10	18	15						
Zinc	1	-	14000	35000	***200***	55	6	74	7	11	73	61	11	95	37	79	71	66	***230***	200	***383***	53	25	27	23	29	19	16	12						
TPH																																		
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25						
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50						
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100						
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100						
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	130	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC						
BTEX																																		
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2						
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1						
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5						
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2						
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1						
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC						

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)
2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 2b - VOCs, PCBs, OCPs - Superlot 2, Area A

| Area of Site | | | | Superlot 2 | | | |

Table 2b - VOCs, PCBs, OCPs - Superlot 2, Area A (Cont'd)

Area of Site				Superlot 2																												Area A					
Sample Location				BH20L2				TP21L2		TP22L2				TP23L2		TP24L2		TP27L2				TP28L2			TP29L2			TP30L2		TP31L2		TP32L2		TP33L2				TP34L2		TP01A		TP02A		TP12A	
Sample ID				BH20L2	BH20L2	BH20L2	BH20L2	TP21L2	TP21L2	TP22L2	QA63 (Intra Dupe for SP22L2)	QA64 (Inter Dupe for SP22L2)	TP22L2	TP23L2	TP23L2	TP24L2	TP24L2	TP27L2	QA55 (Intra Dupe for SP27L2)	QA56 (Inter Dupe for SP27L2)	TP27L2	TP28L2	TP28L2	SP28L2	TP29L2	TP29L2	SP29L2	TP30L2	TP30L2	TP31L2	TP31L2	TP32L2	TP32L2	TP33L2	SP33L2	QA65 (Intra Dupe for SP33L2)	QA66 (Inter Dupe for SP33L2)	TP34L2	TP34L2	TP01A	TP01A	TP02A	TP02A	TP12A	TP12A
Depth (m bgs)				0-0.05	0.1-0.15			0-0.05	0.1-0.15	0-0.05				0-0.05	0.4-0.5	0-0.05	0.5-0.6	0-0.05			0.1-0.15	0-0.05	0.1-0.15	-	0-0.05	0.1-0.15	-	0-0.5	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	-			0-0.05	0.1-0.15	0-0.05	0.1-0.15	0.1-0.15	0.1-0.15	0-0.05	0.45-0.55	
Date Sampled				17/09/2012	17/09/2012			3/10/2012	3/10/2012	8/10/2012				8/10/2012	8/10/2012	3/10/2012	3/10/2012	3/10/2012			3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	3/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012			8/10/2012	8/10/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																																		
VOCs																																					
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,1,1-trichloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,1,2-trichloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,1-dichloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,1-dichloroethene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,1-dichloropropene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,2,3-trichloropropane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,2-dichloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,2-dichloropropane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,3-dichloropropane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
2,2-dichloropropane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Bromodichloromethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Bromoform	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Carbon tetrachloride	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Chlorodibromomethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Chloroethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<5	<1	NA
Chloroform	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Chloromethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<5	<1	NA
cis-1,2-dichloroethene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
cis-1,3-dichloropropene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Dibromomethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Trichloroethene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Tetrachloroethene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
trans-1,2-dichloroethene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
trans-1,3-dichloropropene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Vinyl chloride	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<5	<1	NA
1,2,3-trichlorobenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
2-chlorotoluene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
4-chlorotoluene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Bromobenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Chlorobenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,2-dibromoethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Bromomethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<5	<1	NA
Dichlorodifluoromethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<5	<1	NA
Trichlorofluoromethane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	<1	<5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<5	<1	NA
1,2,4-trimethylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
1,3,5-trimethylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Isopropylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
n-butylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
n-propylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
p-isopropyltoluene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
sec-butylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Styrene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
tert-butylbenzene	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	<0.5	<1	NA
Cyclohexane	1	-	-	<1	<1	-	NA	<1	NA	<1	<1	-	NA	<1	NA	<1	NA	<1	<1	-	NA	<1	NA	<1	<1	NA	<1	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA
PCBs																																					
Arochlor 1016	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
Arochlor 1221	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
Arochlor 1232	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
Arochlor 1242	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
Arochlor 1248	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
Arochlor 1254	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
Arochlor 1260	0.1	-	-	<0.1	<0.1	-	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.5	<0.5	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA
PCBs (Sum of total)		**20**	50	NR	NR		NR	NR	NR	NR	<0.1	NR	NR	NR	NR	NR	NR	NR	<0.1	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	<0.1	NR	NA	NA	NA	NA	NA	NA	NR	NA
OCPs																																					
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.1	**20**	50	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.2	**400**	1000	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1

Table 2c - SVOCs - Superlot 2, Area A

| Area of Site | | | | Superlot 2 | | | |

Table 2c - SVOCs Table 2c - SVOCs - Superlot 2, Area A (Cont'd)

Area of Site				Superlot 2																																Area A					
Sample Location				BH20L2				TP21L2		TP22L2			TP22L2	TP23L2		TP24L2		TP27L2			TP27L2	TP28L2			TP29L2			TP30L2		TP31L2		TP32L2		TP33L2			TP34L2		TP01A		TP02A		TP12A	
Sample ID				BH20L2	BH20L2	BH20L2	BH20L2	TP21L2	TP21L2	TP22L2	QA63 (Intra Dupe for SP22L2)	QA64 (Inter Dupe for SP22L2)	TP22L2	TP23L2	TP23L2	TP24L2	TP24L2	TP27L2	QA55 (Intra Dupe for SP27L2)	QA56 (Inter Dupe for SP27L2)	TP27L2	TP28L2	TP28L2	SP28L2	TP29L2	TP29L2	SP29L2	TP30L2	TP30L2	TP31L2	TP31L2	TP32L2	TP32L2	TP33L2	SP33L2	QA65 (Intra Dupe for SP33L2)	QA66 (Inter Dupe for SP33L2)	TP34L2	TP34L2	TP01A	TP01A	TP02A	TP02A	TP12A	TP12A
Depth (m bgs)				0-0.05			8-8.1	0-0.05	0.1-0.15	0-0.05			0.1-0.15	0-0.05	0.4-0.5	0-0.05	0.5-0.6	0-0.05			0.1-0.15	0-0.05	0.1-0.15	-	0-0.05	0.1-0.15	-	0-0.5	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	-		0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.45-0.55
Date Sampled				17/09/2012			17/09/2012	3/10/2012	3/10/2012	8/10/2012			8/10/2012	8/10/2012	8/10/2012	3/10/2012	3/10/2012	3/10/2012			3/10/2012	3/10/2012	8/10/2012	3/10/2012	3/10/2012	8/10/2012	3/10/2012	3/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012	8/10/2012			8/10/2012	8/10/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012	10/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL E [2]																																						
SVOCs																																									
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin + Dieldrin	1	20	50	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
DDT+DDE+DDD	1	400	1000	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor	1	20	50	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.6	<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	2	5	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.4	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.4	<1	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	3.2	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.2	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthal

Table 2d - Asbestos - Superlot 2, Area A

Area of Site			Superlot 2																
Sample ID			TP3L2	TP4L2	TP5L2	SP5L2	QA59	SP5L2	TP6L2	QA61	TP6L2	TP6L2	TP7L2	TP8L2	TP9L2	TP10L2	TP11L2	TP13L2	TP14L2	TP15L2
Sample Type			SLB	SLB	SLB	SLB	SLB	Fragment	SLB	SLB	Fragment	Fragment	SLB	SLB	SLB	SLB	SS	SLB	SLB	SLB
Laboratory Reference			79932-60	79932-68	79932-72	79932-76	79932-80	79932-77	79932-38	79932-81	79932-42	79932-43	79932-56	79932-52	79932-64	79932-A-84	79932-48	79932-44	80124-16	80124-20
Depth (m bgs)			0.0-0.05	0.0-0.05	0.0-0.05	SP		SP	0.0-0.05		0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.05-0.05	0.05-0.05
Date Sampled			4/10/12	4/10/12	4/10/12	4/10/12		4/10/12	4/10/12		4/10/12	4/10/12	4/10/12	4/10/12	4/10/12	4/10/12	4/10/12	4/10/12	8/10/12	8/10/12
Components	**WA Guidelines for ACM Comm/Ind**	**WA Guidelines for AF/FA**																		
Sample Description			Brown finegrained clay soil	Brown finegrained clay soil	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Beige compressed fibre cement material	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Grey compressed fibre cement material	Beige compressed fibre cement material	Brown finegrained clay soil	Brown coarsegrained soil & rocks	Brown finegrained clay soil	Brown fine-grained soil & rocks	Brown coarse-grained soil	Brown coarsegrained soil & rocks	Dark grey fine-grained clay soil	Dark grey fine-grained clay soil & rocks
a) Chrysotile Asbestos	**NA**	**NA**	-	-	-	-	-	Present	-	-	Present	Present	-	-	-	-	-	-	-	-
b) Amosite Asbestos	**NA**	**NA**	-	-	-	-	-	Present	-	-	Present	Present	-	-	-	-	-	-	-	-
c) Crocidolite Asbestos	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	**NA**	**NA**	484.91	309.93	657.92	468.33	565.95	-	326.92	409.93	-	-	440.37	601.45	311.90	474.87	13.22	552.20	520.83	588.20
e) Fragment Dimentions (mm)	**NA**	**NA**	-	-	-	-	-	221x105x4	-	-	43x30x8	95x67x4	-	-	-	-	-	-	-	-
f) Fibres (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	**NA**	**0.001**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	**NC**	No Asbestos Detected	No Asbestos Detected	**NC**	**NC**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	**0.05%**	**NA**						NC			NC	NC								

Table 2d - Asbestos - Superlot 2, Area A (Cont'd)

Area of Site			Superlot 2																
Sample ID			TP16L2	BH17L2	BH17L2	TP18L2	TP19L2	TP21L2	TP22L2	QA63	TP22L2	TP22L2	TP22L2	TP22L2	TP23L2	TP24L2	TP27L2	QA55	TP28L2	SP28L2F
Sample Type			SLB	SS	SS	SLB	SLB	SLB	SLB	SLB	Fragment	Fragment	Fragment	Fragment	SLB	SLB	SLB	SLB	SLB	Fragment
Laboratory Reference			79932-34	79070-22	79070-24	80124-25	79932-1	79932-30	80124-1	80124-50	80124-6	80124-7	80124-8	80124-9	80124-30	79932-26	79932-22	79932-78	79932-16	79932-21
Depth (m bgs)			0.0-0.05	0.0-0.05	0.5-0.6	0.05-0.05	0.0-0.05	0.0-0.05	0.05-0.05		0.0-0.05	0.1-0.15	0.0-0.05	0.1-0.15	0.0-0.05	0.0-0.05	0.0-0.05		0.0-0.05	SP
Date Sampled			4/10/12	17/09/12	17/09/12	8/10/12	3/10/12	3/10/12	8/10/12		8/10/12	8/10/12	8/10/12	3/10/12	8/10/12	3/10/12	3/10/12		3/10/12	3/10/12
Components	**WA Guidelines for ACM Comm/Ind**	**WA Guidelines for AF/FA**																		
Sample Description			Brown coarsegrained soil, clay & rocks	Brown coarse-grained soil & debris	Beige fine-grained clay soil	Dark grey fine-grained clay soil	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Dark grey sandy clay soil & rocks	Dark grey fine-grained clay soil	Beige compressed fibre cement material	Grey compressed fibre cement material	Beige compressed fibre cement material	Beige compressed fibre cement material	Dark grey fine-grained clay soil & rocks	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Beige compressed fibre cement material
a) Chrysotile Asbestos	**NA**	**NA**	-	-	-	-	-	-	-	-	Present	Present	Present	Present	-	Present	-	Present	-	Present
b) Amosite Asbestos	**NA**	**NA**	-	-	-	-	-	-	-	-	Present	Present	Present	Present	-	-	-	Present	-	Present
c) Crocidolite Asbestos	**NA**	**NA**	-	-	-	-	-	-	-	-	-	Present	-	Present	-	-	-	Present	-	-
d) Sample mass (g)	**NA**	**NA**	462.39	40.00	40.00	364.48	540.94	509.90	291.39	248.44	-	-	-	-	696.50	423.12	532.59	391.61	417.54	-
e) Fragment Dimentions (mm)	**NA**	**NA**	-	-	-	-	-	-	-	-	103x90x5	140x100x4	50x42x5	102x60x5	-	NR	-	NR	-	57x33x4
f) Fibres (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1974	-	6.8472	-	-
h) Fibres by weight of ACM (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1796	-	-	-	-
i) AF w/w Analysis (%)	**NA**	**0.001**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	**NC**	**NC**	**NC**	**NC**	No Asbestos Detected	**NC**	No Asbestos Detected	**NC**	No Asbestos Detected	**NC**
j) ACM w/w Analysis (%)	**0.05%**	**NA**									NC	NC	NC	NC		**0.28%**		**1.72%**		NC

Table 2d - Asbestos - Superlot 2, Area A (Cont'd)

Area of Site															Area A		
Sample ID			TP29L2	SP29L2	SP29L2	SP29L2F	SP29L2F	TP30L2	TP31L2	TP31L2	TP32L2	TP32L2	SP33L2	QA65	TP34L2	TP01A	TP02A	TP12A
Sample Type			SLB	SLB	SLB	Fragment	Fragment	SLB	Fragment	SLB	SLB	Fragment	SLB	SLB	SLB	SLB	SLB	SLB
Laboratory Reference			79932-5	79932-20	79932-9	79932-10	79932-11	79932-12	80124-44	80124-40	80124-45	80124-49	80124-35	80124-51	80124-12	78803-33	78803-37	78803-29
Depth (m bgs)			0.0-0.05	SP	SP	SP	SP	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	SP		0.05-0.05	0.0-0.5	0.0-0.5	0.0-0.5
Date Sampled			3/10/12	3/10/12	3/10/12	3/10/12	3/10/12	3/10/12	4/10/12	8/10/12	8/10/12	8/10/12	8/10/12		8/10/12	11/09/12	11/09/12	11/09/12
Components	**WA Guidelines for ACM Comm/Ind**	**WA Guidelines for AF/FA**																
Sample Description			Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Brown coarsegrained soil & rocks	Grey compressed fibre cement material	Grey compressed fibre cement material	Brown coarsegrained soil & rocks	Beige compressed fibre cement material	Dark grey fine-grained clay soil	Dark grey fine-grained clay soil & rocks	Beige compressed fibre cement material	Dark grey sandy soil & rocks	Dark grey sandy soil & rocks	Dark grey fine-grained clay soil & rocks	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown fine-grained soil
a) Chrysotile Asbestos	**NA**	**NA**	-	-	-	Present	Present	-	Present	-	-	Present	-	-	-	-	-	-
b) Amosite Asbestos	**NA**	**NA**	-	-	-	-	-	-	Present	-	-	-	-	-	-	-	-	-
c) Crocidolite Asbestos	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	**NA**	**NA**	526.37	623.41	491.98	-	-	404.77	-	416.37	409.89	-	299.21	334.89	332.68	526.67	663.22	575.11
e) Fragment Dimentions (mm)	**NA**	**NA**	-	-	-	35x17x7	50x17x5	-	54x45x5	-	-	75x40x6	-	-	-	-	-	-
f) Fibres (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	**NA**	**NA**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	**NA**	**0.001**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	**NC**	**NC**	No Asbestos Detected	**NC**	No Asbestos Detected	No Asbestos Detected	**NC**	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	**0.05%**	**NA**				NC	NC		NC			NC						

Notes:
a) Chrysotile in ACM fragments (g)
b) Amosite in ACM fragments (g)
c) Crocidolite in ACM fragments (g)
d) Total mass of soil sample (g)
e) Laboratory reported dimentions of ACM fragments
f) Total free asbestos AF and FA (g)
g) Laboratory reported mass of ACM
h) Laboratory calculated fibres by weight of ACM (g)
i) Weight/Weight fibres in soil sample/sub-sample (%)
j) Weight/Weight ACM in soil sample/sub-sample (%)
NR = Not reported
NA = No criteria exist
SP = Stockpile
SS = Sub-sample
SLB = Snap Lock Bag
'-' = not identified
NC = Non calculable

Table 3a - Heavy Metals, TPH, BTEX - Area Y

Sample Location						TP1Y		BH2Y				TP3Y		TP4Y		TP5Y		TP6Y		TP7Y		TP8Y		TP9Y			
Sample ID						TP1Y	TP1Y	BH2Y	BH2Y	BH2Y	BH2Y	TP3Y	TP3Y	TP4Y	TP4Y	TP5Y	TP5Y	TP6Y	TP6Y	TP7Y	TP7Y	TP8Y	TP8Y	TP9Y	TP9Y	QAQC 33 (Intra Dupe for TP9Y)	QAQC 34 (Inter Dupe for TP9Y)
Depth (m bgs)						0-0.05	0.5-0.6	0-0.05	0.4-0.5	3-3.1	4-4.1	0-0.05	0.9-1	0-0.05	0.9-1	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0.1-0.15	0.1-0.15
Date Sampled						25/09/2012	25/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012
PID Reading						0.5	0.6	0.0	0.0	0.0	0.0	0.6	1.3	0.6	1.2	0.6	1.0	0.5	0.5	0.4	0.5	0.6	0.9	0.5	0.8	-	-
Soil Matrix Description						Topsoil	Clay	Clay	Clay	Clay	Clay	Topsoil	Clay	Topsoil	Clay	Topsoil	Clay	Topsoil		Topsoil		Topsoil	Clay	Topsoil			
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]																						
Heavy Metals																											
Arsenic	4	-	200	500	***20***	8	4	5	<4	5	<4	6	4	<4	4	4	<4	7	<4	<4	5	5	<4	<4	<4	<4	<5
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Chromium (III+VI)	1	-	-	-	***401***	22	16	16	13	11	14	17	13	11	12	14	15	17	14	12	16	16	13	8	9	8	9
Copper	1	-	2000	5000	***100***	17	20	14	19	13	9	16	19	7	17	8	18	14	12	11	9	10	16	6	5	4	<5
Manganese	1	-	3000	7500	***500***	***2300***	20	***870***	26	490	49	***1200***	***670***	***680***	270	***1400***	98	***1300***	***740***	***1100***	***910***	***1100***	47	150	66	67	44
Mercury	0.1	-	30	75	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	***60***	10	5	8	5	11	3	8	13	5	9	6	9	7	6	6	6	5	6	3	3	3	3
Lead	1	-	600	1500	***600***	27	9	33	8	9	7	22	11	19	10	18	12	78	21	23	18	24	8	20	15	13	11
Zinc	1	-	14000	35000	***200***	33	17	44	14	33	10	29	26	24	20	13	18	140	56	40	11	28	16	29	12	11	8
TPH																											
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<10
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																											
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)
2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 3a - Heavy Metals, TPH, BTEX - Area Y (Cont'd)

Sample Location						TP10Y				TP11Y		TP12Y		TP13Y		TP14Y		TP15Y			TP16Y		BH17Y				
Sample ID						TP10Y	QAQC 35 (Intra Dupe for TP10Y)	QAQC 36 (Inter Dupe for TP10Y)	TP10Y	TP11Y	TP11Y	TP12Y	TP12Y	TP13Y	TP13Y	TP14Y	TP14Y	TP15Y	TP15Y	QAQC 37 (Intra Dupe for TP15Y)	TP16Y	TP16Y	BH17Y	BH17Y	QAQC 18 (Intra Dupe for TP17Y)	BH17Y	BH17Y
Depth (m bgs)						0-0.05	0-0.05	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.9-1	0.9-1	0-0.05	0.5-0.6	0-0.05	1-1.1	1-1.1	2.5-2.6	5-5.1
Date Sampled						25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012
PID Reading						0.8			0.9	0.5	0.5	1.5	1.5	0.7	1.0	0.5	0.6	0.5	1.1	0.0	0.4	0.4	0.0	0.0	-	0.1	0.0
Soil Matrix Description						Topsoil				Topsoil		Topsoil	Clay	Topsoil		Topsoil	Clay	Topsoil	Clay		Topsoil	Clay	Topsoil	Clay		Shale	
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]																						
Heavy Metals																											
Arsenic	4	-	200	500	***20***	<4	<4	<5	<4	<4	<4	<4	6	<4	<4	8	6	7	5	6	7	<4	7	8	7	6	7
Cadmium	0.5	-	40	100	***3***	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-	-	***401***	8	7	7	9	8	8	8	19	12	11	22	15	23	17	13	22	15	24	21	17	10	19
Copper	1	-	2000	5000	***100***	5	4	<5	4	5	4	6	14	7	7	6	15	12	12	14	8	10	10	29	26	13	16
Manganese	1	-	3000	7500	***500***	74	63	79	14	79	14	110	6	180	28	270	18	***610***	19	8	***1000***	18	***870***	21	19	35	***760***
Mercury	0.1	-	30	75	-	0.1	<0.1	<0.1	0.1	0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	***60***	2	2	2	3	3	2	3	4	3	2	4	4	5	3	3	5	4	6	12	8	16	10
Lead	1	-	600	1500	***600***	16	14	15	7	14	6	26	11	28	9	20	9	28	14	13	30	9	36	19	18	10	16
Zinc	1	-	14000	35000	***200***	15	14	15	3	12	4	50	10	45	10	13	13	22	10	12	21	9	30	39	31	48	32
TPH																											
C6 - C9	25	65	-	-	-	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																											
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)
2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 3b - VOCs, PCBs, OCPs - Area Y

Sample Location				TP1Y		BH2Y					TP3Y		TP4Y		TP5Y		TP6Y		TP7Y		TP8Y		TP9Y				TP10Y				TP11Y		TP12Y		TP13Y		TP14Y		TP15Y			TP16Y		BH17Y				
Sample ID				TP1Y	TP1Y	BH2Y	BH2Y	BH2Y	BH2Y	TP3Y	TP3Y	TP4Y	TP4Y	TP5Y	TP5Y	TP6Y	TP6Y	TP7Y	TP7Y	TP8Y	TP8Y	TP9Y	TP9Y	QAQC 33 (Intra Dupe for TP9Y)	QAQC 34 (Inter Dupe for TP9Y)	TP10Y	QAQC 35 (Intra Dupe for TP10Y)	QAQC 36 (Inter Dupe for TP10Y)	TP10Y	TP11Y	TP11Y	TP12Y	TP12Y	TP13Y	TP13Y	TP14Y	TP14Y	TP15Y	TP15Y	QAQC 37 (Intra Dupe for TP15Y)	TP16Y	TP16Y	BH17Y	BH17Y	QAQC 18 (Intra Dupe for TP17Y)	BH17Y	BH17Y
Depth (m bgs)				0-0.05	0.5-0.6	0-0.05	0.4-0.5	3-3.1	4-4.1	0-0.05	0.9-1	0-0.05	0.9-1	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05		0-0.05			0.1-0.15	0-0.05			0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.9-1		0-0.05	0.5-0.6	0-0.05	1-1.1		2.5-2.6	5-5.1
Date Sampled				25/09/2012	25/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012		25/09/2012				25/09/2012				25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012		25/09/2012	25/09/2012	19/09/2012	19/09/2012		19/09/2012	19/09/2012
Compound	EQL	NEPM 1999 HIL E [1]	NEPM 1999 HIL F [2]																																											
VOCs																																															
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Bromodichloromethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Bromoform	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Chloroethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Chloroform	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Chloromethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Dibromomethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Trichloroethene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Tetrachloroethene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Vinyl chloride	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
2-chlorotoluene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
4-chlorotoluene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Bromobenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Chlorobenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Bromomethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Isopropylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
n-butylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
n-propylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
sec-butylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Styrene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
tert-butylbenzene	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
Cyclohexane	1	-	-	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	<1	<1	NA	NA
PCBs																																															
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	NA
PCBs (Sum of total)		20	50	NC	NA	NC	NC	NA	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NA	NA	NC	NC	<0.1	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NA	NC	NA	NC	NC	NC	NA	NA
OCPs																																														
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.3	-	-	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.05	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.1	20	50	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.2	400	1000	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<

Table 3c - SVOCs - Area Y

Sample Location				TP1Y		BH2Y				TP3Y		TP4Y		TP5Y		TP6Y		TP7Y		TP8Y		TP9Y				TP10Y			TP11Y		TP12Y		TP13Y		TP14Y		TP15Y			TP16Y		BH17Y				
Sample ID				TP1Y	TP1Y	BH2Y	BH2Y	BH2Y	BH2Y	TP3Y	TP3Y	TP4Y	TP4Y	TP5Y	TP5Y	TP6Y	TP6Y	TP7Y	TP7Y	TP8Y	TP8Y	TP9Y	TP9Y	QAQC 33 (Intra Dupe for TP9Y)	QAQC 34 (Inter Dupe for TP9Y)	TP10Y	QAQC 35 (Intra Dupe for TP10Y)	QAQC 36 (Inter Dupe for TP10Y)	TP10Y	TP11Y	TP11Y	TP12Y	TP12Y	TP13Y	TP13Y	TP14Y	TP14Y	TP15Y	TP15Y	QAQC 37 (Intra Dupe for TP15Y)	TP16Y	TP16Y	BH17Y	BH17Y	QAQC 18 (Intra Dupe for TP17Y)	BH17Y	BH17Y
Depth (m bgs)				0-0.05	0.5-0.6	0-0.05	0.4-0.5	3-3.1	4-4.1	0-0.05	0.9-1	0-0.05	0.9-1	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.1-0.15				0-0.05			0.1-0.15	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.5-0.6	0-0.05	1-1.1	2.5-2.6	5-5.1
Date Sampled				25/09/2012	25/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012				25/09/2012			25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	25/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012
Compound	EQL	NEPM 1999 HIL E [1]	NEPM 1999 HIL F [2]																																										
SVOCs																																													
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Aldrin + Dieldrin	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	2	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1

Table 3d - Asbestos - Area Y

Sample ID			TP1Y	BH2Y	BH2Y	TP3Y	TP4Y	TP5Y	TP6Y	TP7Y	TP8Y	TP9Y	TP10Y	QAQC35
Sample Type			SLB	SS	SS	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB
Laboratory Reference			79537-5	79126-18	79126-20	79537-17	79537-62	79537-25	79537-9	79537-66	79537-54	79537-13	79537-50	79537-143
Depth (m bgs)			0.0-0.05	0.0-0.05	0.4-0.5	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	
Date Sampled			25/09/12	19/09/12	19/09/12	25/09/12	25/09/12	25/09/12	25/09/12	25/09/12	25/09/12	25/09/12	25/09/12	
Components	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA												
Sample Description			Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained soil & organic debris	Beige coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown fine-grained soil & organic debris	Brown coarse-grained clayey soil	Dark brown fine-grained sandy soil	Brown fine-grained sandy soil & rocks	Brown fine-grained soil & rocks
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	NA	NA	241.61	40.00	40.00	342.52	301.11	385.99	391.88	347.53	504.97	379.06	313.12	224.55
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA												

Table 3d - Asbestos - Area Y (Cont'd)

Sample ID			TP11Y	TP12Y	TP13Y	TP14Y	TP15Y	TP16Y	BH17Y	BH17Y	QAQC18	BH22Y	BH22Y
Sample Type			SLB	SLB	SLB	SLB	SLB	SLB	SS	SS	SS	SS	SS
Laboratory Reference			79537-29	79537-46	79537-33	79537-21	79537-1	79537-70	79126-1	79126-4	79126-46	79126-32	79126-34
Depth (m bgs)			0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	1.0-1.1		0.0-0.05	0.5-0.6
Date Sampled			25/09/12	25/09/12	25/09/12	25/09/12	25/09/12	25/09/12	12/09/12	19/09/12		19/09/12	19/09/12
Components	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA											
Sample Description			Brown fine-grained clayey soil	Brown coarse-grained clay soil & rocks	Brown fine-grained sandy soil	Brown fine-grained soil & rocks	Brown coarse-grained clay soil & rocks	Brown coarse-grained clay soil & rocks	Brown fine-grained soil	Red-brown fine-grained clayey soil	Red-brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soil
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	NA	NA	361.82	445.54	379.14	529.43	347.52	397.00	40.00	10.00	40.00	40.00	40.00
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-	-	-	-	-	-	-
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA											

Notes:
a) Chrysotile in ACM fragments (g)
b) Amosite in ACM fragments (g)
c) Crocidolite in ACM fragments (g)
d) Total mass of soil sample (g)
e) Laboratory reported dimentions of ACM fragments
f) Total free asbestos AF and FA (g)
g) Laboratory reported mass of ACM
h) Laboratory calculated fibres by weight of ACM (g)
i) Weight/Weight fibres in soil sample/sub-sample (%)
j) Weight/Weight ACM in soil sample/sub-sample (%)
NR = Not reported
NA = No criteria exist
SP = Stockpile
SS = Sub-sample
SLB = Snap Lock Bag
-' = not identified
NC = Non calculable

Table 4a - Heavy Metals, TPH, BTEX - Area X

Sample Location						TP1X		TP2X		BH3X				TP4X		TP5X		TP6X				TP7X			TP8X		TP9X		TP10X		TP11X			TP12X		TP13X	
Sample ID						TP1X	TP1X	TP2X	TP2X	BH3X	BH3X	BH3X	BH3X	TP4X	TP4X	TP5X	TP5X	TP6X	TP6X	QAQC21 (Intra Dupe for TP6X)	QAQC22 (Inter Dupe for TP6X)	TP7X	QAQC19 (Intra Dupe for TP7X)	QAQC20 (Inter Dupe for TP7X)	TP8X	TP8X	TP9X	TP9X	TP10X	TP10X	TP11X	QAQC23 (Intra Dupe for TP11X)	TP11X	TP12X	TP12X	TP13X	TP13X
Depth (m bgs)						0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	2.5-2.6	4.5-4.5	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.9-1			0-0.05			0.5-0.6	0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.9-1	0-0.05		0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15
Date Sampled						20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012			20/09/2012			20/09/2012	21/09/2012	20/09/2012	20/09/2012	21/09/2012	21/09/2012	21/09/2012		21/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012
PID Reading						0.2	0.6	0.1	0.8	0.3	0.3	0.4	0.7	0.0	0.0	0.0	0.1	0.5	0.4	-	-	0.7	-	-	0.5	0.1	0.4	0.5	0.7	0.0	0.4	0.4	-	0.4	0.1	0.2	0.6	0.6
Soil Matrix Description						Topsoil	Clay	Topsoil	Clay	Topsoil	Clay		Shale	Topsoil	Clay	Topsoil		Topsoil	Clay			Topsoil			Clay	Topsoil	Clay	Topsoil	Clay	Topsoil	Clay	Fill		Topsoil		Topsoil	
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																															
Heavy Metals																																				
Arsenic	4	-	200	500	*20*	5	<4	5	5	7	4	9	<4	5	<4	9	6	5	<4	<4	6	<4	5	6	5	10	8	7	<4	8	7	7	10	10	6	6	5	5
Cadmium	0.5	-	40	100	*3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-		*401*	18	10	15	18	21	15	19	7	17	14	24	19	17	7	7	12	16	23	24	20	26	19	17	8	26	17	35	40	24	16	18	18	18
Copper	1	-	2000	5000	*100*	20	17	18	17	13	18	21	17	15	18	16	13	8	10	9	12	6	6	8	12	13	15	10	7	15	18	18	28	15	18	16	8	8
Manganese	1	-	3000	7500	*500*	*1000*	77	*1600*	*980*	*2200*	35	480	130	*1100*	240	*2000*	*1500*	440	5	6	6	230	220	304	18	380	18	160	4	400	20	440	*650*	*910*	*1300*	*1500*	390	270
Mercury	0.1	-	30	75	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	*60*	10	6	10	8	8	4	10	10	9	5	8	5	4	2	2	2	3	4	4	5	6	5	4	2	5	5	35	27	8	7	7	4	4
Lead	1	-	600	1500	*600*	29	8	30	18	26	13	17	11	31	10	36	23	23	6	7	10	13	14	18	10	26	17	17	6	24	18	18	29	30	25	23	20	16
Zinc	1	-	14000	35000	*200*	81	18	41	24	28	21	53	47	94	20	45	20	24	10	10	11	15	19	18	15	62	15	27	7	51	14	43	62	55	71	63	21	16
TPH																																						
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<10	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10-C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29-C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																						
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Table 4a - Heavy Metals, TPH, BTEX - Area X (Cont'd)

Sample Location						TP14X		TP15X		TP16X			TP17X		TP18X		TP19X		BH20X				TP21X		BH22X				TP23X		TP24X			TP25X		TP26X	
Sample ID						TP14X	TP14X	TP15X	TP15X	TP16X	TP16X	QAQC25 (Intra Dupe for TP16X)	TP17X	TP17X	TP18X	TP18X	TP19X	TP19X	BH20X	BH20X	BH20X	BH20X	TP21X	TP21X	BH22X	BH22X	BH22X	BH22X	TP23X	TP23X	TP24X	TP24X	QAQC27 (Intra Dupe for TP24X)	TP25X	TP25X	TP26X	TP26X
Depth (m bgs)						0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15		0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	1.5-1.6	3.5-3.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	1.5-1.6	4.5-4.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15		0-0.05	0.5-0.6	0-0.05	0.1-0.15
Date Sampled						21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012		21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	24/09/2012	24/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	21/09/2012	21/09/2012	24/09/2012	24/09/2012		24/09/2012	24/09/2012	24/09/2012	24/09/2012
PID Reading						0.2	0.3	0.5	0.6	0.2	0.3	-	0.3	0.3	0.3	0.4	0.5	1.5	0.4	0.7	0.5	0.9	0.3	0.2					0.6	0.7	0.4	0.3	-	0.4	0.4	0.4	0.2
Soil Matrix Description						Topsoil		Fill		Topsoil			Topsoil	Clay	Fill		Topsoil	Clay	Topsoil	Clay		Shale	Topsoil						Topsoil		Topsoil			Fill	Clay	Topsoil	Clay
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																																
Heavy Metals																																						
Arsenic	4	-	200	500	*20*	6	5	6	7	7	6	6	6	5	9	10	7	<4	5	<4	10	<4	7	5	6	<4	7	10	7	5	5	5	7	<4	<4	7	6
Cadmium	0.5	-	40	100	*3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-		*401*	21	18	21	22	21	21	19	22	17	20	21	18	12	19	16	15	8	19	19	17	12	13	13	19	16	17	14	21	16	13	23	20
Copper	1	-	2000	5000	*100*	8	4	10	11	10	9	9	11	15	46	15	8	13	7	11	24	8	9	10	16	18	24	31	14	13	24	13	11	19	16	29	22
Manganese	1	-	3000	7500	*500*	*1800*	*1700*	*970*	*1000*	*1300*	*1100*	*1100*	*570*	25	*550*	*2400*	*590*	290	*1200*	120	*3100*	17	*3800*	*2200*	*3900*	44	120	*820*	*3200*	*2400*	*1600*	*3400*	*2800*	*760*	37	*1200*	200
Mercury	0.1	-	30	75	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	*60*	6	4	6	7	6	5	5	4	4	9	8	4	6	4	5	24	9	7	6	13	4	19	15	8	8	11	9	10	8	4	15	8
Lead	1	-	600	1500	*600*	25	20	30	28	27	21	21	24	12	110	31	29	10	18	8	28	4	34	22	26	8	20	22	30	25	39	24	26	31	11	50	15
Zinc	1	-	14000	35000	*200*	56	14	58	88	25	16	16	34	12	*240*	62	34	12	14	12	52	37	27	11	24	14	45	56	38	29	98	17	96	83	14	110	24
TPH																																						
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10-C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29-C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																						
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)
2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4a - Heavy Metals, TPH, BTEX - Area X (Cont'd)

Sample Location						TP27x		TP28X			TP29X		TP30X		TP31X		TP32X		TP33X		TP34x		TP35x		TP36x		TP37x		TP38x					TP39x		TP40x	
Sample ID						TP27X	TP27X	TP28X	TP28X	QAQC29 (Intra Dupe for TP28X)	TP29X	TP29X	TP30X	TP30X	TP31X	TP31X	TP32X	TP32X	TP33X	TP33X	TP34x	TP34x	TP35x	TP35x	TP36x	TP36x	TP37x	TP37x	TP38x	QA1 (Intra Dupe for TP38X)	QA2 (Inter Dupe for TP38X)	TP38x	QA3 (Intra Dupe for TP38X)	QA4 (Inter Dupe for TP38X)	TP39x	TP39x	TP40x	TP40x
Depth (m bgs)						0-0.05	0.1-0.15	0-0.15	0.1-0.15		0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	0.45-0.55	0-0.05			0.1-0.15			0-0.5	0.95-1.05	0-0.05	0.1-0.15
Date Sampled						25/09/2012	25/09/2012	24/09/2012	24/09/2012		24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	13/09/2012	12/09/2012	12/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012			11/09/2012			12/09/2012	12/09/2012	12/09/2012	12/09/2012
PID Reading						0.4	0.5	0.3	0.4	-	0.4	0.4	0.5	0.4	0.3	1.0	0.4	0.3	0.3	0.2	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.1	0.3	-	-	0.4	-	-	0.0	0.1	0.1	0.2
Soil Matrix Description						Topsoil		Fill	Clay		Fill		Topsoil		Topsoil	Clay	Topsoil		Topsoil	Clay	Topsoil		Topsoil		Topsoil	Clay	Topsoil		Fill			Topsoil			Topsoil	Clay	Topsoil	
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																																
Heavy Metals																																					
Arsenic	4	-	200	500	*20*	<4	6	<4	9	9	6	7	<4	5	5	4	4	6	8	7	<4	5	6	<4	7	<4	7	7	11	9	12	4	5	5	<4	5	<4	<4
Cadmium	0.5	-	40	100	*3*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-	-	*401*	16	14	110	22	21	20	20	14	20	17	11	15	20	21	19	14	16	17	14	20	10	23	25	21	19	20	17	17	18	14	21	12	10
Copper	1	-	2000	5000	*100*	21	14	33	21	16	14	11	11	16	14	16	18	15	12	13	16	9	11	10	8	10	10	12	39	31	32	15	14	13	6	11	6	4
Manganese	1	-	3000	7500	*500*	*1200*	*2000*	*570*	*3900*	*4600*	*1800*	*2000*	*870*	*1300*	*1100*	82	*1100*	*1900*	*1300*	*1500*	110	230	420	94	*1000*	*660*	410	14	*750*	*750*	*645*	260	490	314	300	20	230	170
Mercury	0.1	-	30	75	-	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	*60*	10	9	*98*	13	11	11	9	8	7	7	6	10	10	6	7	6	4	4	3	6	6	5	3	19	11	11	5	5	5	3	4	3	3
Lead	1	-	600	1500	*600*	34	20	10	35	34	27	26	28	20	32	14	28	22	32	27	40	18	30	12	24	12	31	13	210	160	161	16	20	14	19	11	18	9
Zinc	1	-	14000	35000	*200*	97	19	66	89	56	110	100	45	17	120	19	54	16	42	33	67	29	47	14	18	19	37	8	*290*	*270*	*262*	20	21	19	62	9	42	23
TPH																																						
C6 - C9	25	65	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<10	<25	<25	<10	<25	<25	<25	<25
C10-C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29-C36	100	-	-	-	-	260	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	260	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																																						
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.5	<2	<2	<0.5	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Table 4a - Heavy Metals, TPH, BTEX - Area X (Cont'd)

Sample Location						TP41x			TP42x		TP43x		TP44x		TP45x		TP46x		TP47x		TP48x		TP49x		TP50x	
Sample ID						TP41x	QA5 (Intra Dupe for TP41X)	QA6 (Inter Dupe for TP41X)	TP42x	TP42x	TP43x	TP43x	TP44x	TP44x	TP45x	TP45x	TP46x	TP46x	TP47x	TP47x	TP48x	TP48x	TP49x	TP49x	TP50x	TP50x
Depth (m bgs)						0-0.05			0.1-0.15		0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	0.95-1.05	0-0.05	0.1-0.15	0.1-0.15	0.3-0.4	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15
Date Sampled						12/09/2012			12/09/2012		11/09/2012	11/09/2012	12/09/2012	12/09/2012	11/09/2012	11/09/2012	12/09/2012	11/09/2012	13/09/2012	13/09/2012	12/09/2012	12/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012
PID Reading						0.0	-	-	0.1	-	-	0.2	0.3	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.3	0.4	0.3	0.2	0.2	3.5	0.0	0.0
Soil Matrix Description						Topsoil					Topsoil				Topsoil		Topsoil	Clay	Topsoil	Clay	Topsoil		Fill		Topsoil			Topsoil	
Compound	EQL	EPA 1994 Health and Ecological [1]	NEPM 1999 HIL E [2]	NEPM 1999 HIL F [3]	DEC 2 PILs (Column 5) [4]																					
Heavy Metals																										
Arsenic	4	-	200	500	*20*	5	5	6	5	4	6	<4	5	10	7	<4	4	5	7	<4	<4	*29*	17	5	6	<4	4	5	6
Cadmium	0.5	-	40	100	*3*	<0.5	<0.5	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	*22*	*9.5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium (III+VI)	1	-	-	-	*401*	17	20	19	17	15	18	15	18	21	22	10	16	14	20	10	12	57	45	30	23	13	14	16	19
Copper	1	-	2000	5000	*100*	16	15	18	8	7	8	7	11	29	23	4	15	10	22	4	6	*11,000*	*1400*	49	29	13	14	12	12
Manganese	1	-	3000	7500	*500*	300	290	343	210	200	274	230	100	300	190	250	28	*660*	50	350	82	370	370	*830*	*560*	*590*	*930*	*610*	*1000*
Mercury	0.1	-	30	75	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.4	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	600	3000	*60*	3	4	4	3	3	3	4	5	12	9	3	5	4	5	3	4	*62*	49	25	16	7	9	6	7
Lead	1	-	600	1500	*600*	18	21	25	14	12	18	15	13	24	22	13	9	26	14	14	10	*1100*	*770*	100	26	26	23	26	23
Zinc	1	-	14000	35000	*200*	56	63	64	30	26	77	21	14	45	30	14	14	28	24	15	8	*6800*	*5800*	180	56	38	32	35	21
TPH																													
C6 - C9	25	65	-	-	-	<25	<25	<10	<25	<25	<10	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10-C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	100	130	<100	<100	<100	<100	<100	<100
C29-C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	220	210	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)		1000	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	320	340	NC	NC	NC	NC	NC	NC
BTEX																													
Benzene	0.2	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	3.1	-	-	-	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	1.4	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<0.5	<2	<2	<0.5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		14	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)
2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4b - VOCs, PCBs, OCPs - Area X

Sample Location				TP1X		TP2X		BH3X				TP4X		TP5X		TP6X				TP7X				TP8X		TP9X		TP10X		TP11X			TP12X	
Sample ID				TP1X	TP1X	TP2X	TP2X	BH3X	BH3X	BH3X	BH3X	TP4X	TP4X	TP5X	TP5X	TP6X	TP6X	QAQC21 (Intra Dupe for TP6X)	QAQC22 (Inter Dupe for TP6X)	TP7X	QAQC19 (Intra Dupe for TP7X)	QAQC20 (Inter Dupe for TP7X)	TP7X	TP8X	TP8X	TP9X	TP9X	TP10X	TP10X	TP11X	QAQC23 (Intra Dupe for TP11X)	TP11X	TP12X	TP12X
Depth (m bgs)				0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	2.5-2.6	4.5-4.5	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.9-1			0-0.05			0.5-0.6	0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.9-1	0-0.05		0.1-0.15	0-0.05	0.1-0.15
Date Sampled				20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012			20/09/2012			20/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012	21/09/2012	21/09/2012	21/09/2012		21/09/2012	21/09/2012	21/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																															
VOCs																																		
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Bromodichloromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Bromoform	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Chloroethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Chloroform	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Chloromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Dibromomethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Trichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Tetrachloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Vinyl chloride	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
2-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
4-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Bromobenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Chlorobenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Bromomethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Isopropylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
n-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
n-propylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
sec-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Styrene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
tert-butylbenzene	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	<0.5	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
Cyclohexane	1	-	-	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	NA	NA	<1	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	<1	NA
PCBs																																		
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	<0.1	NA
PCBs (Sum of total)		**20**	50	NC	NA	NC	NA	NC	NC	NA	NA	NC	NA	NC	NA	NC	NA	NA	NA	NC	NC	<0.1	NA	NC	NA	NC	NA	NC	NA	NC	NC	NA	NC	NA
OCPs																																		
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.05	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4b - VOCs, PCBs, OCPs - Area X (Cont'd)

Sample Location				TP13X		TP14X		TP15X		TP16X			TP17X		TP18X		TP19X		BH20X				TP21X		BH22X				TP23X		TP24X			TP25X	
Sample ID				TP13X	TP13X	TP14X	TP14X	TP15X	TP15X	TP16X	TP16X	QAQC25 (Intra Dupe for TP16X)	TP17X	TP17X	TP18X	TP18X	TP19X	TP19X	BH20X	BH20X	BH20X	BH20X	TP21X	TP21X	BH22X	BH22X	BH22X	BH22X	TP23X	TP23X	TP24X	TP24X	QAQC27 (Intra Dupe for TP24X)	TP25X	TP25X
Depth (m bgs)				0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15		0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	1.5-1.6	3.5-3.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	1.5-1.6	4.5-4.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15		0-0.05	0.5-0.6
Date Sampled				20/09/2012	20/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012		21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	24/09/2012	24/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	21/09/2012	21/09/2012	24/09/2012	24/09/2012		24/09/2012	24/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																															
VOCs																																		
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Bromodichloromethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Bromoform	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Chloroethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Chloroform	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Chloromethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Dibromomethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Trichloroethene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Tetrachloroethene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Vinyl chloride	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
2-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
4-chlorotoluene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Bromobenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Chlorobenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Bromomethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Isopropylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
n-butylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
n-propylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
sec-butylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Styrene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
tert-butylbenzene	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
Cyclohexane	1	-	-	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	<1	NA	NA	<1	NA	<1	NA	NA	<1	NA
PCBs																																		
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	NA	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA
PCBs (Sum of total)		**20**	50	NC	NA	NC	NA	NC	NA	NC	NA	NA	NC	NA	NC	NA	NC	NA	NC	NC	NA	NA	NC	NA	NC	NC	NA	NA	NC	NA	NC	NA	NA	NC	NA
OCPs																																		
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	**0.2**	<0.3	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4b - VOCs, PCBs, OCPs - Area X (Cont'd)

Sample Location				TP26X		TP27X		TP28X			TP29X		TP30X		TP31X		TP32X		TP33X		TP34x		TP35x		TP36x		TP37x		TP38x						TP39x	
Sample ID				TP26X	TP26X	TP27X	TP27X	TP28X	TP28X	QAQC29 (Intra Dupe for TP28X)	TP29X	TP29X	TP30X	TP30X	TP31X	TP31X	TP32X	TP32X	TP33X	TP33X	TP34x	TP34x	TP35x	TP35x	TP36x	TP36x	TP37x	TP37x	TP38x	QA1 (Intra Dupe for TP38X)	QA2 (Inter Dupe for TP38X)	TP38x	QA3 (Intra Dupe for TP38X)	QA4 (Inter Dupe for TP38X)	TP39x	TP39x
Depth (m bgs)				0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.15	0.1-0.15		0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	0.45-0.55	0-0.05			0.1-0.15			0-0.5	0.95-1.05
Date Sampled				24/09/2012	24/09/2012	25/09/2012	25/09/2012	24/09/2012	24/09/2012		24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	13/09/2012	13/09/2012	12/09/2012	12/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012			11/09/2012			12/09/2012	12/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																																
VOCs																																			
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,1,1-trichloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,1,2-trichloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,1-dichloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,1-dichloroethene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,1-dichloropropene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,2,3-trichloropropane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,2-dichloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,2-dichloropropane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,3-dichloropropane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
2,2-dichloropropane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Bromodichloromethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Bromoform	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Carbon tetrachloride	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Chlorodibromomethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Chloroethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<5	NA	NA	NA	<1	NA
Chloroform	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Chloromethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<5	NA	NA	NA	<1	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Dibromomethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Trichloroethene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Tetrachloroethene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Vinyl chloride	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<5	NA	NA	NA	<1	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
2-chlorotoluene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
4-chlorotoluene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Bromobenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Chlorobenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,2-dibromoethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Bromomethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<5	NA	NA	NA	<1	NA
Dichlorodifluoromethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<5	NA	NA	NA	<1	NA
Trichlorofluoromethane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<5	NA	NA	NA	<1	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Isopropylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
n-butylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
n-propylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
p-isopropyltoluene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
sec-butylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Styrene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
tert-butylbenzene	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	<0.5	NA	NA	NA	<1	NA
Cyclohexane	1	-	-	<1	NA	<1	NA	NA	<1	<1	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	NA	<1	<1	NA	NA	NA	NA	<1	NA
PCBs																																					
Arochlor 1016	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
Arochlor 1221	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
Arochlor 1232	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
Arochlor 1242	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
Arochlor 1248	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
Arochlor 1254	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
Arochlor 1260	0.1	-	-	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1	NA	NA	NA	NA	<0.1	NA
PCBs (Sum of total)		**20**	50	NC	NA	NC	NA	NA	NC	NC	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NA	NC	NC	<0.1	NA	NA	NA	NC	NA
OCPs																																					
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	<0.3	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Aldrin + Dieldrin	0.2	**20**	50	<0.2	<0.2	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.05	<0.2	<0.2
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1
DDT+DDE+DDD	0.3	**400**	1000	<0.3	<0.3	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.05	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4b - VOCs, PCBs, OCPs - Area X (Cont'd)

Sample Location				TP40x		TP41x						TP42x		TP43x		TP44x		TP45x		TP46x		TP47x		TP48x		TP49x		TP50x		Area X	
Sample ID				TP40x	TP40x	TP41x	QA5 (Intra Dupe for TP41X)	QA6 (Inter Dupe for TP41X)	TP41x	QA7 (Intra Dupe for TP41X)	QA8 (Inter Dupe for TP41X)	TP42x	TP42x	TP43x	TP43x	TP44x	TP44x	TP45x	TP45x	TP46x	TP46x	TP47x	TP47x	TP48x	TP48x	TP49x	TP49x	TP50x	TP50x	DSP	ECBH-CAR
Depth (m bgs)				0-0.05	0.1-0.15	0-0.05			0.1-0.15			0-0.05		0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	0.95-1.05	0-0.05	0.1-0.15	0.1-0.15	0.3-0.4	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0-0.05
Date Sampled				12/09/2012	12/09/2012	12/09/2012			12/09/2012			12/09/2012	12/09/2012	11/09/2012	11/09/2012	12/09/2012	12/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012	13/09/2012	13/09/2012	12/09/2012	12/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	12/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																												
VOCs																															
1,1,1,2-tetrachloroethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<0.2	<0.2
1,1,1-trichloroethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,1,2,2-tetrachloroethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<0.5	<0.5
1,1,2-trichloroethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<2	<2
1,1-dichloroethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,1-dichloroethene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<0.5	<0.5
1,1-dichloropropene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2,3-trichloropropane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2-dibromo-3-chloropropane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2-dichloroethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2-dichloropropane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,3-dichloropropane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
2,2-dichloropropane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Bromodichloromethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Bromoform	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Carbon tetrachloride	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Chlorodibromomethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Chloroethane	1	-	-	NA	<1	<1	<1	<5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Chloroform	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Chloromethane	1	-	-	NA	<1	<1	<1	<5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
cis-1,2-dichloroethene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
cis-1,3-dichloropropene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Dibromomethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Trichloroethene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Tetrachloroethene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
trans-1,2-dichloroethene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
trans-1,3-dichloropropene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Vinyl chloride	1	-	-	NA	<1	<1	<1	<5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2,3-trichlorobenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
2-chlorotoluene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
4-chlorotoluene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Bromobenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Chlorobenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2-dibromoethane	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Bromomethane	1	-	-	NA	<1	<1	<1	<5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Dichlorodifluoromethane	1	-	-	NA	<1	<1	<1	<5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Trichlorofluoromethane	1	-	-	NA	<1	<1	<1	<5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,2,4-trimethylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
1,3,5-trimethylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Isopropylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
n-butylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
n-propylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
p-isopropyltoluene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
sec-butylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Styrene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
tert-butylbenzene	1	-	-	NA	<1	<1	<1	<0.5	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
Cyclohexane	1	-	-	NA	<1	<1	<1	NA	NA	NA	NA	NA	<1	<1	NA	<1	NA	<1	NA	<1	NA	NA	<1	<1	NA	NA	<1	<1	NA	<1	<1
PCBs																															
Arochlor 1016	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
Arochlor 1221	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
Arochlor 1232	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
Arochlor 1242	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
Arochlor 1248	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
Arochlor 1254	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
Arochlor 1260	0.1	-	-	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	<0.1	NA	NA	<0.1	<0.1	NA	<0.1	<0.1
PCBs (Sum of total)		**20**	50	NA	NC	NC	NC	<0.1	NA	NA	NA	NA	NC	NC	NA	NC	NA	NC	NA	NC	NA	NA	NC	NC	NA	NA	NC	NC	NA	NR	NR
OCPs																															
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Aldrin + Dieldrin	0.2	**20**	50	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2
DDT+DDE+DDD	0.3	**400**	1000	<0.3	<0.3	<0.3	<0.3	<0.05	<0.3	<0.3	<0.05	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4c - SVOCs - Area X

Sample Location				TP1X		TP2X		BH3X				TP4X		TP5X		TP6X				TP7X				TP8X		TP9X		TP10X		TP11X			TP12X		TP13X		TP14X		TP15X	
Sample ID				TP1X	TP1X	TP2X	TP2X	BH3X	BH3X	BH3X	BH3X	TP4X	TP4X	TP5X	TP5X	TP6X	TP6X	QAQC21 (Intra Dupe for TP6X)	QAQC22 (Inter Dupe for TP6X)	TP7X	QAQC19 (Intra Dupe for TP7X)	QAQC20 (Inter Dupe for TP7X)	TP7X	TP8X	TP8X	TP9X	TP9X	TP10X	TP10X	TP11X	QAQC23 (Intra Dupe for TP11X)	TP11X	TP12X	TP12X	TP13X	TP13X	TP14X	TP14X	TP15X	TP15X
Depth (m bgs)				0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	2.5-2.6	4.5-4.5	0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.9-1			0-0.05			0.5-0.6	0-0.05	0.5-0.6	0-0.05	0.9-1	0-0.05	0.9-1	0-0.05		0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15
Date Sampled				20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012			20/09/2012			20/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012	21/09/2012	21/09/2012	21/09/2012		21/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012
Compound	EQL	NEPM 1999 HIL F [1]	NEPM 1999 HIL F [2]																																				
SVOCs																																							
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin + Dieldrin	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT+DDE+DDD	1	400	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	2	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isophorone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-(acetylamino) fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-(dimethylamino) azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Table 4c - SVOCs - Area X (Cont'd)

Sample Location				TP16X			TP17X		TP18X		TP19X		BH20X				TP21X		BH22X				TP23X		TP24X			TP25X		TP26X		TP27X		TP28X			TP29X		TP30X	
Sample ID				TP16X	TP16X	QAQC25 (Intra Dupe for TP16X)	TP17X	TP17X	TP18X	TP18X	TP19X	TP19X	BH20X	BH20X	BH20X	BH20X	TP21X	TP21X	BH22X	BH22X	BH22X	BH22X	TP23X	TP23X	TP24X	TP24X	QAQC27 (Intra Dupe for TP24X)	TP25X	TP25X	TP26X	TP26X	TP27X	TP27X	TP28X	TP28X	QAQC29 (Intra Dupe for TP28X)	TP29X	TP29X	TP30X	TP30X
Depth (m bgs)				0-0.05	0.1-0.15		0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.9-1	0-0.05	0.1-0.15	1.5-1.6	3.5-3.6	0-0.05	0.1-0.15	0-0.05	0.5-0.6	1.5-1.6	4.5-4.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15		0-0.05	0.5-0.6	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.15	0.1-0.15		0-0.05	0.1-0.15	0-0.05	0.1-0.15
Date Sampled				21/09/2012	21/09/2012		21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	21/09/2012	20/09/2012	20/09/2012	20/09/2012	20/09/2012	24/09/2012	24/09/2012	19/09/2012	19/09/2012	19/09/2012	19/09/2012	21/09/2012	21/09/2012	24/09/2012	24/09/2012		24/09/2012	24/09/2012	24/09/2012	24/09/2012	25/09/2012	25/09/2012	24/09/2012	24/09/2012		24/09/2012	24/09/2012	24/09/2012	24/09/2012
Compound	EQL	NEPM 1999 HIL F [1]	NEPM 1999 HIL F [2]																																					
SVOCs																																								
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
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4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroethoxy) methane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Table 4c - SVOCs - Area X (Cont'd)

Sample Location				TP31X		TP32X		TP33X		TP34x		TP35x		TP36x		TP37x		TP38x						TP39x		TP40x		TP41x						TP42x		TP43x		TP44x		TP45x	
Sample ID				TP31X	TP31X	TP32X	TP32X	TP33X	TP33X	TP34x	TP34x	TP35x	TP35x	TP36x	TP36x	TP37x	TP37x	TP38x	QA1 (Intra Dupe for TP38X)	QA2 (Inter Dupe for TP38X)	TP38x	QA3 (Intra Dupe for TP38X)	QA4 (Inter Dupe for TP38X)	TP39x	TP39x	TP40x	TP40x	TP41x	QA5 (Intra Dupe for TP41X)	QA6 (Inter Dupe for TP41X)	TP41x	QA7 (Intra Dupe for TP41X)	QA8 (Inter Dupe for TP41X)	TP42x	TP42x	TP43x	TP43x	TP44x	TP44x	TP45x	
Depth (m bgs)				0-0.05	0.9-1	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	0.45-0.55	0-0.05						0-0.5	0.95-1.05	0-0.05	0.1-0.15	0-0.05						0-0.05		0-0.05	0.1-0.15	0-0.05	0.45-0.55	0-0.05	
Date Sampled				24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	24/09/2012	13/09/2012	13/09/2012	12/09/2012	12/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012	11/09/2012						12/09/2012	12/09/2012	12/09/2012	12/09/2012	12/09/2012						12/09/2012	12/09/2012	11/09/2012	11/09/2012	12/09/2012	12/09/2012	11/09/2012	
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]																																				
SVOCs																																							
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0,5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<2.5	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<2.5	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.6	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Aldrin + Dieldrin	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
DDT+DDE+DDD	1	400	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Heptachlor	1	20	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	NA	<1	<1	NA	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	2	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.6	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	0.9	<1	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	0.8	<1	<1	<1	<1	<1	<1
Phenol	1	17000	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.7	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	0.6	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0,5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Isophorone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
2-(acetylamino) fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
4-(dimethylamino) azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroethoxy) methane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5	<1	<1	<0.5	<1	<1	<1	<1	<1	<1	<0.5	<1	<1

Table 4c - SVOCs - Area X (Cont'd)

Sample Location				TP45x	TP46x		TP47x		TP48x		TP49x		TP50x		Area X	
Sample ID				TP45x	TP46x	TP46x	TP47x	TP47x	TP48x	TP48x	TP49x	TP49x	TP50x	TP50x	DSP	ECBH-CAR
Depth (m bgs)				0.95-1.05	0-0.05	0.1-0.15	0.1-0.15	0.3-0.4	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0.1-0.15	0-0.05	0-0.05
Date Sampled				11/09/2012	11/09/2012	11/09/2012	13/09/2012	13/09/2012	12/09/2012	12/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	13/09/2012	12/09/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]													
SVOCs																
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin + Dieldrin	1	**20**	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT+DDE+DDD	1	**400**	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor	1	**20**	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	**1**	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	**2**	5	<1	<1	<1	<1	<1	**2**	<1	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	**2**	<1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	**2**	<1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	**2**	<1	<1	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	**3**	<1	<1	<1	<1	<1	<1	<1
Phenol	1	**17000**	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	**4**	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isophorone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-(acetylamino) fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-(dimethylamino) azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroethoxy) methane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroisopropyl) ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbazole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzofuran	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloropropene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methapyrilene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosomorpholine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosopiperidine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenacetin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 4d - Asbestos - Area X

Sample ID	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA	TP1X	TP1X	BH3X	BH3X	TP4X	TP5X	TP6X	TP7X	QAQC19	TP8X	TP10X	TP11X	TP11X	
Sample Type			SLB	SLB	SS	SS	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	Fragment	
Laboratory Reference			79247-29	79247-33	79247-1	79247-3	79247-37	79247-41	79247-45	79247-49	79247-61	79382-29	79382-1	79382-37	79382-41	79382-42
Depth (m bgs)			0.0-0.05	0.0-0.05	0.0-0.05	0.5-0.6	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05		0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05F	0.0-0.05SF
Date Sampled			20/09/12	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12		21/09/12	21/09/12	21/09/12	21/09/12	
Components																
Sample Description			Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soils	Red-brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown coarse-grained soil & rocks	Brown fine-grained soil & debris	Brown coarse-grained clayey soil	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Red-brown fine-grained clay soil	Assorted fibre cement	Assorted fibre cement fragments
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	Present	Present
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	Present	Present
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	Present	Present
d) Sample mass (g)	NA	NA	191.45	277.81	40.00	40.00	195.28	344.84	546.21	227.79	285.21	313.81	214.99	419.87	-	-
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	170x125x5	155x140x5
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	NC	NC
j) ACM w/w Analysis (%)	0.05%	NA													NC	NC

Sample ID	TP1X	TP2X	TP3X	TP4X	TP5X	TP6X	TP7X	TP8X	TP9X	TP10X	TP11X	TP12X	TP13X	TP14X	TP15X	TP16X	TP17X	TP18X	TP19X	TP20X
Sample Type	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB
Laboratory Reference	79247-29	79247-33	79247-1	79247-3	79247-37	79247-41	79247-45	79247-49	79247-61	79382-29	79382-1	79382-37	79382-41	79382-42	79382-5	79382-17	79382-43	79382-13	79382-9	79382-25
Depth (m bgs)	0.0-0.05	0.0-0.05	0.0-0.05	0.5-0.6	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05		0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05F	0.0-0.05SF	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05
Date Sampled	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12	20/09/12		21/09/12	21/09/12	21/09/12	21/09/12		21/09/12	21/09/12	21/09/12	21/09/12	21/09/12	21/09/12
Components																				
Sample Description	Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soils	Red-brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown fine-grained clayey soil	Brown coarse-grained soil & rocks	Brown fine-grained soil & debris	Brown coarse-grained clayey soil	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Red-brown fine-grained clay soil	Assorted fibre cement	Assorted fibre cement fragments	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris
a) Chrysotile Asbestos	-	-	-	-	-	-	-	-	-	-	-	-	Present	Present	-	-	-	-	-	-
b) Amosite Asbestos	-	-	-	-	-	-	-	-	-	-	-	-	Present	Present	-	-	-	-	-	-
c) Crocidolite Asbestos	-	-	-	-	-	-	-	-	-	-	-	-	Present	Present	-	-	-	-	-	-
d) Sample mass (g)	191.45	277.81	40.00	40.00	195.28	344.84	546.21	227.79	285.21	313.81	214.99	419.87	-	-	401.45	387.82	421.48	522.91	361.84	256.94
e) Fragment Dimentions (mm)	-	-	-	-	-	-	-	-	-	-	-	-	170x125x5	155x140x5	-	-	-	-	-	-
f) Fibres (g)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	NC	NC	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)													NC	NC						

Table 4d - Asbestos - Area X (Cont'd)

Sample ID	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA	TP33X	TP29X	TP15X	TP13X	BH20X	BH20X	TP21X	TP24X	TP25X	TP26X	TP27X	TP28X	QAQC29	TP30X	TP31X	TP32X	TP34X	TP35X	TP36x	TP37X	TP38X	TP40x
Sample Type			SLB	SLB	Fragment	SLB	SS	SS	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	SLB	Fragment	SLB
Laboratory Reference			79382-47	79382-67	79382-93	79247-57	79247-15	79247-16	79382-79	79382-71	79382-75	79382-83	79537-58	79382-52	79382-90	79382-55	79382-59	79382-63	78908-31	78908-1	78803-16	78803-25	78803-11	78803-1
Depth (m bgs)			0.0-0.05	0.0-0.05	0.0-0.05F	0.0-0.05	0.0-0.05	0.1-0.15	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.05	0.1-0.15		0.0-0.05	0.0-0.05	0.0-0.05	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Date Sampled			24/09/12	24/09/12	24/09/12	20/09/12	20/09/12	20/09/12	24/09/12	24/09/12	24/09/12	24/09/12	25/09/12	24/09/12		24/09/12	24/09/12	24/09/12	12/09/12	12/09/12	11/09/12	11/09/12	11/09/12	11/09/12
Components																								
Sample Description			Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Grey compressed cement fragments	Brown fine-grained clayey soils	Brown fine-grained soil	Brown fine-grained clayey soils	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown coarse-grained clay soil	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown fine-grained soil & organic debris	Brown coarse-grained soil & debris	Brown fine-grained soil & debris	Brown fine-grained soil & rocks	Brown coarse-grained soil & debris	Beige compressed fiber cement material	Light brown fine-grained soil
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-	-	Present	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
d) Sample mass (g)	NA	NA	409.28	301.72	-	449.79	40.00	40.00	473.13	384.54	414.86	229.83	274.20	139.93	399.53	269.07	298.17	260.09	420.59	622.80	640.79	617.89	-	546.01
e) Fragment Dimentions (mm)	NA	NA	-	-	140x80x23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	143x71x10	-
f) Fibres (g)	NA	NA	-	-	-	-	-	-	0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-	-	NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	0.0001%	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	NC	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA							NC														NC	

Table 4d - Asbestos - Area X (Cont'd)

Sample ID	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA	TP43x	TP38X	TP38x	QA1	TP39X	TP40X	TP41X	TP42X	TP43X	TP44X	TP45x	TP47X	TP48X	TP49X	TP50X
Sample Type			SLB	Fragment	SLB	SLB	SLB	SLB	SLB	SLB	Fragment	SLB	SLB	SLB	SLB	SLB	SLB
Laboratory Reference			78803-5	78803-12	78803-10	78803-41	78908-5	78908-13	78908-9	78908-21	78803-6	78908-17	78803-21	78908-37	78908-26	78908-42	78908-45
Depth (m bgs)			0.0-0.5	0.0-0.5	0.0-0.5		0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Date Sampled			11/09/12	11/09/12	11/09/12		12/09/12	12/09/12	12/09/12	12/09/12	11/09/12	12/09/12	11/09/12	12/09/12	12/09/12	12/09/12	12/09/12
Components																	
Sample Description			Brown coarse-grained soil & debris	Beige compressed fibre cement material	Brown coarse-grained soil & debris	Brown coarse-grained soil & debris	Brown fine-grained soil & debris	Brown fine-grained soil & debris	Brown fine-grained soil & debris	Brown coarse-grained clay soil	Grey compressed fibre cement material	Brown fine-grained soil & debris	Brown fine-grained soil & rocks	Red-brown fine-grained soil & debris	Brown coarse-grained clay soil	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
a) Chrysotile Asbestos	NA	NA	-	Present	-	-	-	-	-	-	Present	-	-	Present	-	-	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-	-	-	-	Present	-	-	Present	-	-	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-	-	-	-	-	-	-	Present	-	-	-
d) Sample mass (g)	NA	NA	494.16	-	415.88	439.73	492.96	564.47	396.20	256.48	-	601.55	497.17	447.40	376.47	505.32	350.55
e) Fragment Dimentions (mm)	NA	NA	-	33x26x4	-	-	-	-	-	-	165x60x20	-	-	NR	-	-	-
f) Fibres (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-	-	-	-	-	-	-	16.7706	-	-	-
h) Fibres by weight of ACM (g)	NA	NA					-	-	-	-		-		2.5156	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	NC	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	NC	No Asbestos Detected	No Asbestos Detected	NC	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA		NC							NC			3.75%			

Notes:
a) Chrysotile in ACM fragments (g)
b) Amosite in ACM fragments (g)
c) Crocidolite in ACM fragments (g)
d) Total mass of soil sample (g)
e) Laboratory reported dimentions of ACM fragments
f) Total free asbestos AF and FA (g)
g) Laboratory reported mass of ACM
h) Laboratory calculated fibres by weight of ACM (g)
i) Weight/Weight fibres in soil sample/sub-sample (%)
j) Weight/Weight ACM in soil sample/sub-sample (%)
NR = Not reported
NA = No criteria exist
SP = Stockpile
SS = Sub-sample
SLB = Snap Lock Bag
-' = not identified
NC = Non calculable

Table 5a

Client: Western Sydney Parklands Trust

Project: Environmental Site Assessment, Proposed Superlots 1,2 Areas A,C,P,Q,X Y, Eastern Creek Business Hub, Rooty Hill Road South, Rooty Hill NSW

Table 5a - Heavy Metals, TPH, BTEX - Area C

Sample Location						TP25C			TP26C		TP35C				TP36C		
Sample ID						TP25C	TP25C	QA71 (Intra Dupe for SP25C)	TP26C	TP26C	TP35C	QA69 (Intra Dupe for SP35C)	TP35CA	TP35C	TP36C	QA67 (Intra Dupe for SP36C)	TP36C
Depth (m bgs)						0-0.05	0.1-0.15			0.5-0.6	0-0.05		0-0.05	0.1-0.15	0-0.05		0.1-0.15
Date Sampled						9/10/2012	9/10/2012		9/10/2012	9/10/2012	9/10/2012		9/10/2012	9/10/2012	9/10/2012		9/10/2012
PID Reading						0.2	0.1		0.1	0.0	0.0		0.0	0.0	0.0		0.0
Soil Matrix Description						Fill			Fill	Clay	Fill			Clay	Fill		Clay
Compound	**EQL**	**EPA 1994 Health and Ecological [1]**	**NEPM 1999 HIL E [2]**	NEPM 1999 HIL F [3]	***DEC 2 PILs (Column 5)*** [4]												
Heavy Metals																	
Arsenic	4	-	**200**	500	***20***	<4	8	7	5	6	8	13	<4	7	<4	9	7
Cadmium	0.5	-	**40**	100	***3***	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.5	<0.5
Chromium (III+VI)	1	-	-	-	***401***	6	20	20	15	30	19	18	3	18	36	27	25
Copper	1	-	**2000**	5000	***100***	38	7	7	25	15	27	34	90	15	37	19	16
Manganese	1	-	**3000**	7500	***500***	***560***	390	400	***590***	44	360	***770***	300	18	490	100	180
Mercury	0.1	-	**30**	75	-	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	1	-	**600**	3000	***60***	17	3	3	14	13	11	15	5	4	34	4	7
Lead	1	-	**600**	1500	***600***	17	17	18	15	16	7	23	7	13	13	17	14
Zinc	1	-	**14000**	35000	***200***	54	9	8	41	13	34	57	27	10	53	17	20
TPH																	
C6 - C9	25	**65**	-	-	-	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
C10 - C14	50	-	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	150	<100	<100	<100	<100
C29 - C36	100	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	740	<100	260	<100	<100
+C10 - C36 (Sum of total)		**1000**	-	-	-	NC	NC	NC	NC	NC	NC	NC	890	NC	260	NC	NC
BTEX																	
Benzene	0.2	**1**	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	**3.1**	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	**1.4**	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene Total		**14**	-	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are in mg/kg
1 - NSW EPA Guidelines for assessing service stations (NSW EPA, 1994)
2 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
3 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 5b - VOCs, PCBs, OCPs - Area C

Sample Location				TP25C			TP26C		TP35C				TP36C		
Sample ID				TP25C	TP25C	QA71 (Intra Dupe for SP25C)	TP26C	TP26C	TP35C	QA69 (Intra Dupe for SP35C)	TP35CA	TP35C	TP36C	QA67 (Intra Dupe for SP36C)	TP36C
Depth (m bgs)				0-0.05	0.1-0.15	0.1-0.15	0-0.05	0.5-0.6	0-0.05	0-0.05	0-0.05	0.1-0.15	0-0.05	0-0.05	0.1-0.15
Date Sampled				9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]												
VOCs															
Benzene	0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,1,1-trichloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,1,2,2-tetrachloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,1,2-trichloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,1-dichloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,1-dichloroethene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,1-dichloropropene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2,3-trichloropropane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2-dibromo-3-chloropropane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2-dichloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2-dichloropropane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,3-dichloropropane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
2,2-dichloropropane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Bromodichloromethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Bromoform	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Carbon tetrachloride	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Chlorodibromomethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Chloroethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Chloroform	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Chloromethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
cis-1,2-dichloroethene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
cis-1,3-dichloropropene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Dibromomethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Trichloroethene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Tetrachloroethene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
trans-1,2-dichloroethene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
trans-1,3-dichloropropene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Vinyl chloride	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2,3-trichlorobenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
2-chlorotoluene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
4-chlorotoluene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Bromobenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Chlorobenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2-dibromoethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Bromomethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Dichlorodifluoromethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Trichlorofluoromethane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,2,4-trimethylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
1,3,5-trimethylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Isopropylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
n-butylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
n-propylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
p-isopropyltoluene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
sec-butylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Styrene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
tert-butylbenzene	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
Cyclohexane	1	-	-	<1	NA	NA	<1	NA	<1	<1	<1	NA	<1	NA	NA
PCBs															
Arochlor 1016	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
Arochlor 1221	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
Arochlor 1232	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
Arochlor 1242	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
Arochlor 1248	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
Arochlor 1254	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
Arochlor 1260	0.1	-	-	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA	NA
PCBs (Sum of total)		**20**	50	NC	NA	NA	NC	NA	NC	NC	NC	NA	NC	NA	NA
OCPs															
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4,4-DDE	0.3	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
a-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin + Dieldrin	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
b-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (cis)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (trans)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
d-BHC	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDD	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	0.2	**400**	1000	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
g-BHC (Lindane)	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	0.1	**20**	50	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 5c - SVOCs - Area C

Sample Location				TP25C			TP26C		TP35C				TP36C		
Sample ID				TP25C	TP25C	QA71 (Intra Dupe for SP25C)	TP26C	TP26C	TP35C	QA69 (Intra Dupe for SP35C)	TP35C	TP35CA	TP36C	QA67 (Intra Dupe for SP36C)	TP36C
Depth (m bgs)				0-0.05	0.1-0.15		0-0.05	0.5-0.6	0-0.05	0-0.05	0.1-0.15	0-0.05	0-0.05	0-0.05	0.1-0.15
Date Sampled				9/10/2012	9/10/2012		9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012	9/10/2012
Compound	**EQL**	**NEPM 1999 HIL E [1]**	NEPM 1999 HIL F [2]												
SVOCs															
N-nitrosodi-n-butylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosodi-n-propylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-naphthylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diphenylamine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methyl-5-nitroaniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aniline	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dinitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dinitrotoluene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobenzene	0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4,5-tetrachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,3,4,6-tetrachlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,6-trichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,6-dichlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachlorophenol	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4,4-DDE	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
a-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Aldrin + Dieldrin	1	**20**	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
b-BHC	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDD	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
DDT+DDE+DDD	1	**400**	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dieldrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan I	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan II	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endosulfan sulphate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Endrin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
g-BHC (Lindane)	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor	1	**20**	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Heptachlor epoxide	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl methanesulfonate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Safrole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-dimethylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylphenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-nitrophenol	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-methylcholanthrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetophenone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benz(a)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	1	**2**	5	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo(b)&(k)fluoranthene	1	-	-	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene	1	-	-	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Dibenz(a,h)anthracene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene	1	-	-	<1	<1	<1	<1	<1	4	2	<1	<1	<1	<1	<1
Fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene	1	-	-	<1	<1	<1	<1	<1	1	1	<1	<1	<1	<1	<1
Phenol	1	**17000**	42500	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pyrene	1	-	-	<1	<1	<1	<1	<1	3	2	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Butyl benzyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-octyl phthalate	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isophorone	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-(acetylamino) fluorene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-(dimethylamino) azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-bromophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Azobenzene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroethoxy) methane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-chloroisopropyl) ether	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbazole	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzofuran	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloropropene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methapyrilene	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosomorpholine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-nitrosopiperidine	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenacetin	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pentachloroethane	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

NOTES:
All concentrations are in mg/kg
1 - HIL E Column 4 - Health Based Investigation Levels for Parks, recreational open space and playing fields - (NEPC, 1999; NSW DEC 2006)
2 - HIL F Column 5 - Health Based Investigation Levels for Commercial/Industrial land use - (NEPC, 1999; NSW DEC 2006)
EQL - laboratory Estimated Quantitation Limit
IS = Insufficient sample for PID reading
"-" indicates that the criteria is not applicable for these analytes
< Value = Concentration less than laboratory EQL
NC - Non calculable
NA - Not Analysed
Intra Dup - Intra-laboratory duplicate sample
Inter Dup - Inter-laboratory duplicate sample

Table 6a - Well Gauging Data

Area	Well ID	Easting	Northing	Top of Casing (TOC) (m AHD)	Date Gauged	Gauged Well Depth (m BTOC)	Gauged SWL (m BTOC)	SWL (m AHD)
Superlot 1	BH3L1	301431.2	6259509.7	41.84	11/10/2012	10.96	2.40	39.44
	BH3L1B	301428.8	6259507.5	41.65	11/10/2012	6.04	2.10	39.55
	BH6 - Historic Well	301274.2	6259450.5	42.85	11/10/2012	6.75	1.96	40.90
	BH7L1	301292.4	6259471.7	43.07	9/10/2012	9.34	2.40	40.67
	BH30L1	301361.7	6259252.0	44.44	10/10/2012	10.75	2.60	41.84
Superlot 2	BH17L2	301195.5	6259654.6	45.13	9/10/2012	9.41	3.41	41.72
	BH20L2	301334.8	6259727.5	42.12	9/10/2012	10.86	1.93	40.19
Area X	BH3X	301617.6	6260142.7	37.92	10/10/2012	6.66	1.95	35.97
	BH20X	301633.8	6260043.8	38.03	10/10/2012	5.06	1.83	36.21
	BH22X	301541.6	6260004.8	38.35	10/10/2012	5.73	1.40	36.94
Area Y	BH2Y	301632.3	6259804.7	38.67	10/10/2012	6.30	1.17	37.50
	BH17Y	301513.2	6259331.4	41.67	10/10/2012	8.54	1.95	39.72

NOTES:
m AHD = metres Australian Height Datum
m BTOC = metres Below Top of Casing
SWL = Standing Water Level/Static Water Level
LNAPL = Light Non Aqueous Phase Liquid
NC = Not Calculable

Table 5d - Asbestos - Area C

Sample ID			TP25C	TP35C	QA69	TP36C	TP26C
Sample Type			SLB	SLB	SLB	SLB	SLB
Laboratory Reference			80192-15	80192-5	80192-33	80192-1	80192-10
Depth (m bgs)			0.0-0.05	0.0-0.05		0.0-0.05	0.0-0.05
Date Sampled			9/10/12	9/10/12		9/10/12	9/10/12
Components	WA Guidelines for ACM Comm/Ind	WA Guidelines for AF/FA					
Sample Description			Grey fine-grained soil, rocks & debris	Brown fine-grained soil, rocks & debris	Brown fine-grained soil, rocks & debris	Brown fine-grained soil, rocks & debris	Brown fine-grained soil, rocks & debris
a) Chrysotile Asbestos	NA	NA	-	-	-	-	-
b) Amosite Asbestos	NA	NA	-	-	-	-	-
c) Crocidolite Asbestos	NA	NA	-	-	-	-	-
d) Sample mass (g)	NA	NA	532.71	530.81	358.96	516.87	442.42
e) Fragment Dimentions (mm)	NA	NA	-	-	-	-	-
f) Fibres (g)	NA	NA	-	-	-	-	-
g) ACM (g)	NA	NA	-	-	-	-	-
h) Fibres by weight of ACM (g)	NA	NA	-	-	-	-	-
i) AF w/w Analysis (%)	NA	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
j) ACM w/w Analysis (%)	0.05%	NA					

Notes:
a) Chrysotile in ACM fragments (g)
b) Amosite in ACM fragments (g)
c) Crocidolite in ACM fragments (g)
d) Total mass of soil sample (g)
e) Laboratory reported dimentions of ACM fragments
f) Total free asbestos AF and FA (g)
g) Laboratory reported mass of ACM
h) Laboratory calculated fibres by weight of ACM (g)
i) Weight/Weight fibres in soil sample/sub-sample (%)
j) Weight/Weight ACM in soil sample/sub-sample (%)
NR = Not reported
NA = No criteria exist
SP = Stockpile
SS = Sub-sample
SLB = Snap Lock Bag
-' = not identified
NC = Non calculable

Table 6b - Field Water Quality Parameters

Area	Sample ID	Date Sampled	Volume Purged (L)	Dissolved Oxygen (ppm)	Conductivity (µS/cm)	pH	Redox (mV)	Temp (Degrees Celcius)	Observations
Superlot 1	BH3L1	11/10/2012	5	0.35	23529	6.78	-1.1	17.1	Cloudy, dark grey silt, no sheen, no odour
			10	0.65	23945	6.74	-16.9	17.5	Silt on dipper, less cloudy after 7L, no sheen, no odour
			15	0.64	23968	6.73	-19.1	17.6	As above
			20	0.72	23966	6.72	-23.6	17.6	As above
			25	**0.85**	**23981**	**6.73**	**-19.1**	**17.7**	As above
			After Sample	0.83	23884	6.72	-23.1	17.5	
	BH3L1B	11/10/2012	5	4.89	23594	6.83	124.1	15.4	Dipper set at 3.5m, slightly turbid, no sheen, no odour
			10	2.15	23638	6.49	130.5	15.5	after 1L water becoming less turbid
			14	**3.8**	**23629**	**6.48**	**130.7**	**15.6**	Dry after 14L - Returned later to sample
			After Sample	4.1	23495	6.54	91.9	15.8	
	BH6 - Historic Well	11/10/2012	5	4.29	11211	6.67	106.7	15.7	Dipper set at 4m, no odour, no sheen, cloudy
			10	2.12	14580	6.47	107.8	15.9	Dipper set at 4.5m, lighter brown no odour, no sheen, cloudy
			15	1.67	16048	6.39	91.7	15.9	Becoming less cloudy, continues to become lighter brown, cloudy,
			20	1.59	17216	6.35	78.8	15.9	no odour, no sheen
			25	**1.42**	**17950**	**6.34**	**66.3**	**15.9**	Becomes cloudy, no odour, no sheen
			After Sample	1.4	18202	6.31	73.3	15.8	
	BH7L1	9/10/2012	5	0.43	26602	6.85	155	17.7	Turbid, brown, no odour, no sheen
			10	0.28	26257	6.67	126.6	17.1	As above
			15	0.81	26598	6.64	-90.3	17.2	As above
			20	0.54	26515	6.62	-76.1	17.1	As above
			25	**0.87**	**26439**	**6.64**	**-58.8**	**17.1**	As above
			After Sample	1.4	18202	6.31	73.3	17	Clear after filtering and sulphur odour
	BH30L1	10/10/2012	5	0.28	25449	6.89	6.7	18.5	Dipper set at 3.5m, slight sulphur odour, no sheen, very cloudy for
			9	0.58	25260	6.84	-5.2	18.3	first 2L, dark colour
			13	0.72	25284	6.81	-6.6	18.3	From 2L-8L quite cloudy but becoming clear after 8L, sulphur
			17	**0.93**	**25354**	**6.81**	**-5.9**	**18.4**	odour no longer noted
			After Sample	0.88	25302	6.8	-7.3	18.4	
Superlot 2	BH17L2	9/10/2012	5	0.29	27933	6.54	82.4	17.9	Cloudy, no sheen, no odour
			10	0.56	28152	6.54	86.4	18	Milky, no sheen, no odour
			15	**0.98**	**28256**	**6.57**	**82.8**	**18.4**	Turbid, no sheen, no odour, dry after 16L
			After Sample	1.91	27837	6.52	94.8	17.8	
	BH20L2	9/10/2012	4	0.23	31003	6.69	32.5	17.5	Milky, no odour, no sheen, clearing up
			9	0.36	26752	6.7	25	17.6	As above but slightly less milky
			14	0.24	26511	6.71	23.7	17.3	As above
			19	**0.83**	**26489**	**6.69**	**16.1**	**17.4**	As above
			After Sample	0.49	26922	6.72	19.8	17.9	As above
Area X	BH3X	10/10/2012	5	0.28	25872	6.11	109.5	15.3	Dipper set at 3m initially, turbid for first 0.5L, no sheen, no odour
			10	0.98	25339	6.02	103.4	14.8	observed, draw down to 5m, slightly turbid from there after
			15	**1.24**	**25681**	**6.01**	**101.6**	**14.8**	
			After Sample	1.72	26469	5.95	100.5	15.2	
	BH20X	10/10/2012	5	1.29	31074	6.62	111.7	15.6	Dipper set at 3m, no odour, no sheen, turbid, brown, less turbid
			9	**1.24**	**31778**	**6.54**	**104.5**	**15.9**	after 3L, dry at 4L - Returning later to sample
			After Sample	3.28	31816	6.69	113.4	15.8	
	BH22X	10/10/2012	5	0.32	30201	6.58	95	15.7	Dipper set at 2.5m initially, slightly turbid at the start, becoming
			10	0.58	30139	6.46	87.5	15.7	clear after first 10L, no odour, no sheen
			15	0.81	30036	6.36	82.1	15.5	
			20	**0.99**	**29983**	**6.32**	**79**	**15.4**	
			After Sample	1.39	29920	6.31	75.6	15.4	
Area Y	BH2Y	10/10/2012	5	0.47	30236	6.35	92.4	16	Turbid, no sheen, no odour, very turbid for first 2L then becoming less until 10L
			10	0.77	29854	6.31	86.2	15.6	Predominately clear, slight turbidity, no odour, no sheen
			15	**1.05**	**29817**	**6.3**	**86.2**	**15.6**	clear, no odour
			After Sample	0.99	29976	6.28	81.6	15.7	Some silt observed in filter paper
	BH17Y	10/10/2012	5	0.58	23676	6.55	81.7	16.1	Dipper set at 4.5m, no odour, no sheen, slightly cloudy
			10	0.94	23795	6.52	82.7	16.1	Dipper set at 5m, no odour, no sheen, cloudy
			15	**1.2**	**23933**	**6.51**	**76.4**	**16.2**	First litre turbid then becoming clear
			After Sample	1.26	23846	6.51	73.7	16.2	

NOTES:
L = Litre
mg/L = milligrams per litre
µS/cm = microSiemens per centimetre
pH = potential hydrogen
mV = milli volts
Field parameter measurements were taken during purging. **Final measurements prior to sampling are in bold.**

Table 6c - Heavy Metals, TPHs, BTEX - Groundwater

Sample ID					BH17L2	BH17Y	BH20L2	BH20X	BH22X	BH2Y	BH30L1	QA73 (Intra-dupe BH30L1)	BH3L1B	BH3L1	QA76 (Intra-dupe BH3L1)	BH3X	BH6	BH7L1
Date Sampled					9/10/2012	11/10/2012	9/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012		11/10/2012	11/10/2012	11/10/2012	10/10/2012	11/10/2012	9/10/2012
Compounds	**Units**	**EQL**	**ANZECC 2000 FW 95% [1]**	**ANZECC 2000 MW 95% [2]**														
Heavy Metals																		
Arsenic (Filtered)	mg/L	0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (Filtered)	mg/L	0.0001	**0.0002**	**0.0055**	**0.0002**	**0.0004**	0.0001	**0.001**	**0.0002**	**0.0002**	0.0001	<0.0001	**0.0003**	0.0001	0.0001	**0.0005**	**0.0003**	<0.0001
Chromium (III+VI) (Filtered)	mg/L	0.001	-	-	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (Filtered)	mg/L	0.001	**0.0014**	**0.0013**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese (Filtered)	mg/L	0.005	**1.9**	-	**2.1**	**2**	0.9	**19**	**4.5**	1	0.67	0.64	1.8	0.44	0.42	**8.5**	**4**	**3.1**
Lead (Filtered)	mg/L	0.001	**0.0034**	**0.0044**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Mercury (Filtered)	mg/L	0.00005	**0.0006**	**0.0004**	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Nickel (Filtered)	mg/L	0.001	**0.011**	**0.07**	0.006	0.008	0.001	**0.02**	0.007	0.005	0.002	0.002	0.009	<0.001	<0.001	0.008	0.009	0.003
Zinc (Filtered)	mg/L	0.001	**0.008**	**0.015**	**0.81**	**0.99**	**0.29**	**0.5**	**0.58**	**0.67**	**0.53**	**0.5**	**0.61**	**0.2**	**0.26**	**0.24**	**0.39**	**0.026**
TPH																		
C6 - C9	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C10 - C14	µg/L	50	-	-	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28	µg/L	100	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36	µg/L	100	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
+C10 - C36 (Sum of total)	µg/L		-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
BTEX																		
Benzene	µg/L	1	**950**	**700**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (m & p)	µg/L	2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	µg/L	1	**350**	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Xylenes	µg/L	1	-	-	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

NOTES:
All concentrations are as described in table above
1 - ANZECC & ARMCANZ (2000) 95% level of protection for freshwater Aquatic ecosystems
2 - ANZECC & ARMCANZ (2000) 95% level of protection for marine Aquatic ecosystems
EQL - Laboratory Estimated Quantitation Limit
< Value = Concentration less than laboratory EQL
465 Concentration is in exceedance of the adopted criteria
NC - Non Calculable
NA indicates that the sample was not analysed for these analytes

Table 6d - VOCs - Groundwater

Sample ID					BH17L2	BH17Y	BH20L2	BH20X	BH22X	BH2Y	BH30L1	QA73 (Intra-dupe BH30L1)	BH3L1B	BH3L1	QA76 (Intra-dupe BH3L1)	BH3X	BH6	BH7L1
Date Sampled					9/10/2012	11/10/2012	9/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012		11/10/2012	11/10/2012	11/10/2012	10/10/2012	11/10/2012	9/10/2012
Compounds	**Units**	**EQL**	**ANZECC 2000 FW 95% [1]**	**ANZECC 2000 MW 95% [2]**														
VOCs																		
Benzene	µg/L	1	950	**700**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (m & p)	µg/L	2	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene (o)	µg/L	1	350	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	1	6500	**1900**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichloropropane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorodibromomethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,3-trichlorobenzene	µg/L	1	10	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	1	170	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	1	160	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	1	260	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	1	60	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromobenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dichlorodifluoromethane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,4-trimethylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-trimethylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-butylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-propylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p-isopropyltoluene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-butylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-butylbenzene	µg/L	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	mg/L	0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

NOTES:
All concentrations are as described in table above
1 - ANZECC & ARMCANZ (2000) 95% level of protection for freshwater Aquatic ecosystems
2 - ANZECC & ARMCANZ (2000) 95% level of protection for marine Aquatic ecosystems
EQL - Laboratory Estimated Quantitation Limit
< Value = Concentration less than laboratory EQL
465 Concentration is in exceedance of the adopted criteria
NC - Non Calculable
NA indicates that the sample was not analysed for these analytes

Table 6e - SVOCs - Groundwater

Sample ID					BH17L2	BH17Y	BH20L2	BH20X	BH22X	BH2Y	BH30L1	QA73 (Intra-dupe BH30L1)	BH3L1B	BH3L1	QA76 (Intra-dupe BH3L1)	BH3X	BH6	BH7L1
Date Sampled					9/10/2012	11/10/2012	9/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012		11/10/2012	11/10/2012	11/10/2012	10/10/2012	11/10/2012	9/10/2012
Compounds	**Units**	**EQL**	**ANZECC 2000 FW 95%** [1]	**ANZECC 2000 MW 95%** [2]														
SVOCs																		
N-nitrosodi-n-butylamine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-nitrosodi-n-propylamine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1-naphthylamine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-naphthylamine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Diphenylamine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-nitroaniline	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
3-nitroaniline	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-chloroaniline	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-nitroaniline	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-methyl-5-nitroaniline	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aniline	µg/L	10	250	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachloroethane	µg/L	10	360	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dinitrobenzene	mg/L	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,6-dinitrotoluene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nitrobenzene	µg/L	10	550	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,4,5-tetrachlorobenzene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,4-trichlorobenzene	µg/L	10	170	80	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-dichlorobenzene	µg/L	10	160	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,3-dichlorobenzene	µg/L	10	260	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-dichlorobenzene	µg/L	10	60	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorobenzene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,3,4,6-tetrachlorophenol	µg/L	10	20	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4,5-trichlorophenol	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-trichlorophenol	µg/L	10	20	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-dichlorophenol	µg/L	10	160	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,6-dichlorophenol	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-chlorophenol	µg/L	10	490	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	µg/L	100	10	22	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**	**<100**
Dinoseb	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloronitrobenzene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4,4-DDE	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
a-BHC	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aldrin	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
b-BHC	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlordane (cis)	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlordane (trans)	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
d-BHC	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
DDD	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
DDT	µg/L	10	0.01	-	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**
Dieldrin	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endosulfan I	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endosulfan II	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endosulfan sulphate	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Endrin	µg/L	10	0.02	0.008	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**
Endrin aldehyde	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
g-BHC (Lindane)	µg/L	10	0.2	-	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**
Heptachlor	µg/L	10	0.09	-	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**	**<10**
Heptachlor epoxide	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethyl methanesulfonate	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Isosafrole (trans)	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Safrole	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
7,12-dimethylbenz(a)anthracen	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-dimethylphenol	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-dinitrophenol	mg/L	0.1	0.045	-	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
2-chloronaphthalene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-methylnaphthalene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-methylphenol	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-nitrophenol	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
3-methylcholanthrene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4,6-Dinitro-2-methylphenol	µg/L	100	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
4-methylphenol	mg/L	0.02	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4-nitrophenol	µg/L	100	-	-	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Acenaphthene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetophenone	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benz(a)anthracene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a) pyrene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(b)fluoranthene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(g,h,i)perylene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k)fluoranthene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chrysene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenz(a,h)anthracene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Indeno(1,2,3-c,d)pyrene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	µg/L	10	16	70	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenol	µg/L	10	320	400	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-ethylhexyl) phthalate	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Butyl benzyl phthalate	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Diethylphthalate	µg/L	10	1000	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dimethyl phthalate	µg/L	10	3700	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Di-n-butyl phthalate	µg/L	10	26	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Di-n-octyl phthalate	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Isophorone	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-(acetylamino) fluorene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-(dimethylamino) azobenzene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-bromophenyl phenyl ether	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-chlorophenyl phenyl ether	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Azobenzene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzyl alcohol	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-chloroethoxy) methane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-chloroethyl)ether	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-chloroisopropyl) ether	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbazole	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzofuran	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachloropropene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methapyrilene	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-nitrosomorpholine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-nitrosopiperidine	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenacetin	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachloroethane	µg/L	10	-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

NOTES:
All concentrations are as described in table above
1 - ANZECC & ARMCANZ (2000) 95% level of protection for freshwater Aquatic ecosystems
2 - ANZECC & ARMCANZ (2000) 95% level of protection for marine Aquatic ecosystems
EQL - Laboratory Estimated Quantitation Limit
< Value = Concentration less than laboratory EQL
465 Concentration is in exceedance of the adopted criteria
NC - Non Calculable
NA indicates that the sample was not analysed for these analytes

Table 5.1: Test pitting Summary

REMEDIATION ZONE	TEST PITS COMPLETED	TEST PITS CONTAINING ASBESTOS	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
A	12	5	ACM contamination was found in five test pit locations including friable material found in two test pit locations. Recommended to excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance, supplemented by laboratory analysis in the vicinity of the friable material.	Appendix C, Test Pitting Report – Area A
B	0	0	Test pitting program abandoned due to the significant surface visible impacts across the zone. Concluded excavation across zone would be needed until no further ACM visible on walls or floors	Appendix E, Entry for 4/5/2017
D,N,R	51	8	ACM contamination was present in in hot spots. There are also areas within Area R that have been used as landfills for general rubbish (car bodies, metal, tin sheeting, gates, glass, roof tiles, concrete, material and bricks). Recommended excavation of identified hotpots until no further ACM visible, followed by clearance.	Appendix C, Test Pitting Report – Areas D, N and R Appendix E, Entry for 27/3/2017
E	30	0	No visible ACM contamination was found during test-pitting within Area E. However, some ACM was observed on the surface during final inspection. As some ACM was observed on the surface during final inspection, it was recommended that excavation be carried out to a depth of 100mm across Area E.	Appendix C, Test Pitting Report – Area E
F	7	0	No visible ACM contamination was found within Area F. Little to no fill material present across the Site. No excavation required in this area. Test-pitting results considered sufficient validation of the area, no asbestos clearance certificate required.	Appendix C, Test Pitting Report – Area F
G	21	10	ACM contamination wide spread through Area G from surface to 500 mm below ground surface. Depth of fill is deeper in this area as Area G is within Stockpile 1. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area G

7 VALIDATION PROGRAM AND FINDINGS

7.1 VALIDATION OF IDENTIFIED REMEDIATION ZONES

In accordance with the RAP (Coffey, 2015), the validation process within each remediation area depended on the following:

- Whether the asbestos identified was bonded or friable;
- If the excavation was terminated within fill material or natural; and
- Condition of the ACM.

The validation process within zones containing bonded or friable asbestos is described below.

The footprint of stockpiles of excavated asbestos impacted material identified outside excavated areas were validated using the same approach as described for excavations of bonded asbestos impact areas. The locations of these stockpiles are shown on Figure 6, **Appendix A**.

7.1.1 VISUAL CLEARANCES

Following removal of asbestos impacted material a visual inspection of the walls and base of the excavation was undertaken. Where no visible asbestos was identified Clearance Certificates were issued for the excavation footprints within the Remediation zones as shown in the Survey plans (Figures 5 to 10 in **Appendix A**).

The Clearance certificates relate to visible condition of the surface of the inspected area, at the time of the inspection. It is noted that the majority of remediation areas were terminated in fill material, as such there is a potential for asbestos to remain in the fill material at depth.

Table 7.1 presents a summary of the clearances for each Remediation zone. Clearance documentation is attached in **Appendix D**.

Table 7.1: Asbestos Clearances

REMEDIATION AREA	DATE	FRIABLE OR BONDED ZONE	EXCAVATION DEPTH DESCRIPTION	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
A	19/6/2017	Friable and Bonded	Generally extended to natural. Validation samples collected where excavation terminated in fill.	Clear of visual asbestos. Analytical results below adopted criteria.	Appendix D, Clearance Certificate – Area A
B	23/5/2017	Bonded	Majority of excavation extended to approximately 0.2m below ground surface.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area B
D,N,R	21/4/2017	Bonded	Extended to a variety of depths from surface scrape to natural following chase out of asbestos containing waste.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Areas D, N and R

REMEDIATION AREA	DATE	FRIABLE OR BONDED ZONE	EXCAVATION DEPTH DESCRIPTION	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
E	8/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural following chase out of asbestos pipes.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area E
F	8/5/2017	Bonded	No excavation.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area F
G	29/5/2017	Bonded	Generally extended to natural.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area G
H	23/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural following chase out of asbestos pipes and buried fragments. Majority of excavation extended to natural.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area H
I	23/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural following chase out of asbestos waste within wells. Majority of excavation extended to natural.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area I
J	23/5/2017	Bonded	Majority of excavation extended to approximately 0.2m below ground surface.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area J
K	19/6/2017	Friable	Majority of excavation extended to approximately 0.2m below ground surface. Validation samples collected where excavation terminated in fill.	Clear of visual asbestos. Analytical results below adopted criteria.	Appendix D, Clearance Certificate – Area K
L	19/6/2017	Bonded	Extended to a variety of depths from surface scrape to approximately 6 m to facilitate chase out of buried waste.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area L
M	8/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area M
P,O,C	24/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural to facilitate chase out of pipes	Clear of visual asbestos.	Appendix D, Clearance Certificate – Areas P, O and C
Q	30/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural to facilitate chase out of buried waste. Majority of excavation extend to approximately 0.2 m below ground surface	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area Q

REMEDIATION AREA	DATE	FRIABLE OR BONDED ZONE	EXCAVATION DEPTH DESCRIPTION	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
S	31/3/2017	Bonded	No excavation.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area S
T	8/5/2017	Bonded	Majority of excavation extended to approximately 0.2m below ground surface.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area T
U	5/5/2017	Bonded	Majority of excavation extended to approximately 0.2m below ground surface.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area U
W	19/6/2017	Friable	Generally extended to natural. Validation samples collected where excavation terminated in fill.	Clear of visual asbestos. Analytical results below adopted criteria.	Appendix D, Clearance Certificate – Area W
X	19/6/2017	Friable and Bonded	Generally extended to natural. Validation samples collected where excavation terminated in fill.	Clear of visual asbestos. Analytical results below adopted criteria.	Appendix D, Clearance Certificate – Area X
Y	25/5/2017	Bonded	Extended to a variety of depths from surface scrape to natural.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Area Y
Haul Road	21/6/2017	Bonded	No excavation.	Clear of visual asbestos.	Appendix D, Clearance Certificate – Haul Road

7.1.2 SUPPLEMENTARY LABORATORY ANALYSIS OF FRIABLE ZONES

The collection of validation samples was undertaken within areas where friable asbestos was identified. Validation sampling was carried out in general accordance with the RAP and comprised the following:

- Sampling every 5m along the excavation walls (assuming the depth of the excavation is <1m deep);
- Visually checking the base of the excavation to confirm absence of ACM;
- Collection one sample per 25m^2 of the base, with a minimum of 1 sample, number rounded up, if the excavation terminated in fill soil. If the excavation terminated on natural soils, a photographic record was made and no soil validation sampling was undertaken;
- One wetted 500ml sub sample was collected for laboratory analysis for asbestos identification (AS4964-2004);
- Where asbestos was detected in any sample, the concentration of asbestos as fragments (ACM) and as loose fibres (FA or AF) was compared with the validation assessment criteria;
- Where asbestos identified within the sample exceeded the adopted criteria further excavation and revalidation was undertaken; and
- Where the soil at the base of the excavation was observed to be in an undisturbed natural condition, a photographic record of the excavated surface was taken as evidence of validation.

Table 7.2 presents a summary of the validation samples collected for each Remediation zone where friable asbestos was observed. Tabulated results are presented in **Appendix D** clearance certificates and laboratory transcripts are provided in **Appendix H**.

Table 7.2: Summary of Validation Results

REMEDIATION AREA	DATE	NO. OF SAMPLES COLLECTED	SAMPLES EXCEEDING CRITERIA	GENERAL FINDINGS / CONCLUSIONS
A	2.6.2017	2 floor samples 21 wall samples	None	Samples collected from the north western excavation floor, as well as the northern, western and north eastern walls were analysed. All results pass – No further excavation necessary. It is noted that Area A joins Area A south, as such no southern wall samples were collected.
A south	19.6.2017	18 wall 2 floor	none	Samples collected from the southern excavation floor, south eastern, southern and western walls were analysed. All results pass – No further excavation necessary. It is noted that Area A south joins Area A to the north and Area X to the west, as such no northern wall samples were collected and limited western wall samples were collected.
K	15.5.2017	1 floor samples 5 wall samples	None	Samples collected from the excavation floor and all excavation walls were analysed. All results pass – No further excavation necessary
W	15.5.2017	10 Floor 51 wall	2 floor 3 wall	A total of five excavations are present in Area W (W, Wa, Wb, Wc and Wd). Samples collected from all excavation floors and all excavation walls were analysed. Asbestos exceeding the adopted criteria was detected in validation samples V_W_F1, V_W_W4, V_W_F12, V_W_F20 and V_Wc_F1. The excavations were therefore extended and these validation locations resampled.
	30.5.2017	2 floor 3 wall	None	All results pass – No further excavation necessary
X	23.5.2017	3 floor 11 wall	3 floor 7 wall	Samples collected from the excavation floor, northern and western walls were analysed. Asbestos exceeding or equal to the adopted criteria was detected in the majority of validation samples. The excavation was therefore extended.
X.1	16.6.2017	1 floor 20 wall		Samples collected from the excavation floor, northern, southern and western walls were analysed. All results pass – No further excavation necessary. It is noted that the eastern portion of Area X joins Area A south, as such no eastern wall samples were collected.

7.2 VALIDATION OF CAPPING MATERIALS

Material excavated from the containment cells (at depth) was stockpiled in the northern portion of the Site, to the east of the cell. This material was inspected by WSP on 16 June 2017 and observed to consist of natural red brown and grey mottled clay. Three samples of stockpiled material were collected on 16 June 2017 and submitted to ALS laboratory for asbestos, TRH, BTEXN, PAH, OC, PCB and heavy metals analysis. Analytical results were non-detect for contaminants analysed in all samples with the exception of minor metals concentrations, well below thresholds for commercial/industrial use, and consistent with natural background levels.

REMEDIATION ZONE	TEST PITS COMPLETED	TEST PITS CONTAINING ASBESTOS	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
H	95	33	ACM contamination wide spread through Area H from surface to 400 mm below ground surface (BGS). Central portions of Area H, are the most contaminated. Heavy surface impacts along the historical footings. Significant ash material within the fill material, this ash contained ACM fragments. Several hotspots were identified in the southern portion of the Area. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area H
I	0	0	Remedial works pre-dated the test pitting program. Material bulked out to the depth of visible asbestos.	Appendix E, Entries for 14-17/5/2017
J	9	7	ACM contamination was present across the majority of the Site both at surface and in fill material. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area J
K	10	0	No visible ACM contamination was found within Area K. Little to no fill material present across the Site. Friable asbestos previously identified. Excavate area where friable asbestos was previously identified and conduct validation sampling and clearance.	Appendix C, Test Pitting Report – Area K
L	-	-	Area L was waterlogged during the remedial program and due to the wet nature of the soil and inaccessibility of the area the typical test pitting program described above was unable to be completed. In order to assess and remediate Area L trenches were excavated from the area and placed on geofabric to dry. Once dried, the material was inspected with the aid of a shovel and presence or absence of asbestos fragments noted. Asbestos fragments were observed in soil originating from the northern portion of the area, and as such the northern portion of the area was bulked out until fragments were no longer visible. This alternative protocol was agreed with the Auditor on 23 May 2017.	
M	0	0	Remedial works pre-dated the test pitting program. Material bulked out to the depth of visible asbestos.	Appendix E, Entries for 17-20/5/2017

REMEDIATION ZONE	TEST PITS COMPLETED	TEST PITS CONTAINING ASBESTOS	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
P,O,C	36	2	ACM contamination present through Area P, O and C from surface to 500 mm below ground surface (BGS). Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Areas P,O and C
Q	80	37	ACM contamination wide spread through Area Q from surface to 800 mm below ground surface (BGS). Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area Q
S	16	0	No visible ACM within Area S. Little to no fill within this area. Significant fly tipping immediately adjacent to the surveyed area. Confirm coordinates with WSPT as all visible ACM is immediately adjacent to current surveyed area, likely that coordinates are incorrect. Recommend excavation and chase of the fly tipping. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance of the footprints.	Appendix C, Test Pitting Report – Area S
T	15	1	ACM contamination was present in one location in fill material. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area T
U	15	1	ACM contamination was present in one location in fill material. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area U
W	34	19	ACM contamination was present across a significant percentage of the Site both at surface and in fill material. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area W

REMEDIATION ZONE	TEST PITS COMPLETED	TEST PITS CONTAINING ASBESTOS	GENERAL FINDINGS / CONCLUSIONS	CROSS REFERENCE
X	16	11	ACM contamination wide spread through Area X from surface to 550 mm below ground surface (BGS). Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance. Note: during the remediation of this zone friable material was encountered (similar to that found in Area A) the zone was therefore subjected to validation sampling as well as visual clearance.	Appendix C, Test Pitting Report – Area X Appendix E, Entry for 11 April 2017
Y	6	1	ACM contamination was present in one location in fill material. Excavate impacted locations and surrounds in accordance with agreed protocol. Excavations should be extended laterally and vertically until all visible asbestos removed. Once excavation is complete provide asbestos clearance.	Appendix C, Test Pitting Report – Area Y

5.3 EXCAVATION OF CONFIRMED ASBESTOS IMPACTS

Where asbestos impacted material was identified within test pits, a marker stake was placed and 5 m lateral buffer was measured. The impacted test pit locations were then excavated out to the buffer as an initial excavation zone. Excavations were then extended laterally and vertically until all visible asbestos was removed. A visual clearance of walls and floors was conducted, supplemented by grid based laboratory analysis of friable areas as prescribed in the RAP (Coffey, 2015). Minor occurrences of asbestos (e.g. a few ACM fragments over an excavation) were removed via emu picking, however if the assessor was concerned that too many fragments remained, a request was made to the client for additional scraping to occur unit no further ACM was visible.

A qualified environmental scientist, and/or a licenced asbestos assessor was present on site throughout the works to guide the excavation. All friable zones were excavated under the direction of a licenced asbestos assessor who then conducted the clearance.

Excavation footprints are shown on surveys in **Appendix** B and Figure 4, **Appendix A**.

5.4 PLACEMENT OF SPOIL IN THE CONTAINMENT CELLS

Two onsite Cells were excavated at the Site to facilitate encapsulation of excavated asbestos containing soil. These are presented on Figure 5, Appendix A.

Surface material (potentially impacted topsoil material) excavated from the surface of the planned containment Cell 1 was stockpiled on the western portion of Area I. Prior bulk excavation of Cell 1 a partial clearance certificate for the eastern portion of Area I (which extended beneath the planned Cell 1) was provided (See VENM report Appendix J).

The stockpiled material noted above was transferred to Cell 1 upon completion of excavation. The temporary stockpile footprint (western portion of Area I) was also transferred to Cell 1 and was then cleared (Area I clearance). Cell 2 was then constructed into the cleared Area I.

Excavation began on the first Cell (Cell 1) on 1 February 2017 and was completed on 15 February 2017. The cell was extended by EPS between 5 May2017 and 8 May 2017 to increase its capacity. Survey data indicates the final volume available for impacted soil following further excavation was 10,230m^3 (Total Surveying Solutions, Plan No. 1010).

Appendix F Regulatory Search Results

Search for NSW heritage

Return to search page where you can refine/broaden your search. ItemName 0

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into two sections.

- **Section 1**. contains items listed by the **heritage council** under the NSW Heritage Act. This includes listing on the state heritage register, an interim heritage order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Branch.
- **Section 2**. contains items listed by **local councils & shires and state government agencies**. This section may also contain additional information on some of the items listed in the first section.

Section 1. Items listed under the NSW Heritage Act.

Your search returned 3 records.

Item name	Address	Suburb	LGA	Listed under Heritage Act
Government Depot Site (former)	Dunsmore Street	Rooty Hill	Blacktown	Yes
Imperial Hotel	Rooty Hill Road	Rooty Hill	Blacktown	Yes
Rooty Hill, The	Eastern Road	Rooty Hill	Blacktown	Yes

ItemName 0

Section 2. Items listed by Local Government and State Agencies.

Your search returned 13 records.

Item name	Address	Suburb	LGA	Information source
Belvedere	116 Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
Fairholme	24 Evans Road	Rooty Hill	Blacktown	LGOV
Government Depot (Ruins)	Dunsmore Street	Rooty Hill	Blacktown	SGOV
House	24 Mary Street	Rooty Hill	Blacktown	LGOV
House	20 Perkins Street	Rooty Hill	Blacktown	LGOV
House	193 Rooty Hill Road North	Rooty Hill	Blacktown	LGOV
House	45 Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
Imperial Hotel	1 Rooty Hill Road North	Rooty Hill	Blacktown	LGOV
Pioneer Memorial Church	Rooty Hill Road South	Rooty Hill	Blacktown	LGOV

Rooty Hill Railway Station Group	North Parade	Rooty Hill	Blacktown	SGOV
Ruins of the Government Depot	Dunsmore Street	Rooty Hill	Blacktown	LGOV
School of Arts	32 Rooty Hill Road South	Rooty Hill	Blacktown	LGOV
Watts Cottage	2 Watt Street	Rooty Hill	Blacktown	LGOV

There was a total of 16 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
Note: The Heritage Branch seeks to keep the State Heritage Inventory (SHI) up to date, however the latest listings in Local and Regional Evironmental Plans (LEPs and REPs) may not yet be included. Always check with the relevant local council or shire for the most recent listings.

Search Results

1 result found.

The Rooty Hill Rooty Hill Rd South		Rooty Hill, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Report Produced: Tue Mar 12 15:03:52 2013

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Appendix G Environmental Management Plan (WSP 2017g)

ENVIROPACIFIC SERVICES PTY LTD

WESTERN SYDNEY PARKLANDS TRUST EASTERN CREEK BUSINESS HUB SITE ENVIRONMENTAL MANAGEMENT PLAN

BEGGS ROAD, ROOTY HILL, NSW

AUGUST 2017

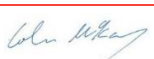
WESTERN SYDNEY PARKLANDS TRUST
EASTERN CREEK BUSINESS HUB SITE
ENVIRONMENTAL MANAGEMENT PLAN
BEGGS ROAD, ROOTY HILL, NSW

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REV	DATE	DETAILS
A	28/06/2017	Draft
B	4/7/2017	Revised Draft for Client Comments
C	7/7/2017	Revised Draft for Client Comments
D	10/7/2017	Version for Auditor Review
E	28/07/2017	Further Client Comments
F	31/7/2017	Further Auditor Comments
G	7/8/2017	Final

	NAME	DATE	SIGNATURE
Prepared by:	Melinda Collier	7/8/2017	
Reviewed by:	Colin McKay	7/8/2017	
Approved by:	Colin McKay	7/8/2017	

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AUGUST 2017

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APPENDIX C - LONG TERM EMP FOR CONTAINMENT CELLS

ABREVIATIONS AND TERMS

ACM	Asbestos containing material
ANZECC	Australian & New Zealand Environment & Conservation Council
Bonded	(Asbestos) also known as 'non-friable' asbestos meaning material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound
BTEX compounds	Benzene, toluene, ethylbenzene and xylene
DEC	NSW Department of Environment and Conservation (now EPA)
DECC	NSW Department of Environment and Climate Change (Formerly DEC, now EPA)
DECCW	NSW Department of Environment, Climate Change and Water (formerly DEC & DECC, now EPA)
DP	Deposited plan
DQO	Data quality objective
EPA	Environment Protection Authority
ESA	Environmental site assessment
Friable	(Asbestos) meaning material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos.
HESP	Health, environment and safety plan
mAHD	Metres Australian Height Datum
mBGL	Metres below ground level
mg/kg	Milligram per kilogram (or part per million)
NATA	National Association of Testing Authorities
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
NHMRC	National Health and Medical Research Council
PAHs	Polycyclic aromatic hydrocarbon
PID	Photoionisation detector
PQL	Practical quantitation limit (of chemical concentration)
QA/QC	Quality assurance/quality control
RAP	Remedial action plan
RPD	Relative per cent difference
TRH	Total recoverable hydrocarbons
Unexpected Find	Contamination that may be encountered. It includes asbestos potentially present outside of remediated zones (being the dominant contaminate found onsite to date) but could also include other chemicals or waste.

EXECUTIVE SUMMARY

WSP Australia Pty Ltd (WSP), was engaged by Enviropacific Services Pty Ltd (Enviropacific) to provide environmental consulting services for the validation of remediation zones previously identified on the Western Sydney Parklands Trust, Eastern Creek Business Hub lands. The Eastern Creek Business Hub property is to be developed into Commercial/Industrial uses. The site is located between the M7 Motorway, Great Western Highway and Church Street in Rooty Hill and location is shown on Figure 1 in Appendix A.

Previous investigations identified asbestos contamination in multiple areas of the site, these zones were understood to be areas previously occupied by structures or uncontrolled fill stockpiles. The remedial action plan (RAP), prepared by Coffey Environment Australia Pty Ltd (Coffey), identified areas with a 'high likelihood' of asbestos impact that were to be remediated through excavation to remove ACM and asbestos impacted soil prior to the bulk earth works of phase 1.

Remediation works on the site commenced in January 2017 and were completed in June 2017. The works were conducted by Enviropacific with asbestos clearance and validation services provided by WSP.

Enviropacific's scope was to remediate the 'high likelihood' areas in accordance with the RAP and WSP was engaged by Enviropacific to provide delineation and validation services within those identified zones.

Based on the scope of work undertaken 'high likelihood' areas are considered to have been remediated to the extent practicable through targeted detailed investigation and excavation of visually identified asbestos containing fill, placed into two capped containment cells.

The conceptual site model identified a number of moderate risks. These included risks to future site occupants, workers during the development (in particularly earthworks) activities where additional asbestos or other unexpected finds may be encountered, and risks to future maintenance workers and site users if the capped material is not maintained. Procedures for the mitigation of these risks are documented in this site environmental management plan (EMP).

The purpose of the EMP was to manage the residual risks relating to the presence of asbestos within the containment cell (Appendix C) and the potential for asbestos, or other contaminants of concern, to be uncovered in the remainder of the site, particularly during future stages of the site development but also potentially during future maintenance works that may involve ground disturbance.

1 INTRODUCTION

1.1 BACKGROUND

WSP Australia Pty Ltd (WSP), was engaged by Enviropacific Services Pty Ltd (EPS) to provide environmental consulting services related to the development of the Western Sydney Parklands Trust, Eastern Creek Business Hub lands, located between the M7 Motorway, Great Western Highway and Church Street in Rooty Hill, NSW ('the site'). The Eastern Creek Business Hub property has been approved for development under SSD 5175 by the Department of Planning and Environment. Refer to Figures 1 and 2, **Appendix A** for the site locality and features.

Previous investigations identified asbestos contamination in multiple areas of the site, these zones were understood to be areas previously occupied by structures or uncontrolled fill stockpiles. The remedial action plan (RAP), prepared by Coffey Environment Australia Pty Ltd (Coffey), identified areas with a 'high likelihood' of asbestos impact that were to be remediated through excavation to remove ACM and asbestos impacted soil prior to the bulk earth works of phase 1 of the development.

The remediation works were carried out by EPS on behalf of Western Sydney Parkland Trust (WSPT). WSP was engaged by EPS to provide delineation and validation services within the identified remediation zones. Remediation undertaken by EPS as part of the validation program comprised the removal of asbestos from the 'high likelihood' areas, and the containment of this asbestos impacted fill in two containment cells, in the north of the site.

According to the RAP (Coffey, 2015), areas outside of the remediation zones are considered to have 'low likelihood' of asbestos and the residual risk, as stated in the RAP, should be managed via an appropriately prepared environmental management plan (EMP) where remediation will be triggered if asbestos impact is discovered during the development phase or during the operational phase where ground disturbance activities may occur into the future.

The validation report (WSP, 2017) concluded that the remediation of the identified 'high likelihood' areas had been carried out in accordance with the RAP and that based on available information the site was suitable for the intended Commercial/Industrial land use provided that an environmental management plan (EMP) was implemented.

The purpose of the EMP was to manage the residual risks relating to the presence of asbestos within the containment cell (Appendix C) and the potential for asbestos, or other contaminants of concern, to be uncovered in the remainder of the site during future stages of the site development or potentially during ground disturbance works following development.

The works are being audited by Mr Andrew Lau of JBS&G Australia Pty Ltd (NSW EPA accredited auditor).

1.2 REQUIREMENT FOR AN EMP

Ongoing environmental management is required to ensure appropriate steps are taken if further contamination is uncovered during future Site development, during ground disturbance works following development and to ensure that the capping material covering containment cell remains intact in perpetuity. To practically manage these two different aspects WSP has developed two environmental management plans.

This EMP covers the development phase and ongoing operational phase. The long term EMP is only relevant to the allotment containing the cell. It has been included in this document as Appendix C for reference purposes.

1.3 EMP OBJECTIVES AND SCOPE

This EMP has the following objectives:

- Summarise remedial works conducted on the Site to date;
- Summarise the presence of asbestos within containment cells;
- Outline practical procedures for developers of the Site and future site users, so that if additional asbestos is encountered, or other unexpected finds occur, they are managed appropriately;

1.4 AUDIENCE

This EMP has been prepared for Enviropacific Services (EPS) and their client (and Site Owner), WSPT.

The audience the EMP has be designed for those contracted to develop the Site, and in particular the earthworks contractor.

1.5 LEGAL ENFORCEMENT

In order for the Site EMP to be effective it must be legally enforceable.

The EMP is enforceable as the Site Audit Statement required under the approval (SSD 5175) makes reference to it.

WSP recommends that compliance with the EMP be made a condition of consent for future development phases on the site.

1.6 RELATIONSHIP TO LEGISLATION

This section provides a summary of relevant legislation for reference purposes. It is not intended to be comprehensive. Further detail should be obtained from the relevant Acts and Regulations referred to, or publications made or endorsed by the relevant regulatory body.

This EMP does not supersede obligations on the Principal Contractor, or their subcontractors with respect to worker health and safety, contaminated land management or waste management, rather it provides additional guidance on management of environmental risks relating to the Site.

1.6.1 WORK HEALTH AND SAFETY

The Work Health and Safety Act, 2011 is the primary piece of legislation protecting workers on the site. WorkCover NSW regulates the industry under this Act.

Under Section 3.1 of the WHS Regulation 2011 a person who has a duty under the Regulation to manage risks to health and safety must comply with requirements to manage risk, identify reasonably foreseeable health and safety hazards, eliminate risks to health and safety as far as practicable or if not reasonably practicable then minimise those risks. They must also maintain and review any control measures that are in place to protect worker health and safety.

Risk assessment on construction projects is managed at the task level by preparation of work method statements and at the project level by preparation of work health and safety plans. Therefore, provided there is an adequate method for notification of the presence of the EMP, its recommendations can be readily built into the health and safety management of any construction project. Compliance with relevant WHS legislation is mandatory.

Of particular note is that the primary chemical of concern historically found on this site is Asbestos. The regulations and codes of practice provide specific requirements around management of asbestos, including that the person(s) engaged in removal works should be appropriately licenced.

Safework Australia and Safework NSW have prepared various relevant codes of practice for the construction industry. Particularly pertinent guidance is provided in:

- SafeWork Australia (2016) *Code of Practice - How to Manage and Control Asbestos in the Workplace*.
- SafeWork Australia (2016) *Code of Practice - How to Safely Remove Asbestos*.
- WorkCover NSW (2011) *How to Manage Work Health and Safety Risks*.
- WorkCover NSW (2014) *Managing Asbestos in or on Soil*.

1.6.2 SITE CONTAMINATION

The Contaminated Land Management Act, 1997 is relevant in ensuring the site is suitable for the intended landuse and gives powers to the NSW EPA to regulate contamination on sites, manage the NSW Site Auditor Scheme, and make and endorse guidelines. If future contamination is found on the site during development, of following development, then it will be necessary to remediate the site in accordance with relevant guidelines made or endorsed by the NSW EPA, to the satisfaction of the Site Auditor.

The NSW EPA has made and endorsed various guidelines of relevant to the management of contaminated sites. The most pertinent to this site and management of potential risks on it include:

- National Environment Protection Council (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013*.
- NSW EPA, (1995) *Contaminated Sites: Sampling Design Guidelines*.
- NSW EPA, (2006) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 2nd Edition*.
- NSW EPA, (2011) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.

1.6.3 WASTE MANAGEMENT

Waste in NSW is regulated by the NSW EPA under the NSW Protection of the Environment Operation Act. Any materials removed from the site must be classified in accordance with the NSW EPA 2014 *Waste Classification Guidelines*, transported by appropriately licenced operators and disposed of lawfully.

2 SITE CONDITION AND FUTURE USE

This section of the report provides a summary of pertinent site features and condition. Further details can be obtained from the validation report for the site (WSP, 2017).

2.1 SITE IDENTIFICATION

The location of the site is shown in Figure 1, **Appendix A**.

Table 2.1: Property and site details

Site name	Eastern Creek Business Hub
Site address	Rooty Hill Road, Eastern Creek, NSW
Site identification	The site comprises numerous lots, these are shown, along with the site boundary on Figure 4, **Appendix A**.
Local Government Area	Blacktown City Council
Dimensions and Area	770 m (along Rooty Hill Road), 600m along Church Street, 130 m along Great Western Highway and 1,100 m along the M7 Motorway The site is approximately 34 hectares.
Current site use	The site is currently vacant land, with no remaining structures previous residential and commercial facilities have been demolished.
Surrounding land uses	The site is surrounded by Morreau Reserve, the Great Western Highway, M7 Motorway and residential properties.
Zoning	SEPP (WSP) 2009: Unzoned Land - Western Parklands
Proposed site use	The site is to be developed as a Commercial/Industrial business hub

2.2 OVERVIEW OF REMEDIAL WORKS

Remediation works on the site commenced in January 2017 and were completed in June 2017. The works were conducted by Enviropacific with asbestos clearance and validation services provided by WSP.

Remediation works were conducted in accordance with the RAP (Coffey, 2016). The remediation involved assessment of asbestos impacts in soil within various 'high likelihood' areas shown on Figure 2 and 3, **Appendix A**. In each zone an intensive test pitting program including surface slashing and observation was carried out followed by physical removal of all identified asbestos impacted materials. Validation of the zones was by visual clearance at the extent of excavation, supplemented by laboratory analysis in zones identified as containing friable asbestos (Area A, K, W and X). The resulting excavated and cleared zones are shown on figures 5a to 5f **Appendix A**

Excavated soil containing asbestos was transported to purpose built cells in the north east of the site and capped with 0.5m of VENM, the subsoil material from the pit excavation.

2.3 FUTURE SITE DEVELOPMENT

As detailed in the RAP (Coffey, 2015) the development proposed for the site is primarily for bulky good and large retail businesses.

2.4 ENVIRONMENTAL SETTING

The site is located on Rooty Hill Road, Eastern Creek, NSW (refer to Figure 1, **Appendix A**). The site is currently vacant land, with no remaining structures previous residential and commercial facilities have been demolished. The site is surrounded by Morreau Reserve, the Great Western Highway, M7 Motorway and residential properties.

The Site is relatively flat and has an elevation of between 38 and 53 metres Australian Height Datum (m AHD). Eastern Creek is the closest flowing surface water body, located approximately 300 m to the east of the site.

The site is underlain by the Triassic aged Bringelly Shale of the Winamatta Shale Group (Penrith, Geological Series Sheet 9030, 1991), which comprises black to dark alluvial and estuarine formed grey shale and laminites, carbonaceous claystone, claystone, fine to medium-grained lithic sandstone, and rare coal and tuff. Across the Site, the base of the Wianamatta Shale is expected to be approximately 10 to 20 m below ground surface (m bgs), dependent on surface elevation, and is underlain by Hawkesbury Sandstone.

Bedrock is likely to be overlain by clay soils formed as a result of the weathering of the shale bedrock, and closer to Eastern Creek the clay soils are expected to be overlain by alluvial deposits of silty to peaty quartz sand and clay with common shell layers deposited during the Holocene in both alluvial and estuarine environments.

Groundwater at the Site is likely to be present within the weathered shale and flow to the north east toward Eastern Creek.

2.5 SUMMARY OF RESIDUAL CONTAMINATION

Contamination remaining on the site includes:

- Capped asbestos impacted soils within the purpose built containment cells. (see Figure 4, **Appendix A**);
  - Comprises asbestos containing materials (bonded and friable) in a soil matrix;
  - Contained beneath a cap comprising a geotextile marker overlain by at least 0.5m of layer of VENM clay.
- Elsewhere onsite there is a potential for asbestos to be present:
  - There is potential for asbestos to be present in areas of the Site identified in the RAP (Coffey, 2015) as 'low likelihood' areas.
  - As a result of the practical remedial approach taken under the RAP[1], there is still a possibility that ACM could have been missed in the 'high likelihood areas', such as the potential for asbestos to remain in soil between test pits where asbestos was not found.

2.6 ASSESSMENT OF RESIDUAL RISK

A qualitative risk assessment for the residual contamination was presented in the validation report (WSP, 2017). The validation report concluded that:

- The Site is suitable for the intended commercial industrial development and use providing that this EMP is implemented;

[1] The 'high likelihood' zones identified in the RAP (Coffey, 2015) were subject to test pitting on a 10m grid and then where asbestos was found it was chased out to the extent practicable and the resulting excavations visually validated, with supplementary lab testing in zones where friable asbestos was found.

- Moderate risks identified related to staff involved in future development phases of works who may encounter additional asbestos or other unexpected finds; and future maintenance staff or Site occupants should the capped waste be disturbed, either deliberately or though erosion over time.
- These risks are manageable by implementation of an asbestos management and unexpected finds protocol (Section 3.2) and appropriate work health and safety and management plans during the development, and by ensuring future maintenance workers are informed, and subsurface works in the vicinity of the cap are appropriately overseen and the site is routinely inspected to ensure degradation of the capping materials doesn't occur.

The following sections of this EMP set out responsibilities and protocols to address risks related to staff involved in future development phases of works who may encounter additional asbestos in soil or other unexpected finds.

A Long Term EMP, for the capped cell, is presented as **Appendix C**.

3 SITE DEVELOPMENT PHASE

As noted in Section 2.5 and as per the RAP there is a potential for asbestos to remain in soil across the site. This risk needs to be managed during the development phase of works and also during the operational phase where ground disturbance activities may occur into the future as these are the most likely times that these substance, if present, will be encountered.

It is important to manage this risk so that:

- Health and safety of site workers is protected throughout the works;
- Material is not inappropriately disposed of offsite or reused onsite; and
- So that the cost associated with asbestos, if encountered, is not exacerbated through poor identification, containment and/or management of the material allowing it to be spread or mixed with clean materials.

The following sections been prepared to manage additional asbestos, if encountered, or other unexpected finds. The EMP is not designed to be a construction environmental management plan (CEMP) for the development works. A CEMP should be prepared by the principal contractor and should refer to this document for general advice. However, the strategies in the CEMP will need to be specific to the intended work.

3.1 ENVIRONMENTAL MANAGEMENT STRUCTURE AND RESPONSIBILITY

The development works carried out on the Site will be undertaken under the guidance of the developer (Frasers) Project Manager. The Project Manager will be responsible for the implementation of the majority of procedures provided in the EMP. Where the specific procedures are technical or complex in nature, the Project Manager may appoint qualified agents (i.e. environmental consultants) to fulfil the requirements or advise the appropriate implementation. The responsibility of ensuring the advice from the technical sub consultants is endorsed and implemented, will rest with the Project Manager (Frasers).

Table 3.1 outlines the roles and responsibilities of the Project Team during the construction phase of the project. The primary contact point for all environmental communication including incident reporting will be the Project Manager.

Table 3.1: Responsibilities

PARTY	RESPONSIBILITY OF PARTY
Developer (or Site Management once the site is operational)	The key responsibility of the developer (Frasers) is to ensure the protection of site users and future maintenance workers. Specifically the developer will: 1 Maintains ultimate responsibility for implementation of the EMP. 2 Will review the effectiveness of the EMP throughout the development phase and following any incident or other event that suggests the EMP is ineffective. 3 Will record any review of the EMP undertaken and ensure that any improvements deemed necessary are implemented and communicated to relevant parties. 4 Will ensure that sufficient resources are allocated to comply with the requirements of this EMP.
Principal Contractor	The principal contractor is responsible for successful planning, implementation and completion of construction activities in a manner that does not compromise the health of workers or site workers: 1 Communicate between the onsite earthworks contractors and the developer/site Management, as required.

PARTY	RESPONSIBILITY OF PARTY
	2 Will ensure that contractors engaged to undertake any works on site are notified of the existence of the EMP. 3 Will ensure that any issues that suggest that the EMP is ineffective are reported to the developer. 4 Review subcontractor safe work method statements to ensure risk of encountering asbestos has been considered and provide ongoing inspection of their work for compliance with SWMSs. 5 Act as contact point for initial incident reporting. 6 Report any incidents, additional asbestos or other unexpected finds to the developer. 7 Incorporate recommended mitigation measures and procedures provided in this EMP into the construction works.
Sub-Contractors	All subcontractors have an obligation to carrying out their own work with due diligence so that worker health and the environment is protected. They must: 1 Comply with statutory requirements applicable to their work. 2 Prepare their Safe Work Method Statements (SWMSs) with reference to this EMP. 3 Have SWMSs reviewed by the Principal Contractor, and amended if necessary prior to starting works. 4 Abide by their SWMS during all works. 5 Report any incidents that may result in health or environmental risk arising during, or in connection with, their work. 6 Implement practical ways to control health and environmental risks.
Environmental Consultant	The Environmental Consultant may be engaged by the Developer/Site Management to provide specific advice if contamination is identified during construction works. They must: 1 Comply with statutory requirements applicable to their work. 2 Prepare their Work Method Statements (WMSs) with reference to this EMP. 3 Have WMSs reviewed by the Principal Contractor, and amended if necessary prior to starting works. 4 Abide by their WMS during all works. 5 Report any incidents that may result in health or environmental risk arising in the course of, or in connection with, their work.

3.2 ASBESTOS MANAGEMENT AND UNEXPECTED FINDS PROTOCOL

3.2.1 TYPES OF UNEXPECTED FINDS AND EXPERIENCE TO DATE

The validation report (WSP, 2017) presents the site condition at completion of the remediation works. At that time, all known high likelihood zones had been intensively investigated and all identified asbestos in those zones, and discovered elsewhere onsite during the works, where remediated. However, due to the scale of the site and the extent of asbestos found to date, potentially contaminated soil (asbestos or other waste) materials could be uncovered during ground disturbance.

Examples of potentially contaminated materials include:

- Asbestos or suspected asbestos containing materials;
- Man-made fibrous material or
- Powdery residues;

- Materials with unnatural odours (eg fuel, tar, solvent odours) or man-made inclusions throughout (eg Ash, coke, bricks, rubble or rubbish); and
- Materials with dark stains or unusual colours.

Based on the experience obtained during the remediation works, there is some possibility of encountering waste burial pits or trenches on the site, up to 6 m deep. These were filled with waste (typically building and demolition waste, machinery parts and bonded asbestos).

There were also finds of friable asbestos in the north of the site. These appeared as a loosely cemented white or light grey substance, similar to dried concrete slurry or chalk. Photographs of typical friable asbestos and asbestos fragments previously encountered on Site are provided in **Appendix B** for reference purposes.

We recommend that future earthworks are undertaken in a careful and considered manner with spotters employed to quickly alert plant operators if any addition asbestos or other unexpected finds are discovered. This will minimise the risk of such material being inadvertently spread or mixed with clean materials.

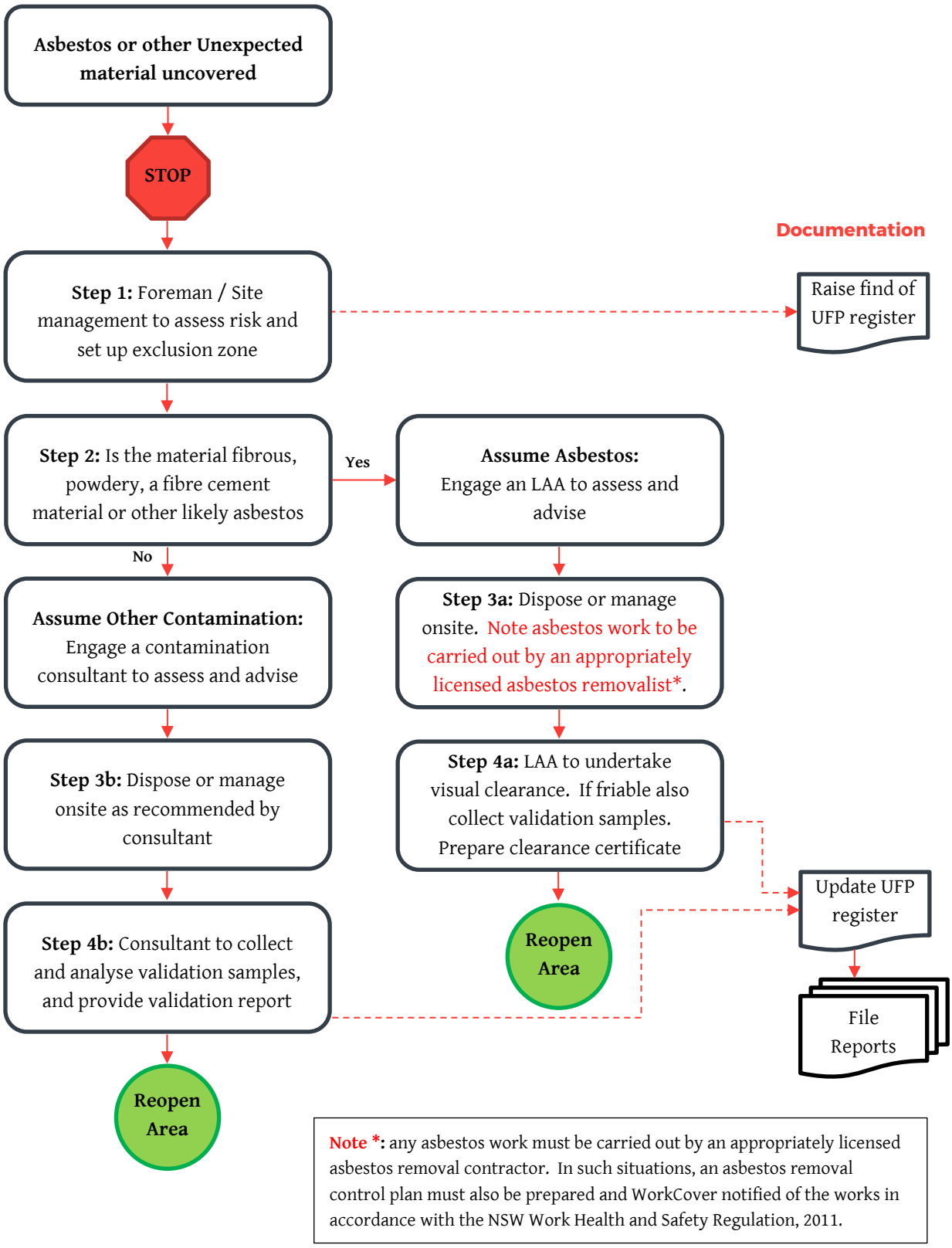
3.2.2 MANAGEMENT OF ASBESTOS OR OTHER UNEXPECTED FINDS

In the event of an unexpected find occurring, the following control and management actions are required. These are visually shown on Diagram 3.1 (following page):

- Works in this area of the site are to cease temporarily and this area of the Site be secured.
- Site Supervisor and Developer to be notified with details of the material description (see above characteristics) and suspected extent.
- If required environmental consultant to be contacted for advice.
- Where asbestos materials are suspected, a Class A (friable asbestos) or Class B (bonded asbestos) licensed contractor will be required to coordinate the works and specify appropriate environmental control measures in accordance with existing legislation and guidance. This may require the following:
  - Notification to WorkCover of intended removal works
  - Establish workplace and site boundary air monitoring, and decontamination facilities;
  - Provision and use of appropriate PPE;
  - Use of closed vehicle cabs with air conditioning running;
  - Use of lined and covered vehicles;
  - Identification of clearly defined trafficking routes from work area;
  - Temporary stockpiling in an appropriately controlled manner to prevent liberation of fibres;
  - Disposal of the waste:
    - The preferred approach would be for development of further onsite containment, in consultation with, and following approval by WSPT. This aligns with the NSW EPA waste hierarchy and would be a lower cost option than offsite disposal.
    - If no onsite containment option can be found then the waste must be classified in accordance with NSW EPA waste classification guidelines and disposed of to an appropriately licenced facility.
  - Clearance certificates (must be produced for friable and bonded asbestos).

— Where chemical contamination is suspected, the developer should liaise with the environmental consultant to characterise the material, coordinate the works and specify appropriate environmental control measures in accordance with existing legislation and guidance.

Diagram 3.1: Management of Asbestos or other unexpected finds



3.2.3 DOCUMENTATION

The contamination should be documented in an unexpected finds register, noting how the issue was resolved. Any records of characterisation, onsite containment, offsite disposal and/or clearance certificates should be retained. If onsite containment occurs then the long term EMP (Appendix C) should be updated to reflect the locations and construction of any additional cells on the site.

3.2.4 MINIMUM GENERAL CONTROLS

Works must be conducted in a manner that mitigates dust generation.

Potential sources of dust generation include:

- Excavation and landscaping works;
- Loading of soil on or off trucks; and
- Wind movement across stockpiled material and exposed soil areas.

In order to mitigate risk from dust generation we recommend the following:

- Undertake regular dust inspections when excavation is occurring;
- Ensure all exposed soil and any vehicle routes are regularly dampened to minimise dust generation;
- Monitor dust conditions during maintenance works where stockpiles are made, or where bare earth is exposed;
- Plan activities in light of forecast weather conditions and cease working in high wind conditions;
- A hose or other water supply should be available and used to dampen all bare earth; and
- Personnel working in areas during potential dust generating works are to wear the appropriate personal protection equipment (PPE).

In the event of an asbestos find, additional controls must be in place to minimise exposure to workers. Additional recommended PPE includes:

- P2 dust mask (working with asbestos impacted fill); and
- Tyvek suit (working with asbestos impacted fill) unless otherwise directed by an occupational hygienist.

Other controls such as the need for asbestos air monitoring should be advised by the LAA.

3.3 OFF SITE DISPOSAL OF MATERIAL

Any soil generated at site which requires disposal should be stockpiled and subsequently classified for disposal in accordance with NSW EPA, 2014 *Waste Classification Guidelines : Part 1 Classifying Waste*.

A qualified consultant shall prepare a waste classification letter for the receiving waste facility. Once classified, the material can be disposed of only by appropriately licensed transportation contractors to an appropriately licensed facility.

At all stages appropriate documentation should be maintained including but not limited to:

- Waste classification report;
- Waste consignment documentation; and
- Landfill disposal dockets.

3.4 EMP REVIEW

The EMP is a dynamic document. Review of the EMP may be required where site conditions are substantially different from those described in the EMP. A review may be called for by the developer of principal contractor at any time to assess the performance of the EMP and to suggest changes.

4 SUMMARY OF RECOMMENDATIONS

The following is a list of recommendations contained in this report. It should be read as a summary only, for detailed background and requirements refer to the section of the relevant section of the report.

ID	RECOMMENDATION	CROSS REFERENCE
Roles and responsibilities		
1	The developer/Site Management to provide oversight and ultimate responsibility for implementation of the EMP.	Section 3.1
2	During construction the Principal Contractor is to implement an unexpected finds protocol as part of the CEMP, to ensure any asbestos (or other contaminants) encountered during the earthworks are identified and managed in a manner that will protect human health and minimise remediation expense. The Principal Contractor is to keep the developer informed of any additional asbestos or other unexpected find.	Section 3.1
3	Subcontractors to prepare SWMS documentation with reference to this EMP and conduct their work in accordance with their SWMS. Subcontractors to notify their supervisor of any incidents.	Section 3.1
4	Subcontractors to conduct routine monitoring required by the EMP to the developer, conduct field activities in accordance with the EMP and report any and report data, recommendations and incidents to the developer in a timely manner.	Section 3.1
Risk assessment and training		
5	All contractors to undertake a site specific risk assessment as part of their SWMS preparation.	Sections 3.1
6	During site development phase the Principal Contractor is to review contractor risk assessments and proposed works plan in accordance with the Asbestos Management and Unexpected Findings Protocol. This role to be assumed by Site Management once the site is operational.	Section 3.1, 3.2
7	Contractors are to implement an induction process for their works to communicate risks and mitigation/control measures.	Sections 3.1
Implementation		
8	Protection of site personnel and the environment by implementation of an Asbestos Management and Unexpected Findings Protocol.	Section 3.2
Monitoring requirements		
9	The contractor to carry out the monitoring (site inspections) in accordance with the EMP and advise the developer of any recommendations.	Section 3.1
Review		
10	The developer (Frasers) to maintain records of the activities onsite. This role to be assumed by Site Management once the site is operational.	Section 3.1

5 LIMITATIONS

Scope of services

This validation report (the report) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and WSP (scope of services). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

Reliance on data

In preparing the report, WSP has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the report (the data). Except as otherwise stated in the report, WSP has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. WSP will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP

There is no instrument which can detect asbestos

The presence of asbestos must be determined visually or by laboratory analysis. There is no instrument currently available for the purpose of screening for asbestos. Thus, any restrictions on the amount of sampling will reduce confidence in the asbestos inspection findings.

The consequence of this is that asbestos which cannot be seen will not be found.

Reliance on asbestos inspections and clearances

The client must not rely upon an inspection or report as indicating that a site is “asbestos free” (or that such asbestos as was reported to have been found is the only asbestos at the site). All that the report can be relied upon to show is that no asbestos was found (or that such asbestos as was identified exists at the location where it was reported to have been found) in the course of the inspection. The findings of the report must be considered together with the specific scope and limitations of the type of inspection undertaken.

Environmental conclusions

In accordance with the scope of services, WSP has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

On all sites, varying degrees of non-uniformity of the vertical and horizontal soil or groundwater conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of soil and/or groundwater conditions encountered. The conclusions are based upon the data and the environmental field monitoring and/or testing and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Also, it should be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for benefit of client

The report has been prepared for the benefit of the client and no other party. WSP assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of WSP or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

Other limitations

WSP will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to or ownership of the properties, buildings and structures referred to in the report nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

6 REFERENCES

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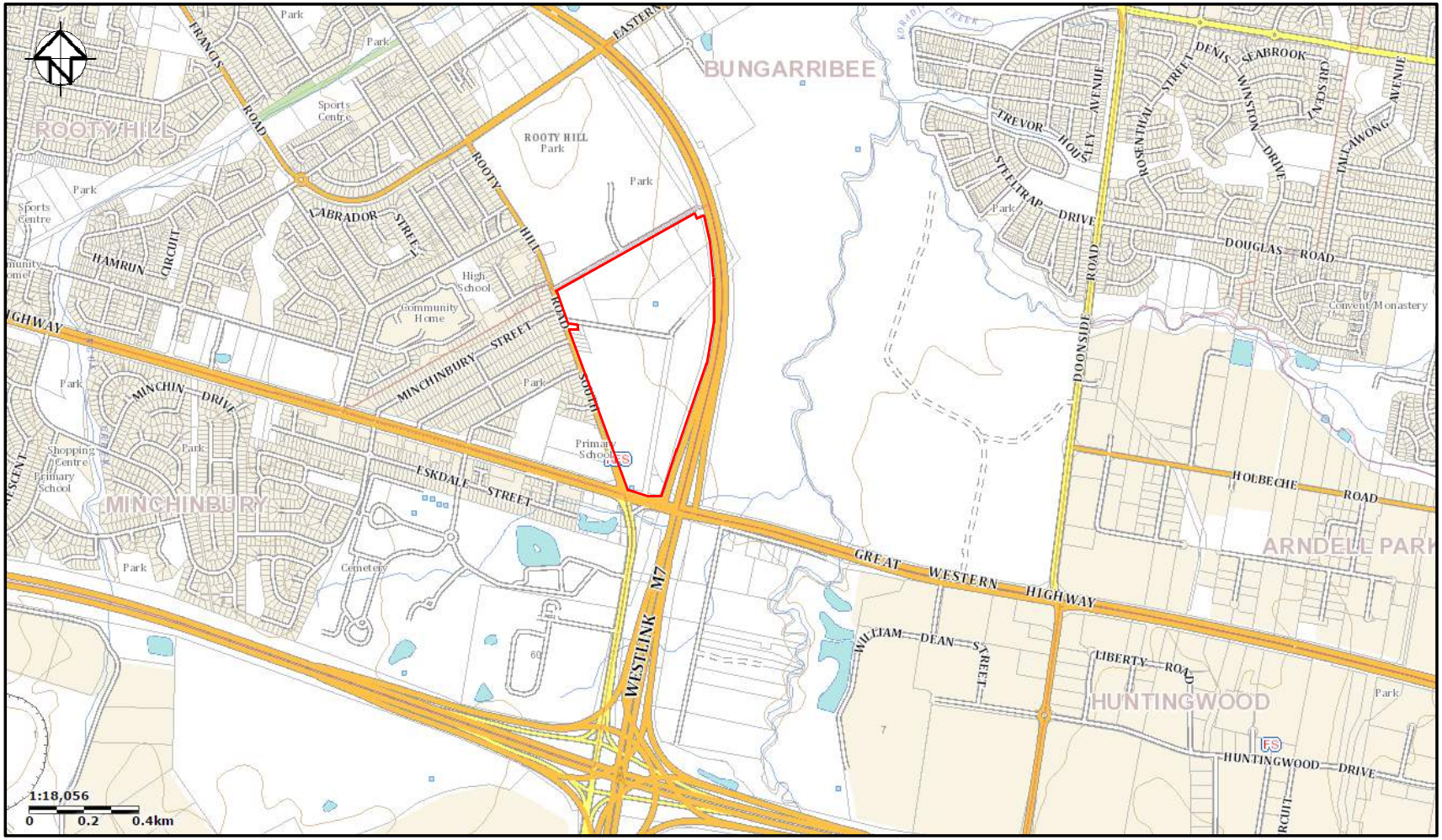
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APPENDIX A

FIGURES

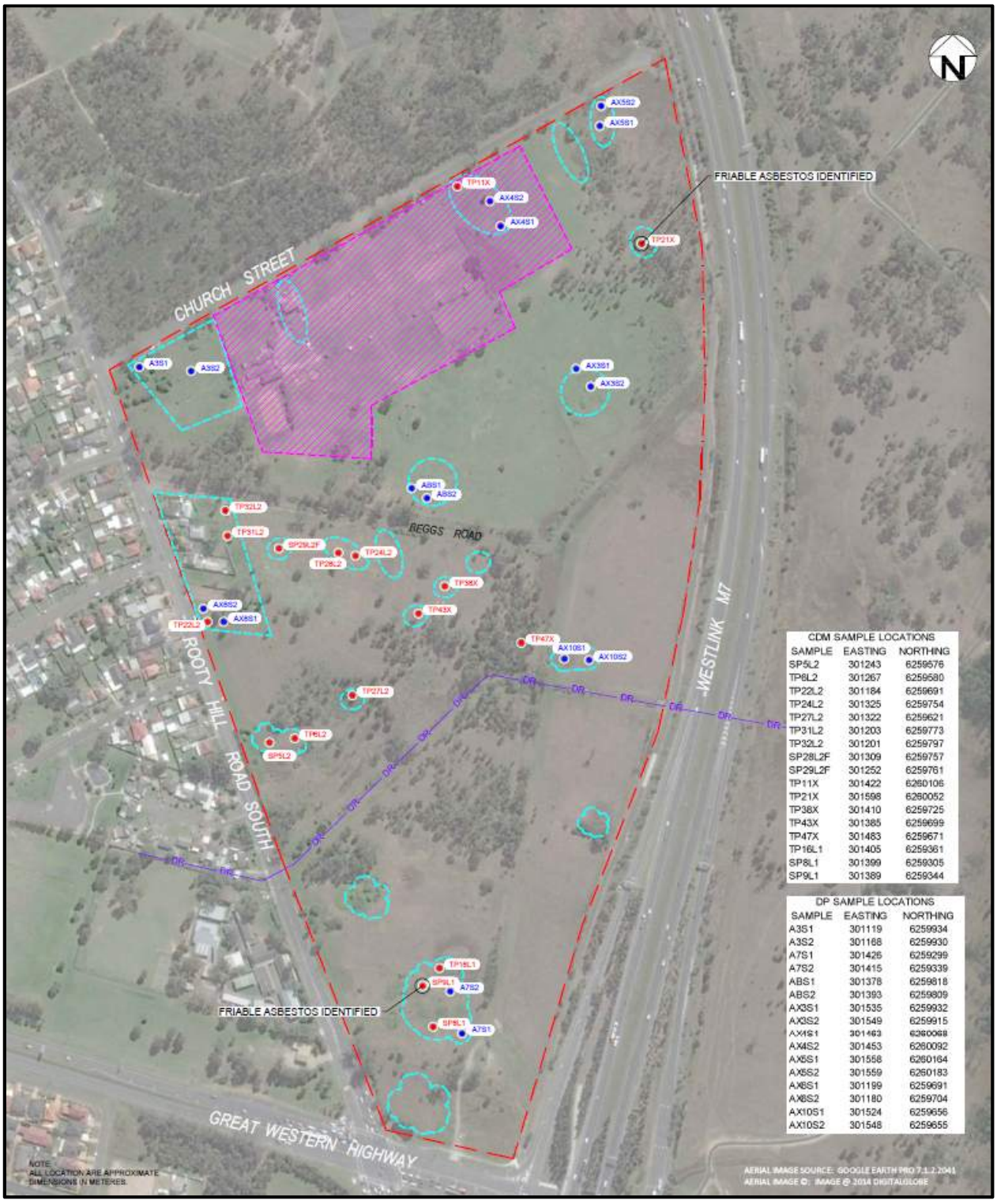


Base Map Source – Six Maps, 2017

LEGEND

Site boundary

Figure 1 – Site Location Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



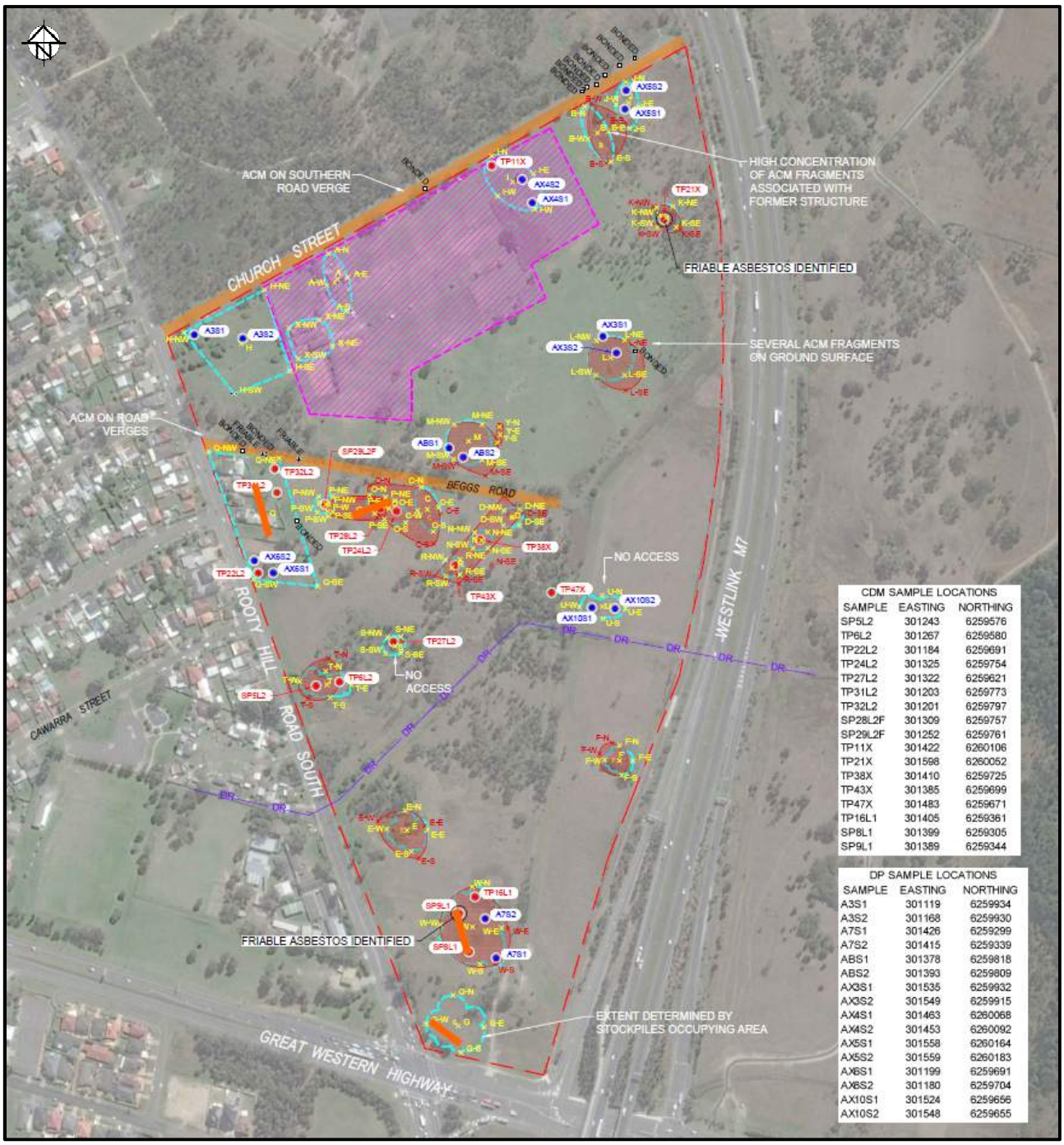
Base Map Source – RAP, Coffey (2015)

LEGEND

Approximate Site Boundary

High Likelihood Zones (Coffey, 2015)

Figure 2 – Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

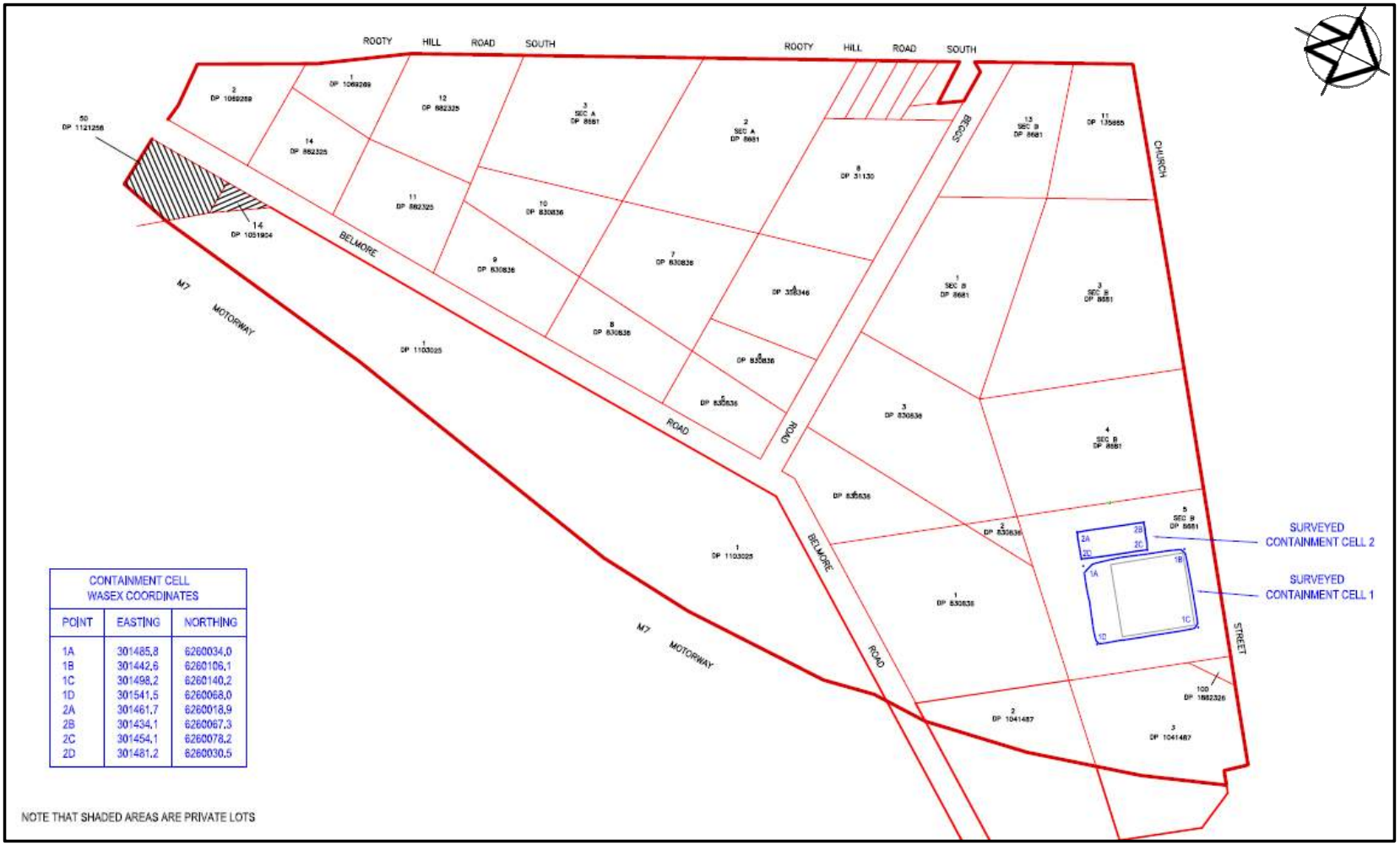


Base Map Source – Coffey, 2016, Suspected and actual of ACM occurrences

Figure 3 – Updated Remediation Zones
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

LEGEND

- Approximate Site Boundary
- Suspected/Proposed Asbestos Impact (Coffey, 2016)
- Revised Suspected Areas of ACM Occurrences (Coffey, 2016)



Base Map Source – Total Survey Solutions, containment Cell Overlayed With Buildings, Plan No. 1014, 2017

LEGEND

Site boundary

Figure 4 – Site Survey Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

N

AREA J

AREA B

AX5S2

AX5S1

J-N

J-E

B-W

B-S

AREA I

CELL 1

CELL 2

AX4S1

TESTPIT

TP21X

AREA K

K-NW

K-NE

K-SW

K-SE

HIGH C
OF ACM
ASSOC
FORME

FRIABLE ASBESTOS

EXCAVATED AREA

BONDED

TOTAL SURVEYING
SOLUTIONS
SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570
Ph. (02) 4655 4035 Fax. (02) 46 55 7094 Email: tss@totalsurveying.com.au

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	PLAN No.: 1012 / DATUM: AHD
CLIENT: ENVIROPACIFIC	DATE: 26/06/2017 / SCALE: 1:1000
PROJECT: ROOTY HILL	DRAWN: JP / CONT. INTERVAL: NA
ADDRESS: CHURCH ST, ROOTY HILL	CHK: / SHEET :1 OF 6

ATE SITE ACCESS

CHURCH STREET

AREA A

AREA A SOUTH

AREA X

AREA X SOUTH

AREA H

EXCAVATED AREA

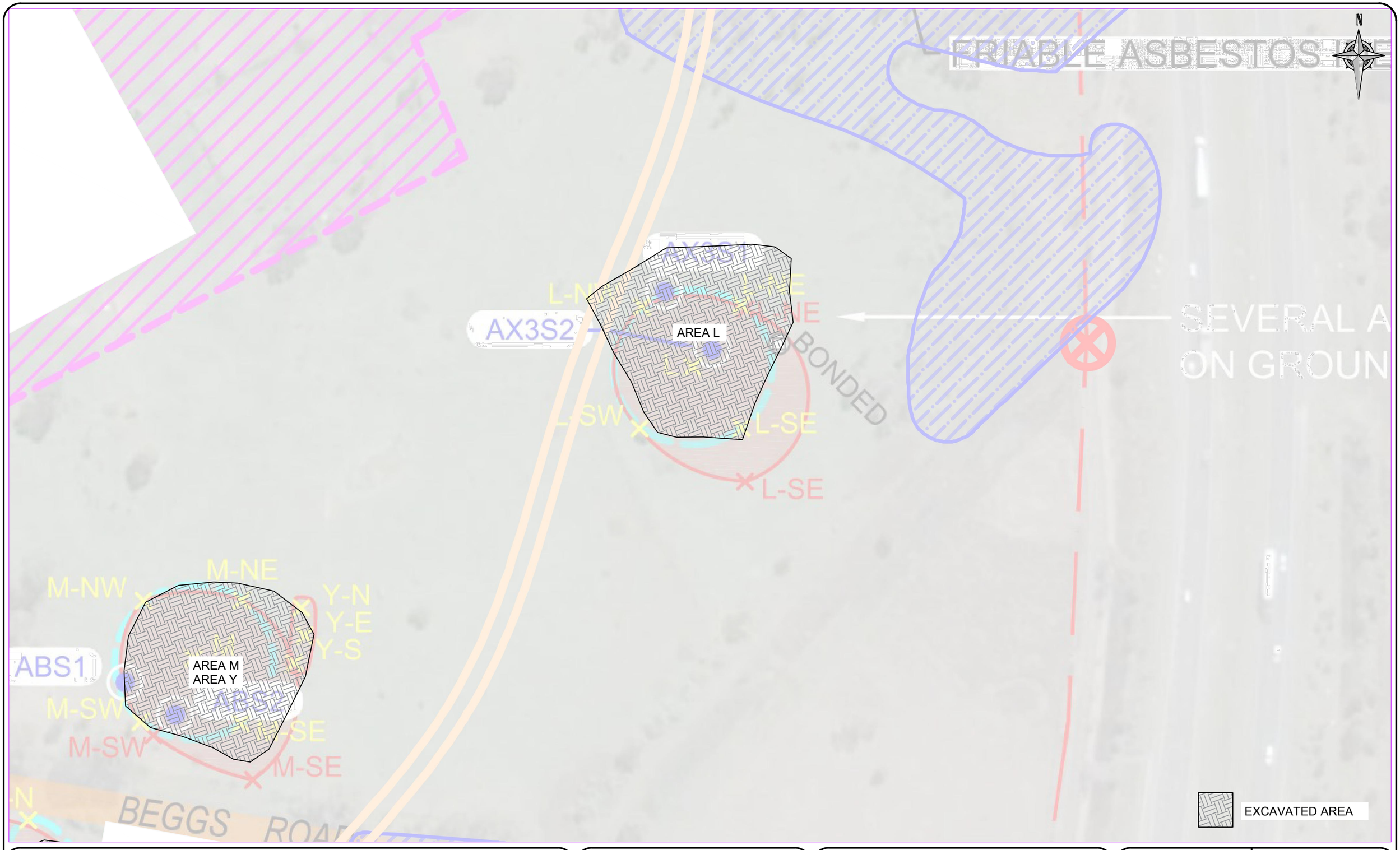
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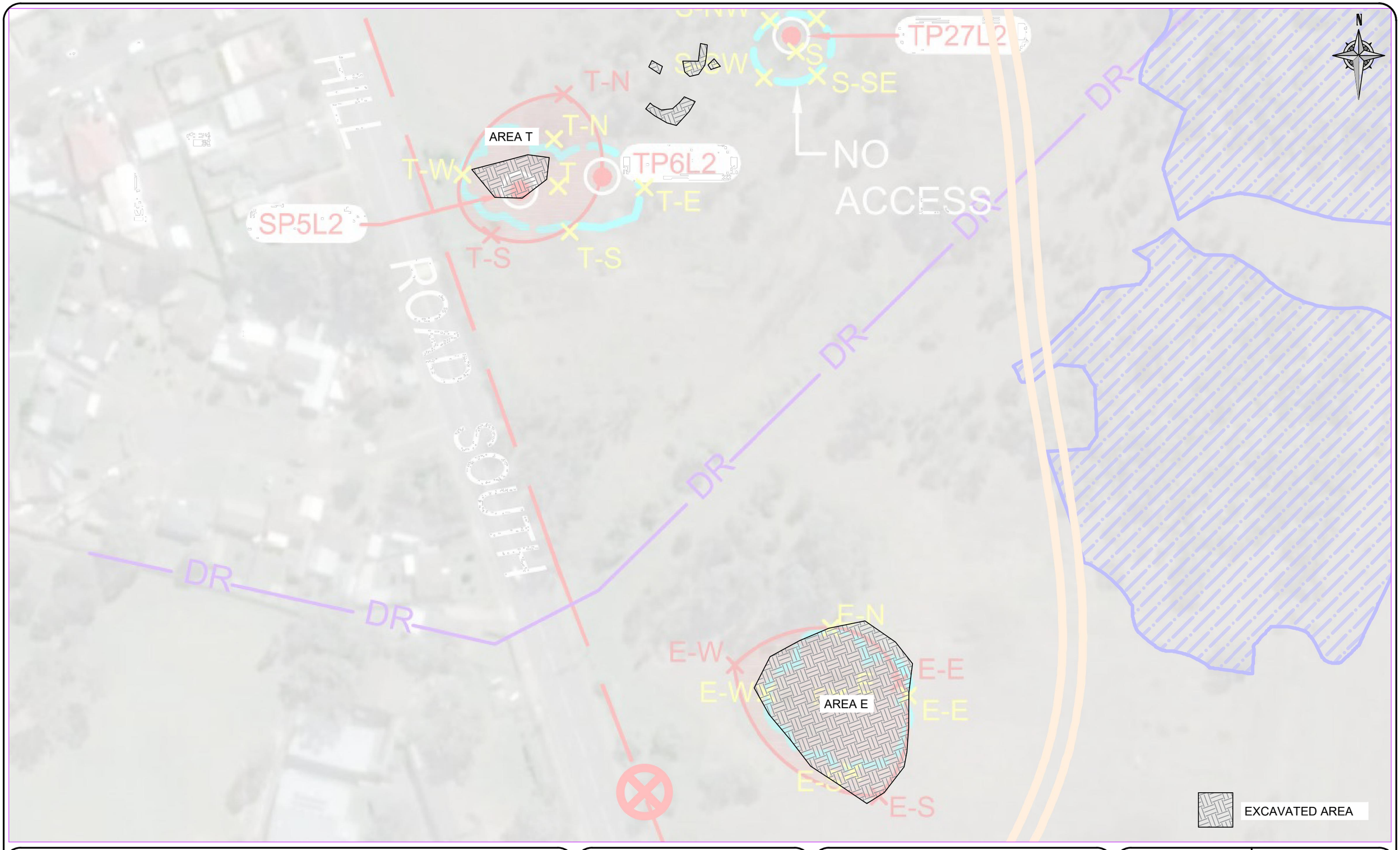


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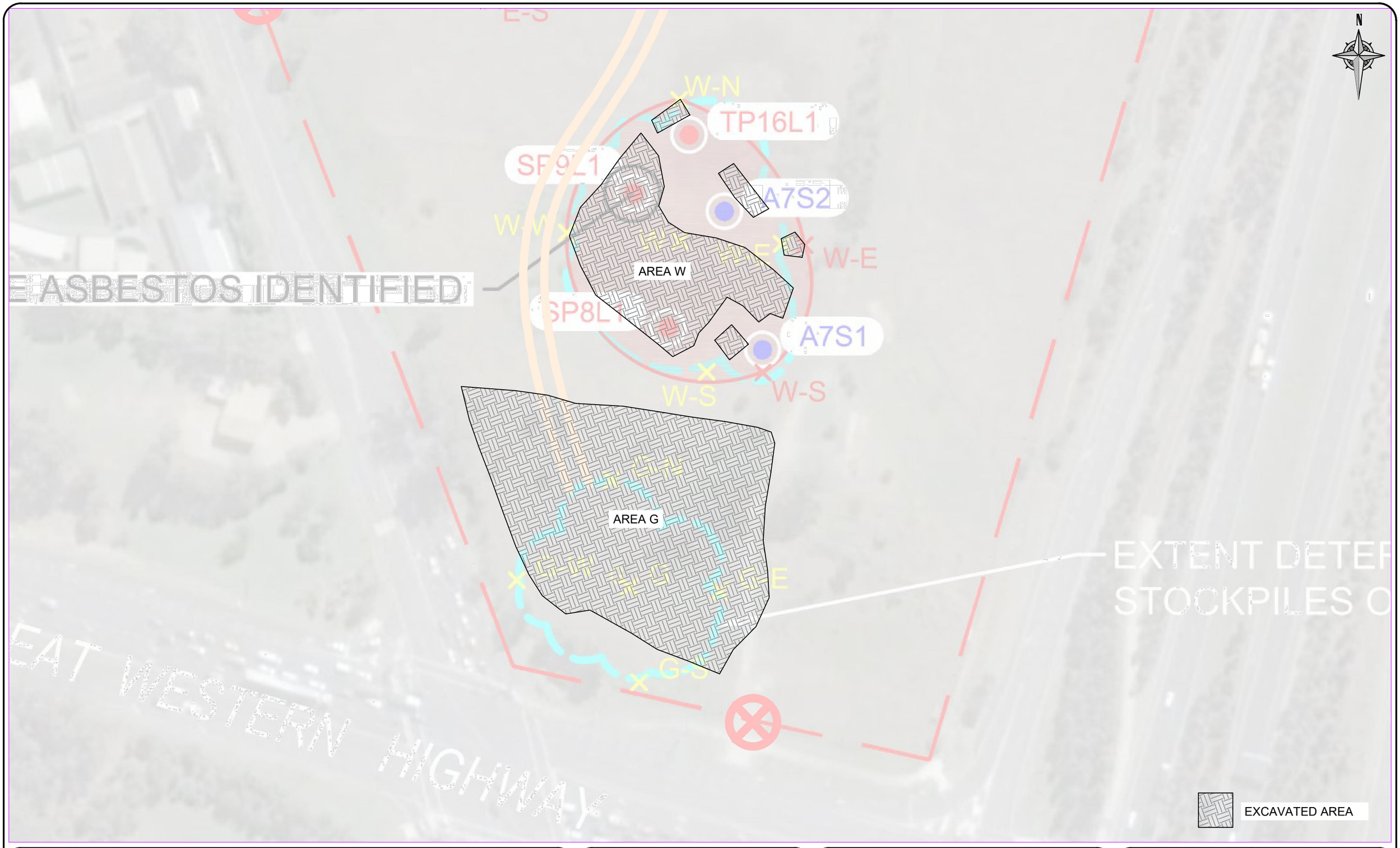
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APPENDIX B

PHOTOGRAPHS

	
Photo 1: Friable asbestos identified in the northern portion of the Site	Photo 2: Asbestos pipe identified in the northern portion of the Site
	
Photo 3: Bonded asbestos identified in the western portion of the Site	Photo 4: Bonded asbestos identified in the northern portion of the Site



Photo 1: Geofabric marker layer over Cell 1



Photo 2: Geofabric Marker layer over Cell 1



Photo 3: Capping layer over Cell 1



Photo 4: Capping layer over Cell 1

APPENDIX C

LONG TERM EMP FOR CONTAINMENT CELLS

ENVIROPACIFIC SERVICES PTY LTD

WESTERN SYDNEY PARKLANDS TRUST EASTERN CREEK BUSINESS HUB - LONG TERM ENVIRONMENTAL MANAGEMENT PLAN

LOT 5, EASTERN CREEK BUSINESS HUB, BEGGS ROAD, ROOTY HILL, NSW

JULY 2017

WESTERN SYDNEY PARKLANDS TRUST EASTERN CREEK BUSINESS HUB - LONG TERM ENVIRONMENTAL MANAGEMENT PLAN

LOT 5, EASTERN CREEK BUSINESS HUB, BEGGS ROAD, ROOTY HILL, NSW

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REV	DATE	DETAILS
A	28/06/2017	Draft
B	4/7/2017	Revised Draft
C	7/7/2107	Client Comments
D	10/7/2017	For Auditor Comments
E	28/7/2017	Further Client Comments
F	31/7/2017	Final

	NAME	DATE	SIGNATURE
Prepared by:	Melinda Collier	28/7/2017	
Reviewed by:	Colin McKay	31/7/2017	
Approved by:	Colin McKay	31/7/2017	

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OUR REF: 2270540A-CLM-REP-003 REVF - APPENDIX C.DOCX
JUNE 2017

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ABREVIATIONS AND TERMS

ACM	Asbestos containing material
ANZECC	Australian & New Zealand Environment & Conservation Council
Bonded	(Asbestos) also known as 'non-friable' asbestos meaning material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound
BTEX compounds	Benzene, toluene, ethylbenzene and xylene
DEC	NSW Department of Environment and Conservation (now EPA)
DECC	NSW Department of Environment and Climate Change (Formerly DEC, now EPA)
DECCW	NSW Department of Environment, Climate Change and Water (formerly DEC & DECC, now EPA)
DP	Deposited plan
DQO	Data quality objective
EPA	Environment Protection Authority
ESA	Environmental site assessment
Friable	(Asbestos) meaning material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos.
HESP	Health, environment and safety plan
mAHD	Metres Australian Height Datum
mBGL	Metres below ground level
mg/kg	Milligram per kilogram (or part per million)
NATA	National Association of Testing Authorities
NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)
NHMRC	National Health and Medical Research Council
PAHs	Polycyclic aromatic hydrocarbon
PID	Photoionisation detector
PQL	Practical quantitation limit (of chemical concentration)
QA/QC	Quality assurance/quality control
RAP	Remedial action plan
RPD	Relative per cent difference
TRH	Total recoverable hydrocarbons

EXECUTIVE SUMMARY

WSP Australia Pty Ltd (WSP), was engaged by Enviropacific Services Pty Ltd (Enviropacific) to provide environmental consulting services for the validation of remediation zones previously identified on the Western Sydney Parklands Trust, Eastern Creek Business Hub lands. The Eastern Creek Business Hub property is to be developed into Commercial/Industrial uses. The site is located between the M7 Motorway, Great Western Highway and Church Street in Rooty Hill and location is shown on Figure 1 in Appendix A. This Long Term EMP specifically relates to two containment cells located within Lot 5 of the site.

Previous investigations identified asbestos contamination in multiple areas of the site, these zones were understood to be areas previously occupied by structures or uncontrolled fill stockpiles. The remedial action plan (RAP), prepared by Coffey Environment Australia Pty Ltd (Coffey), identified areas with a 'high likelihood' of asbestos impact that were to be remediated through excavation to remove ACM and asbestos impacted soil prior to the bulk earth works of phase 1. Remediation works on the site commenced in January 2017 and were completed in June 2017. The works were conducted by Enviropacific with asbestos clearance and validation services provided by WSP.

Enviropacific's scope was to remediate the 'high likelihood' areas in accordance with the RAP and WSP was engaged by Enviropacific to provide delineation and validation services within those identified zones.

Based on the scope of work undertaken 'high likelihood' areas are considered to have been remediated to the extent practicable through targeted detailed investigation and excavation of visually identified asbestos containing fill, placed into two capped containment cells.

The conceptual site model identified a number of moderate risks. These included risks to site workers during the development (in particularly earthworks) activities where unexpected finds may be encountered (detailed separately), and risks to future maintenance workers and site users if the capped material is not maintained. Procedures for the mitigation of these risks are documented in this long term environmental management plan

The purpose of the long term EMP was to manage the residual risks relating to the presence of asbestos within the containment cells.

1 INTRODUCTION

1.1 BACKGROUND

WSP Australia Pty Ltd (WSP), was engaged by Enviropacific Services Pty Ltd (EPS) to provide environmental consulting services related to the development of the Western Sydney Parklands Trust, Eastern Creek Business Hub lands, located between the M7 Motorway, Great Western Highway and Church Street in Rooty Hill, NSW. The Eastern Creek Business Hub property has been approved for development under SSD 5175 by the Department of Planning and Environment. Refer to Figures 1 and 2, **Appendix A** for the site locality and features.

Previous investigations identified asbestos contamination in multiple areas of the site, these zones were understood to be areas previously occupied by structures or uncontrolled fill stockpiles. The remedial action plan (RAP), prepared by Coffey Environment Australia Pty Ltd (Coffey), identified areas with a 'high likelihood' of asbestos impact that were to be remediated through excavation to remove ACM and asbestos impacted soil prior to the bulk earth works of phase 1 of the development.

The remediation works were carried out by EPS on behalf of Western Sydney Parkland Trust (WSPT). WSP was engaged by EPS to provide delineation and validation services within the identified remediation zones. Remediation undertaken by EPS as part of the validation program comprised the removal of asbestos from the 'high likelihood' areas, and the containment of this asbestos impacted fill in two containment cells, in the north of the site.

According to the RAP (Coffey, 2015), areas outside of the remediation zones are considered to have 'low likelihood' of asbestos and the residual risk, as stated in the RAP, should be managed during the Site development process via an appropriately prepared environmental management plan (EMP) where remediation will be triggered if asbestos impact is discovered during the earthworks.

The validation report (WSP, 2017) concluded that the remediation of the identified 'high likelihood' areas had been carried out in accordance with the RAP and that based on available information the site was suitable for the intended Commercial/Industrial land use provided that an environmental management plan (EMP) was implemented.

The purpose of this long term EMP is to manage the residual risks relating to the presence of asbestos within the containment cells located within Lot 5 of the Site.

The works are being audited by Mr Andrew Lau of JBS&G Australia Pty Ltd (NSW EPA accredited auditor).

1.2 REQUIREMENT FOR AN EMP

A long term EMP is required to ensure that the capping material covering the containment cells remains intact. The EMP is applicable to the site considering its proposed primarily commercial industrial land use. Should the site use change in the future to a more sensitive land use zoning, further remediation and/or an update to the current EMP may be required.

This EMP has been developed for the site with reference to guidance on EMPs provided in the NSW EPA, 2006 *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 2nd Edition* (section 3.4.6 and 4.3.3).

The EMP is required to ensure the following:

- Protection of future site users, following development, via ongoing monitoring of site conditions, particularly the integrity of the containment cell capping layer; and
- Protection of the health of maintenance staff involved in future subsurface works within the vicinity of the containment cells (Lot 5) following development.

As owner of the site, WSPT is considered to be the authority responsible for enforcement of the EMP.

1.3 EMP OBJECTIVES AND SCOPE

The EMP has the following objectives:

- Summarise the presence of known contamination on site (i.e. asbestos within containment cells);
- Document the infrastructure of the containment cell;
- Outline a program for ongoing monitoring of the capping layer; and
- Provide a framework for ongoing environmental management of Lot 5 of the site.

1.4 EMP AUDIENCE

This long term EMP has been prepared for Enviropacific Services (EPS) and their client (and Site Owner), WSPT.

The audience the EMP has be designed for:

- Those with the long term responsibility for the management of the lot containing the asbestos containment cells (WSPT).

1.5 LEGAL ENFORCEMENT

In order for the long term EMP to be effective it must be legally enforceable.

WSP understands that the EMP will be enforceable as it is referenced by the Site Audit Statement, which is a condition of consent under State Significant development SSD 5175.

2 SITE CONDITION AND FUTURE USE

This section of the report provides a summary of pertinent site features and condition. Further details can be obtained from the validation report for the site (WSP, 2017).

2.1 SITE IDENTIFICATION

The location of the site is shown in Figure 1, **Appendix A**.

Table 2.1: Property and site details

Site name	Lot 5 of Eastern Creek Business Hub
Site address	Rooty Hill Road, Eastern Creek, NSW
Site identification	This long term EMP specifically relates to the containment cells within Lot 5, Section B, DP8681 identified on Figure 4, **Appendix A**.
Local Government Area	Blacktown City Council
Dimensions and Area	Dimensions and area are shown in Appendix B: - Cell 1 is approximately 83m x 66m - Cell 2 is approximately 55m x 22m
Current site use	Lot 5 is currently vacant land.
Surrounding land uses	Lot 5 is surrounded by the Eastern Creek Business Hub to the east, west and south and Church Street to the north.
Zoning	SEPP (WSP) 2009: Unzoned Land - Western Parklands
Proposed site use	The site is to be developed as a Commercial/Industrial business hub. It is noted that the development footprint does not impeded on the location of the containment cells, the cells fall within an Environmental Corridor north east of the development.

2.2 CELL CONSTRUCTION

Remediation works on the site commenced in January 2017 and were completed in June 2017. The works were conducted by Enviropacific with asbestos clearance and validation services provided by WSP.

Excavated soil containing asbestos was transported to purpose built cells in the north east of the site (Lot 5). The design adopted for cells comprised a geotextile marker layer, consisting of a Geofabric Bidim A34, installed immediately above the levelled fill material. This geotextile marker layer was then covered with at least 0.5m of VENM material excavated from the cells consisting of brown, red, grey mottled clay. Cell construction surveys are provided in Appendix B, with photographs in Appendix C.

2.3 SUMMARY OF RESIDUAL CONTAMINATION

This long term EMP relates to Capped asbestos impacted soils within the purpose built containment cells (see Figure 4, **Appendix A**). The Asbestos impacted material comprises bonded and friable asbestos in a soil matrix.

3 LONG-TERM ENVIRONMENTAL MANAGEMENT

This long term EMP relates to the asbestos containment cells located in the north of the Site, shown on Figure 4.

The management plan has been prepared to ensure that the site remains safe for maintenance workers accessing the subsurface, during any revegetation works by WSPT over time, and other site occupants, by providing role responsibilities and control measures that will support the long term integrity of the capping layer overlying the cells.

3.1 LONG TERM ENVIRONMENTAL MANAGEMENT STRUCTURE AND RESPONSIBILITY

This section summarises the various parties who have been allocated a responsibility under this LEMP. The responsibilities have been allocated according to which party is best placed to manage the requirements. The responsibilities may be delegated where appropriate.

WSPT, as owner of the site will manage these responsibilities by including the LEMP and its requirements in a facilities management tool or similar. WSPT are required to ensure its Parklands ranges have read and understood the EMP, agree to undertake the relevant obligations within the EMP and confirm that they are readily competent to discharge the same obligations.

Roles and responsibilities are summarised in Table 3.1.

Table 3.1: Responsibilities

PARTY	RESPONSIBILITY OF PARTY
WSPT	The key responsibility of WSPT is to ensure the protection of site users and future maintenance workers. Specifically will: 1 Maintain ultimate responsibility for implementation of the LEMP; 2 Review the effectiveness of the LEMP on a two yearly basis and following any incident or other event that suggests the LEMP is ineffective; 3 Implement and communicate improvements and amendments to the LEMP as needed; 4 Provide sufficient resources, where needed, to comply with the requirements of this LEMP; 5 Brief the Parklands Rangers of the existence of this LEMP, and their roles within it;
Parklands Rangers	The Parklands Rangers are responsible for successful planning, implementation and completion of maintenance activities in a manner that does not compromise the health of workers or site users: 1 Arrange for routine inspections of the site condition and capping integrity in accordance with Section 5 of the LEMP and ensure remedial measures are implemented, and notified where problems are identified; 2 Ensure that all maintenance staff conducting works are briefed on the presence of contaminated fill material within the cells; 3 Maintain records of maintenance and/or reports related to the site. 4 Review subcontractor work method statements for compliance with the LEMP and any other aspects required for the safe completion of works on each site;

PARTY	RESPONSIBILITY OF PARTY
	5 Monitor subcontractor compliance with their work method statements and inspect completed work to ensure the capping is restored appropriately upon completion and the integrity of the marker layers and capping layers are not compromised, and /or are restored if compromised; and 6 Promptly notify any concerns regarding the implementation of this LEMP to the relevant WSPT representative.
Sub-Contractors	All subcontractors have an obligation to carrying out their own work with due diligence. They must: 1 Comply with statutory requirements applicable to their work; 2 Prepare their Work Method Statements (WMSs) with reference to this LEMP; 3 Have WMSs reviewed by the Parklands Rangers, and amended if necessary prior to starting works; 4 Abide by their WMS during all works; 5 Report any incidents that may result in health or environmental risk arising during, or in connection with, their work; 6 Implement practical ways to control health and environmental risks.
WSPT	Responsible for maintaining vegetation on the eastern portion non development side of the site (a Vegetation Management Plan has been prepared by Ecological) this land includes the 2 x containment cells

3.2 ENVIRONMENTAL TRAINING AND INDUCTION

Asbestos remains buried on the site in the containment cells. If subsurface works are to be undertaken, maintenance personnel and any contractors must be aware that:

- These containment cells are located in Lot 5 as shown on Figure 4, **Appendix A**.
- A white geotextile marker layer is present between the clay capping clay and the waste.
- The capping layer comprises brown, red, grey mottled clay and is approximately 0.5m thick.
- The white geofabric marker layer may appear brown or grey as it is buried by the clay in the capping layer.
- If excavations extend beneath the marker layer (at the base of the cap) there is a risk of exposing asbestos containing materials.

Photographs of the geofabric marker layers and capping material can be found in **Appendix C**. Survey diagrams are provided in **Appendix B**.

All works that penetrate capping layers must be carried out with due consideration of Work Health and Safety legislation related to asbestos, including all requirements of the NSW Work Health and Safety Act 2011 and relevant codes of practice.

3.3 PROTECTION OF SITE USERS

Based on the findings of the remediation and validation works carried out at the site, there are no anticipated unacceptable risk to future workers on the developed site as the asbestos is contained in a cell with a barrier (capping layer) preventing asbestos fibres becoming airborne.

Risk could potentially develop, if the capping is disturbed or degrades with time (e.g. by erosion). As such the following practices regarding Site use should be followed:

- Vegetation on the capping surface should be maintained in a healthy state to prevent or limit erosion;
- Vehicle traffic should be restricted.

It is important that if disturbed, the cap is reinstated upon completion of any works so that the site remains suitable for its intended use as a commercial industrial area from a health and safety point of view. It is also important that some form of routine monitoring is carried out to inspect that the cap is not degrading or has not been interfered with over time.

During any excavation works through the cap, contractors are to manage dust so that no asbestos fibres are released. We recommend air monitoring is implemented during any excavation works on the cell to demonstrate that the risk to site users has been adequately managed.

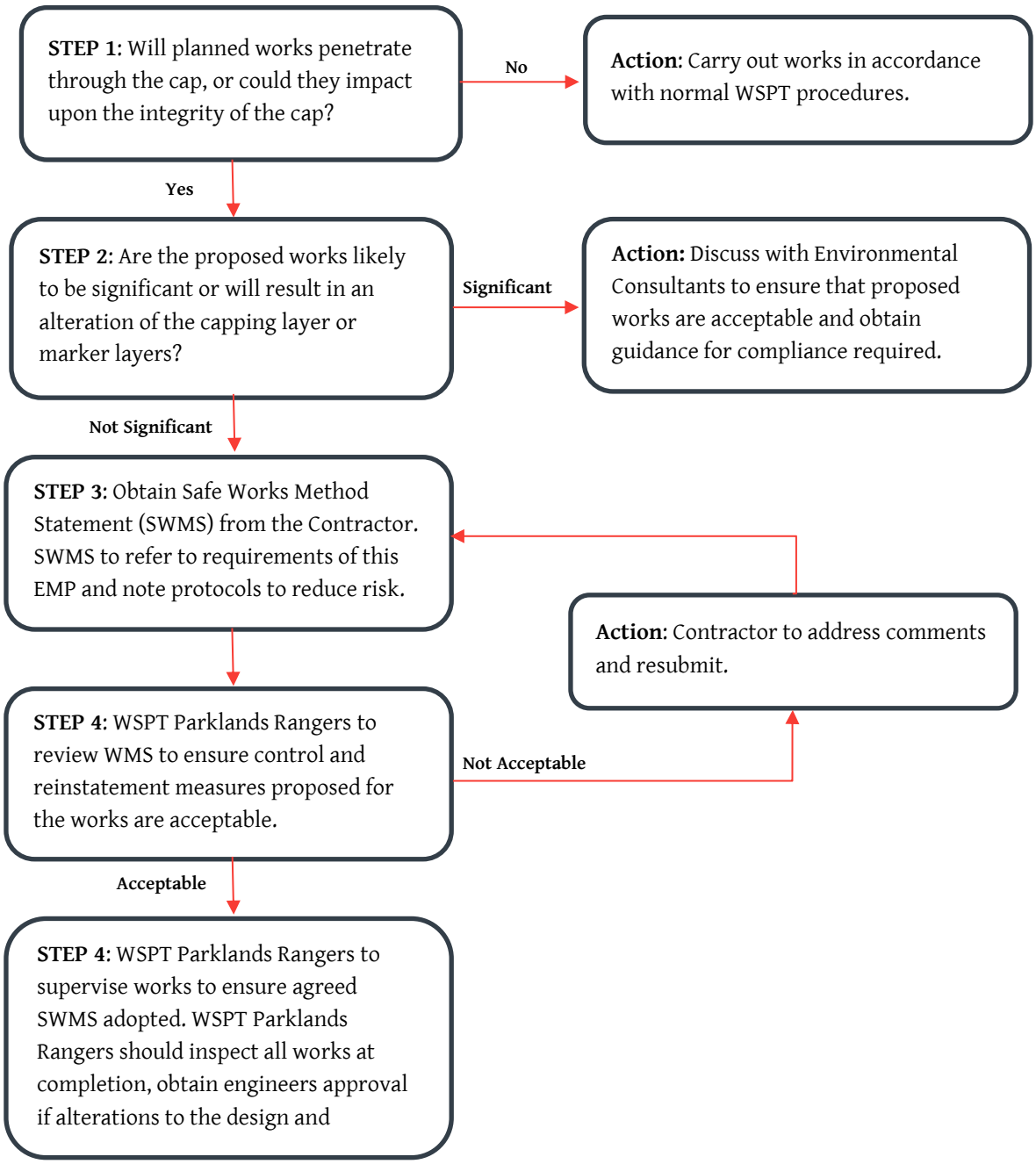
3.4 CONTROL OF FUTURE MAINTENANCE WORKS

Before undertaking any subsurface work, including revegetation on the capped areas of the site, all subcontractors will be required to prepare their own Safe Work Method Statements (SWMS). These should reference this LEMP, including a risk assessment which will be reviewed by the Parklands Rangers.

Contractors will be required to prepare an induction process for their works so that the above risks are communicated with all staff involved in Site maintenance works.

Future maintenance or contract works on each site need to be assessed for the potential to damage or compromise the capping layers or marker layers. Any proposed works should be assessed by WSPT for the Site using the following flow chart:

Diagram 3.1: Flow Chart of Control for Site Works



Note: As impacted fill at the site contains asbestos fibres, any excavation and disposal works into that material must be carried out by an appropriately licensed asbestos removal contractor. In such situations, an asbestos removal control plan must also be prepared and WorkCover notified of the works in accordance with the NSW Work Health and Safety Regulation, 2011.

3.5 PROTECTION OF MAINTENANCE PERSONNEL

This section only contains provisions relating to potential contaminants of concern. It is not intended as a full Work Health and Safety (WHS) plan for future works. The contents of this section should be incorporated into any future WHS Plan prepared for the site and enacted through SWMS documents prepared by WSPT and contractors.

3.5.1 GENERAL LEGISLATION REQUIREMENTS FOR HEALTH AND SAFETY

Any work that is carried out on the site should follow the current occupational health and safety regulations at the time (i.e. NSW Occupational Health and Safety Regulations, 2011). In particular, relevant health and safety regulations in place for asbestos, should be considered.

A list of examples of work health and safety and environment protection documents relevant to the specific risks for both sites, that should be consulted in preparation of intrusive works on each site are included in 5.1. If at any time the advice in the codes of practice or legislation conflicts with advice in this LEMP, then the advice/requirements of the code of practice or legislation prevails over this LEMP.

Table 3.2: Relevant legislation and guidance

TYPE	REGULATOR	TITLE
Legislation	Work Cover NSW	*Work Health and Safety Act, 2011* *Work Health and Safety Regulation, 2011*
	NSW EPA	*Protection of the Environment Operations Act 1997* *Contaminated Land Management Act 1997*
Guidelines	NSW EPA and WorkCover	NSW EPA 2014 *Waste Classification Guidelines Part 1: Classifying Waste*. National Environment Protection Council, 2013 *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013*. WorkCover NSW, 2014 *Managing Asbestos in or on Soil*
Codes of Practice	SafeWork Australia and WorkCover NSW	SafeWork Australia, 2011 *How to Manage Work Health and Safety Risks* SafeWork Australia, 2016 *Code of Practice - How to Manage and Control Asbestos in the Workplace* SafeWork Australia, 2016 *Code of Practice - How to Safely Remove Asbestos* SafeWork Australia, 2014 *Construction Work Code of Practice* WorkCover NSW, 2015 *Excavation work code of practice*

3.5.2 MINIMUM GENERAL CONTROLS

In its undisturbed state the site is suitable for use as a commercial industrial area. Therefore in carrying out routine site maintenance works on the surface (such as garden maintenance etc.) there is no increased risk or need for additional health or environment protection controls.

Personal protection equipment (PPE) consistent with a standard construction or maintenance requirement is considered suitable for site workers such as:

- Long sleeved shirts;
- Long pants;

- Gloves;
- Steel capped boots; and
- Eye protection (as necessary).

However, in situations where there is potential for worker exposure to asbestos containing materials, such as during excavation beneath capping layers additional controls must be in place to minimise exposure to workers. Additional recommended PPE includes:

- P2 dust mask (working with asbestos impacted fill); and
- Tyvek suit (working with asbestos impacted fill) unless otherwise directed by an occupational hygienist.

3.5.3 PERSONAL HYGIENE

During intrusive site works personnel should be briefed on the requirements for personal site hygiene as part of the site induction. As with any work where contractors and maintenance staff are accessing soil, or sediments, staff should be encouraged to avoid hand to mouth and hand to face contact until they have washed (e.g. eating, drinking and/or smoking). Wash water and soap should be available during intrusive site works.

3.5.4 LICENSED ASBESTOS REMOVAL WORK FOR EXCAVATIONS BENEATH THE CAP

Any subsurface works on the cap that penetrate the geotextile marker layer must be carried out by an appropriately licensed asbestos removal contractor. In such situations, an asbestos removal control plan must also be prepared and WorkCover notified of the works in accordance with the NSW Work Health and Safety Regulation, 2011.

4 GENERAL MANAGEMENT ACTIVITIES AND CONTROLS

The management activities and controls listed herein are generic controls intended to be employed at such times that the site requires ongoing maintenance and repair works, including minor excavation works. They are not intended for implementation during any major excavation, or major development which may occur at the site. Any major construction work should have a project specific Construction Environmental Management Plan (CEMP) prepared and implemented.

The controls relate to impacts present on the site itself to the boundaries. It does not relate to management of offsite risk.

4.1 EXCAVATION

The key risks during excavation works for the site include.

- Damage to engineered capping of asbestos impacted fill; and
- Inadvertent exposure to asbestos containing materials by excavating through capping layers.

To mitigate these risks we recommend the following:

- If excavation works are planned for the site, contractors are to familiarise themselves with this LEMP, and in particular the location and depth of the capping layers. Having reviewed the LEMP they are to prepare a work method statement demonstrating how they will ensure their staff's safety, and their methodology for reinstatement of the Site upon completion of works;
- If works involved excavation beyond the engineered capping layer then an unexpected findings protocol should be in place and referred to in the event that asbestos or other contaminants of concern are discovered;
- During excavation works in the vicinity of the capping layer, the work should be inspected by the Parklands Rangers to ensure the nominated controls in the SWMS are being adopted and that the rectification works are to similar specifications of the original design;
- Any soil removed from the site must be subject to waste classification and disposed of to a landfill that is licenced to accept the relevant waste type;
- Any fill materials exhumed at the site must be either disposed of offsite or placed back into the excavation and the surface capping restored;
- Operators should take their time and be well supervised;
- Water should be available throughout the works for moistening work areas to avoid dust generation;
- Cease work in windy conditions or if dust is being generated or if atmospheric conditions reach unsafe levels;
- Require contractors to wear appropriate PPE to protect them from dust inhalation and dermal contact with soils/sediments; and
- Ensure good site hygiene practices are maintained (no eating, drinking, smoking in the work area and provide hand wash facilities so workers can wash before having breaks).

4.2 REINSTATEMENT OF CAPPING LAYERS

Following excavations that have disturbed capping layers, the reinstatement of should include:

- Capping materials must be reinstated to their original survey levels after the completion of civil works;
- If necessary, provide updated reference levels to ensure that capping thickness requirements have been met;
- Any damage to geotextile marker layers should be repaired prior to reinstatement of the capping layer;
- If following site development the capping is unpaved, any vegetation removed during the excavation should be replaced in order to stabilise the capping material; and
- Provide photographic evidence as a record of capping reinstatement following works.

4.3 STOCKPILING OF SOIL/SEDIMENTS

With respect to stockpile formation, the key risks are as follows:

- Generation of dust that could contain asbestos fibres representing a risk to workers and recreational site patrons;
- Transport and disposal of contaminated soil to other 'clean' portions of the site;
- Washing of impacted soil into local waterways through sediment migration. This would not only represent an environmental and health concern but would also represent a commercial risk through fines or prosecution if allowed to occur;

In order to mitigate these risks we recommend the following:

- Minimise the requirement for stockpiling of soil onsite. Consider alternatives such as use of lined skip bins or drums;
- Ensure stockpiles of excavated material remain on site until testing has been conducted and a final waste classification can be provided, as to move it prematurely may trigger an offence under the Protection of the Environment Operation Act, 1997 (if material is transported offsite);
- Provide temporary fencing/barricading around stockpiles or skip bins to prevent public access;
- Stockpiles should be formed on medium-density polyethylene (MDPE) plastic sheeting to prevent vertical leaching and so that the stockpile footprints do not require validation upon removal;
- Once a stockpile is formed, the edges of the underlying MDPE should be raised up around the stockpile and pegged into place so that should a significant rainfall event occur, overland flow will be diverted around the stockpile without coming into contact with the contents;
- Stockpiles should then be covered in MDPE plastic sheeting with sufficient overlap that soil does not become exposed at the join (e.g. 0.5 m overlap);
- Plastic sheeting covering the stockpile should extend beyond the base of the stockpile so all water is shed away from the stockpile;
- Stockpiles and bins containing exhumed soil from the cells should be appropriately placarded containing the words 'Danger Asbestos'; and

- A program of daily inspections should be implemented while the stockpile is onsite to ensure the condition of the cover is maintained.

4.4 DUST SUPPRESSION

The objective of dust management is to minimise the potential for asbestos fibres to be released to the atmosphere by excavation works. Works must be conducted in a manner that mitigates dust generation.

Potential sources of dust generation at each site include:

- Minor excavation and landscaping works;
- Loading of soil on or off trucks; and
- Wind movement across stockpiled material and exposed soil areas.

In order to mitigate risk from dust generation we recommend the following:

- Undertake regular dust inspections when excavation is occurring;
- Ensure all exposed soil and any vehicle routes are regularly dampened to minimise dust generation;
- Monitor dust conditions during maintenance works where stockpiles are made, or where bare earth is exposed;
- Plan activities in light of forecast weather conditions and cease working in high wind conditions;
- A hose or other water supply should be available and used to dampen all bare earth; and
- Personnel working in areas during potential dust generating works are to wear the appropriate personal protection equipment (PPE).

4.5 SEDIMENT AND EROSION CONTROL

It is important that sediment and erosion is controlled during any excavation works. The following provides some guidance for management of sediment:

Runoff:

- Any drain in the immediate vicinity of excavation works must be blocked or barricaded and silt fencing, sandbags and/or hay bales installed to prevent offsite sediment movement to ensure compliance with the Protection of the Environment Operations Act 1997 (POEO Act), which would come into effect if pollution migrates offsite.
- Runoff water, including that due to rain, which has not been in contact with any contaminated material, is not of concern.
- Any surface water that comes into contact with contaminated soil must be collected and tested prior to disposal or discharge.

Maintenance of surrounding roads:

- During the transportation of any soil from site, care must be taken so that soil is not deposited on nearby roads.
- Haul roads out of site are to be maintained in a clean manner at all times.
- Trucks should be loaded on sealed or clean surfaces where possible and covered before leaving site.

- Contractors shall monitor the exit points from site and any evidence of soil being transported offsite on truck tyres must be investigated immediately and corrective actions implemented.

Erosion and sediment control structures:

- Stockpiled soil which is awaiting offsite disposal or reinstatement into the void should be covered as per Section 4.3.

4.6 SOIL DISPOSAL

Any soil generated at site which requires disposal should be stockpiled and subsequently classified by an appropriately qualified environmental consultant for disposal. Samples should be collected at a rate of at least one sample per 25m^3.

A qualified consultant shall prepare a waste classification letter for the receiving waste facility as per the NSW EPA, 2014 *Waste Classification Guidelines Part 1: Classifying Waste*. Once classified, the material can be disposed of only by appropriately licensed transportation contractors to an appropriately licensed facility.

At all stages appropriate documentation should be maintained including but not limited to:

- Waste classification report;
- Waste consignment documentation; and
- Landfill disposal dockets.

4.7 IMPORTED FILL

Only certified landscaping products or virgin excavated natural material (VENM) are to be used as backfill on site.

With respect to VENM, should a certificate of analysis not be available from the source site, it is recommended that an appropriate number of samples dependant on quantity) of imported fill be collected for validation purposes. As the envisaged quantities would be low WSP recommends one sample per 25m^3 per source site of homogeneous VENM to be sufficient, along with an assessment of the source site's history.

Testing should include at least the following; total petroleum hydrocarbons (TPH) benzene, toluene, ethylbenzene, and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs) organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), heavy metals and asbestos.

4.8 REPORTING

The WSPT Ranger should maintain records of subcontractor works including compliance with the LEMP and evidence of appropriate reinstatement of the capping layer (e.g. a photographic record).

Requirements in regards to the monitoring program are outlined in Section 5.

5 MONITORING AND REVIEW

5.1 OUTLINE OF THE MONITORING PROGRAM

5.1.1 ROUTINE SITE INSPECTIONS

Routine site inspections should be conducted or arranged to be conducted by the WSPT Ranger. This is to ensure that the integrity of the capping layer has not been compromised. The inspections would focus on:

- Condition of vegetation or pavement overlying the capping layer;
- If unsealed, any evidence of erosion or degradation due to other causes (e.g. burrowing animals or vehicle damage); and
- Exposure of the marker layer, indicating that the integrity of the capping layer has been compromised.

5.1.2 ADDITIONAL INSPECTIONS DURING AND FOLLOWING INTRUSIVE SITE WORKS

During any planned excavation works on site it is important that appropriate documentation pertaining to the works is reviewed and the works be inspected by the Parklands Ranger or maintenance staff. Where works will penetrate or affect the structure of capping materials, the Parklands Ranger or maintenance staff should also conduct inspections of the works in progress for compliance with the SWMS and inspection of the completed works to ensure that all structures have been appropriately re-instated.

5.1.3 ENVIRONMENTAL RECORDS

Environmental records, which will be collated by WSPT Parklands Rangers shall include the following:

- EMP distribution records;
- Training and induction records;
- Environmental incident reports;
- Environmental complaint records;
- Non-conformances and corrective and preventative action reports;
- Inspection checklists/reports (if conducted) and
- Environmental monitoring data and reports (such as waste classification results and site inspection reports).

A summary of recommended monitoring is provided in Table 5.1.

Table 5.1: Summary of monitoring requirements during scheduled inspections and future works

ISSUE	LOCATION	MONITORING PARAMETER	MONITORING FREQUENCY	PERFORMANCE CRITERIA/ OBJECTIVE	DOCUMENTATION
Integrity of the capping layer	North east of the Site, shown in Figure 3	Visual inspection of the capping layer and geotextile marker integrity where applicable Obtain updated survey levels of capping areas to maintain updated capping thickness during works directly on or adjacent to the cells	Routine inspections by Parklands Ranger or maintenance staff + During and following any scheduled works	No significant damage / erosions to the capping layers reference levels indicate sufficient capping remains in situ to provide an effective barrier	Performance checklist/report Photographic records Survey data
Asbestos beneath the geotextile and capping layer	Excavation and stockpiling of waste spoil	Excavations and stockpiles or bins are not resulting in dust generation	Daily during any intrusive works	Works in accordance with agreed WMS	Performance checklist/report
		Public are excluded from the works area			
		Asbestos waste with appropriate signage			
		Sediment migration minimised			
		No reuse of asbestos waste onsite			
		Air monitoring			Air Monitoring results
		Waste disposal – appropriate classification and waste disposal location Sample at a rate of 1/25m^3 of soil.	NSW WorkCover endorsed codes of practice for asbestos removal NSW EPA waste guidelines	WorkCover notification if licensed work. Waste classification report.	Waste tracking documentation.
Imported soil	Lot 5	Certified landscape product or otherwise test to ensure it is VENM	Sample at a rate of 1/25m^3 of soil.	NSW EPA waste guidelines	Landscape product certification or VENM verification report.
Traffic access during future work	Access roads and surrounding streets	No sediment to be spread on or offsite	Daily during any intrusive works	Works in accordance with agreed WMS	Performance checklist/report

5.2 EMP REVIEW

This section outlines the process that will be used to review this LEMP so it remains relevant and up to date.

The EMP is a dynamic document which will be reviewed regularly so that it remains in line with legislation and best practice with time, and site changes with time. A review may be called for by WSPT at any time to assess the performance of the EMP and to suggest changes. We recommend a review take place every two to three years.

6 SUMMARY OF RECOMMENDATIONS

The following is a list of recommendations contained in this report. It should be read as a summary only, for detailed background and requirements refer to the section of the relevant section of the report.

ID	RECOMMENDATION	CROSS REFERENCE
Roles and responsibilities		
1	WSPT to provide oversight and ultimate responsibility for implementation of the EMP	Section 3.1
3	Once the site is developed the Parklands Ranger will plan, implement and monitor contractor works in accordance with the EMP requirements. They will also review contractor SWMS prior to works and notify WSPT of any incidents.	Section 3.1
4	Subcontractors to prepare SWMS documentation with reference to this EMP and conduct their work in accordance with their SWMS. Subcontractors to notify their supervisor of any incidents.	Section 3.1
5	WSPT Ranger and maintenance staff to conduct routine monitoring required by the EMP to WSPT, conduct field activities in accordance with the EMP and report any and report data, recommendations and incidents to WSPT in a timely manner.	Section 3.1
Risk assessment and training		
6	All contractors to undertake a site specific risk assessment as part of their SWMS preparation.	Sections 3.1, 3.2.
8	Once the site is developed the WSPT Ranger will review contractor risk assessments and proposed works plan in accordance with Diagram 3.1.	Sections 3.1 3.2.
9	Contractors are to implement an induction process for their works to communicate risks and mitigation/control measures.	Sections 3.1 3.2.
Implementation		
10	Protection of site users by: — Fencing off work areas involving excavations through the cap; — Covering stockpiles and controlling dust and sediment; — Reinstating the cap upon completion; — Air monitoring for asbestos during excavation work beneath the cap; — Appropriate signage of stockpiles and works areas (“Danger Asbestos”);	Section 3.3
11	Protection of maintenance personnel by: — Abiding by any relevant Work Health and Safety and legislation in force. — Minimum PPE of long sleeves and pants, gloves, steel cap boots and eye protection. — If penetrating the cap PPE to increase to P2 dust mask and Tyvek suite. — Staff to adopt good personal hygiene (no eating, drinking or smoking on the worksite).	Section 3.5

ID	RECOMMENDATION	CROSS REFERENCE
	— Excavation work beneath the cap to be carried out by licenced asbestos removal contractors. — Air monitoring for asbestos fibres for any work conducted beneath the cap.	
12	Protection of the environment by: — Protecting the mitigation measures during all maintenance/excavation works; — Air monitoring (asbestos) during all excavation works beneath the cap; — Ensuring dust and sediment are controlled during all excavation/stockpiling works; — Keep haul roads clean and cover loads appropriately; — Waste classification of all spoil to be disposed offsite. Disposal to licenced facilities with records maintained; and — Only import VENM as backfill material, if necessary provide validation results.	Section 4
Monitoring requirements		
13	WSPT Ranger to carry out the monitoring (site inspections) in accordance with the EMP and advise WSPT of any recommendations.	Section 5.1
14	WSPT Ranger to ensure that during contractor works there is appropriate asbestos air monitoring for excavations beneath the cap; WSPT Ranger to implement a program of routine site inspections to assess condition of capping layers; and Further inspections to be carried out during and following any intrusive maintenance works on the site.	Sections 3.4, 5.1
Review		
15	WSPT to maintain records of the activities onsite and monitoring results. WSPT to coordinate EMP review as needed to ensure the EMP is kept up to date.	Section 5.1.3, 5.2

7 LIMITATIONS

Scope of services

This validation report (the report) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and WSP (scope of services). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

Reliance on data

In preparing the report, WSP has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the report (the data). Except as otherwise stated in the report, WSP has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. WSP will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP

There is no instrument which can detect asbestos

The presence of asbestos must be determined visually or by laboratory analysis. There is no instrument currently available for the purpose of screening for asbestos. Thus, any restrictions on the amount of sampling will reduce confidence in the asbestos inspection findings.

The consequence of this is that asbestos which cannot be seen will not be found.

Reliance on asbestos inspections and clearances

The client must not rely upon an inspection or report as indicating that a site is “asbestos free” (or that such asbestos as was reported to have been found is the only asbestos at the site). All that the report can be relied upon to show is that no asbestos was found (or that such asbestos as was identified exists at the location where it was reported to have been found) in the course of the inspection. The findings of the report must be considered together with the specific scope and limitations of the type of inspection undertaken.

Environmental conclusions

In accordance with the scope of services, WSP has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

On all sites, varying degrees of non-uniformity of the vertical and horizontal soil or groundwater conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of soil and/or groundwater conditions encountered. The conclusions are based upon the data and the environmental field monitoring and/or testing and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Also, it should be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for benefit of client

The report has been prepared for the benefit of the client and no other party. WSP assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of WSP or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

Other limitations

WSP will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to or ownership of the properties, buildings and structures referred to in the report nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

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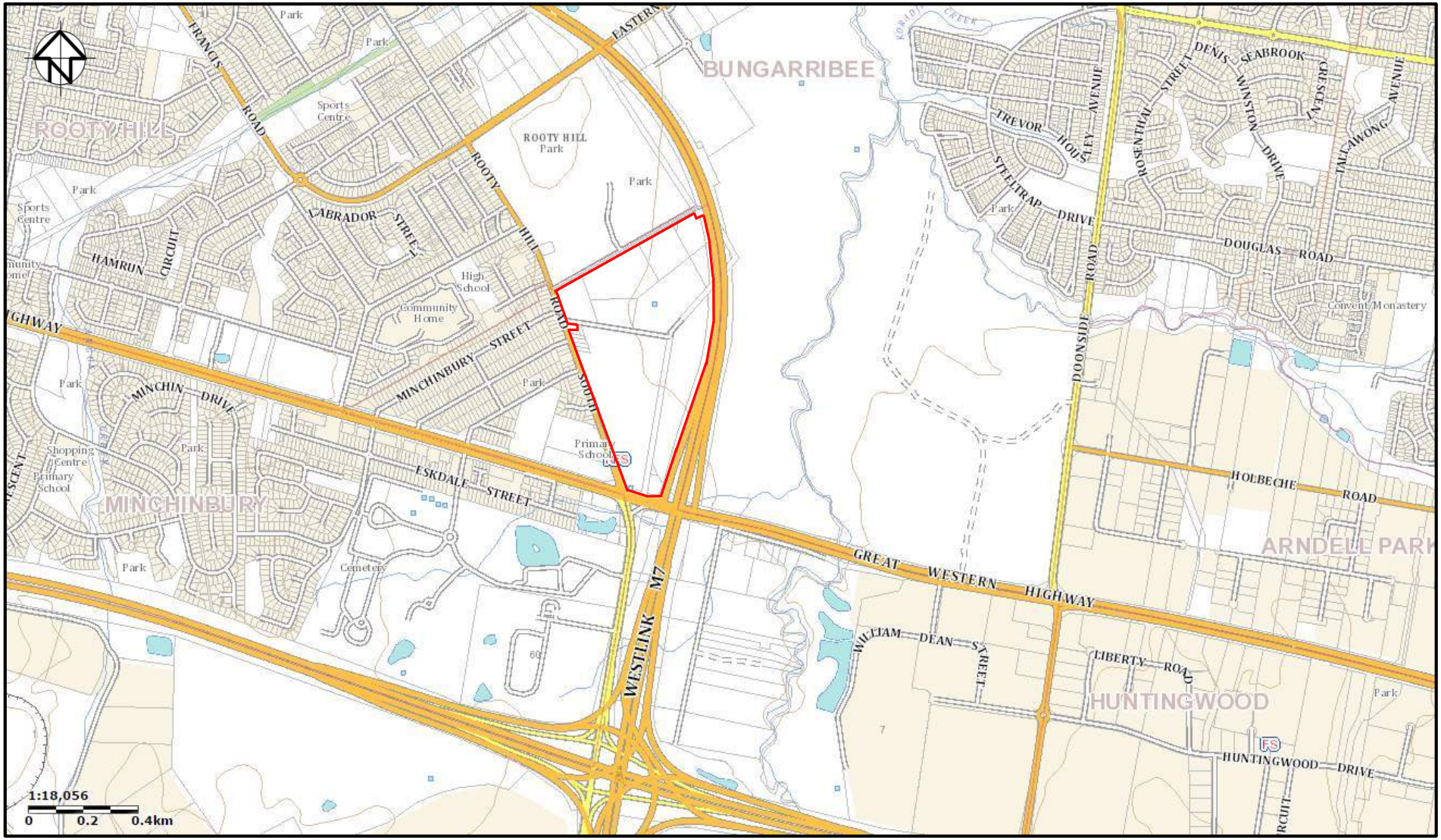
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APPENDIX A

FIGURES

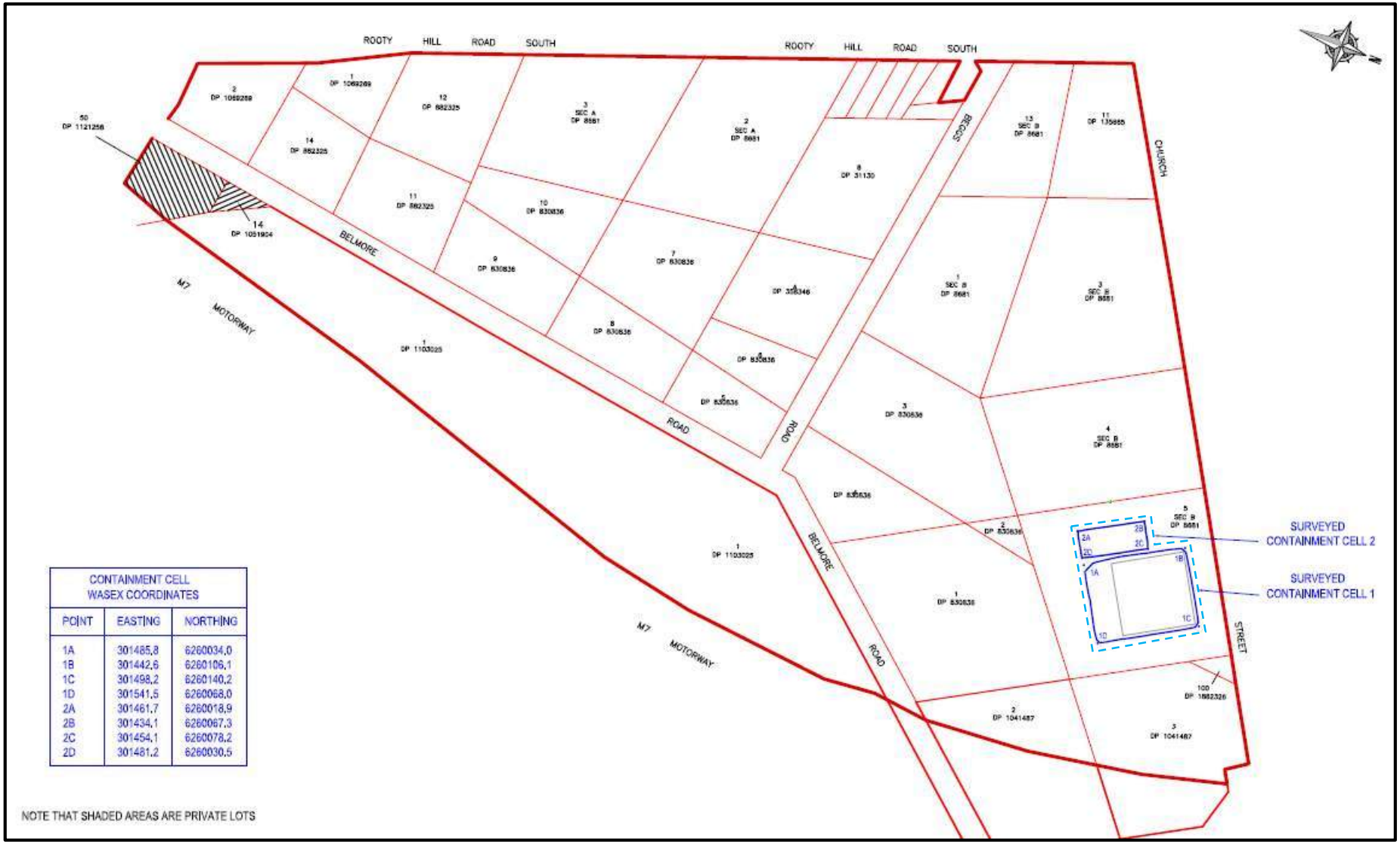


Base Map Source – Six Maps, 2017

LEGEND

Site boundary

Figure 1 – Site Location Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW



CONTAINMENT CELL WASEX COORDINATES		
POINT	EASTING	NORTHING
1A	301485.8	6260034.0
1B	301442.6	6260106.1
1C	301498.2	6260140.2
1D	301541.5	6260068.0
2A	301461.7	6260018.9
2B	301434.1	6260067.3
2C	301454.1	6260078.2
2D	301481.2	6260030.5

Base Map Source – Total Survey Solutions, containment Cell Overlayed With Buildings, Plan No. 1014, 2017

LEGEND

Site boundary

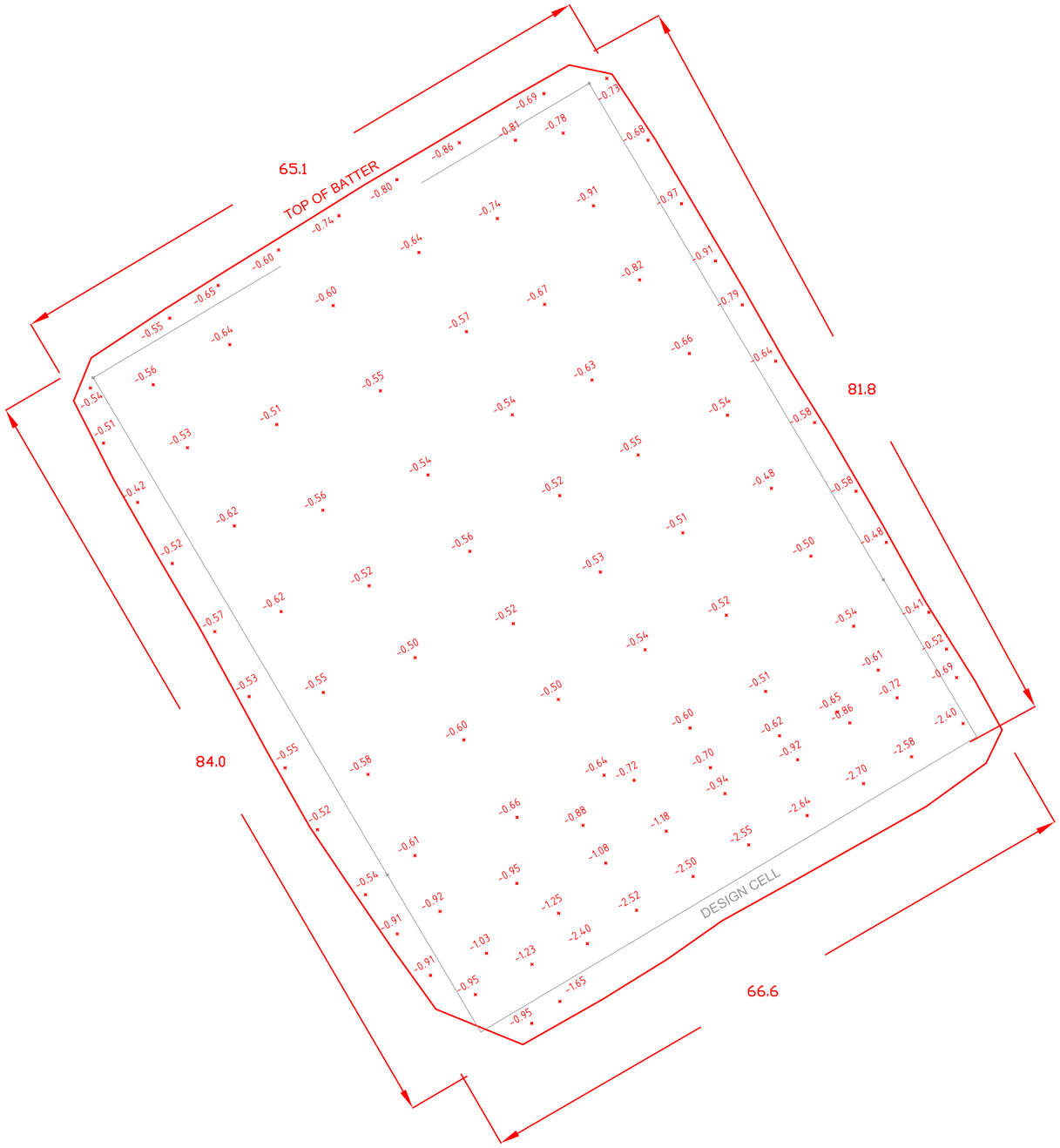
Area This EMP relates to

Figure 2 – Site Plan
Eastern Creek Business Hub,
Beggs Road, Rooty Hill, NSW

APPENDIX B

CELL SURVEY

PLAN VIEW



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

VOLUME OF EXCAVATED MATERIAL TO GROUND LEVEL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-11350.699
Total fill	0.000
Total balance	-11350.699

ie excess of cut over fill 11350.699m3

VOLUME OF EXCAVATED MATERIAL TO CAPPING LAYER

Volumes from tin "tin Exist Ground Level down 200" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-10230.285
Total fill	0.000
Total balance	-10230.285

ie excess of cut over fill 10230.285m3

VOLUME OF FILLED MATERIAL

Volumes from tin "tin Surveyed Cell Floor Pick Up Extension 170508" to tin "tin Surveyed Cell Fill Material 170522 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	- 0.000
Total fill	7210.464
Total balance	- 0.000

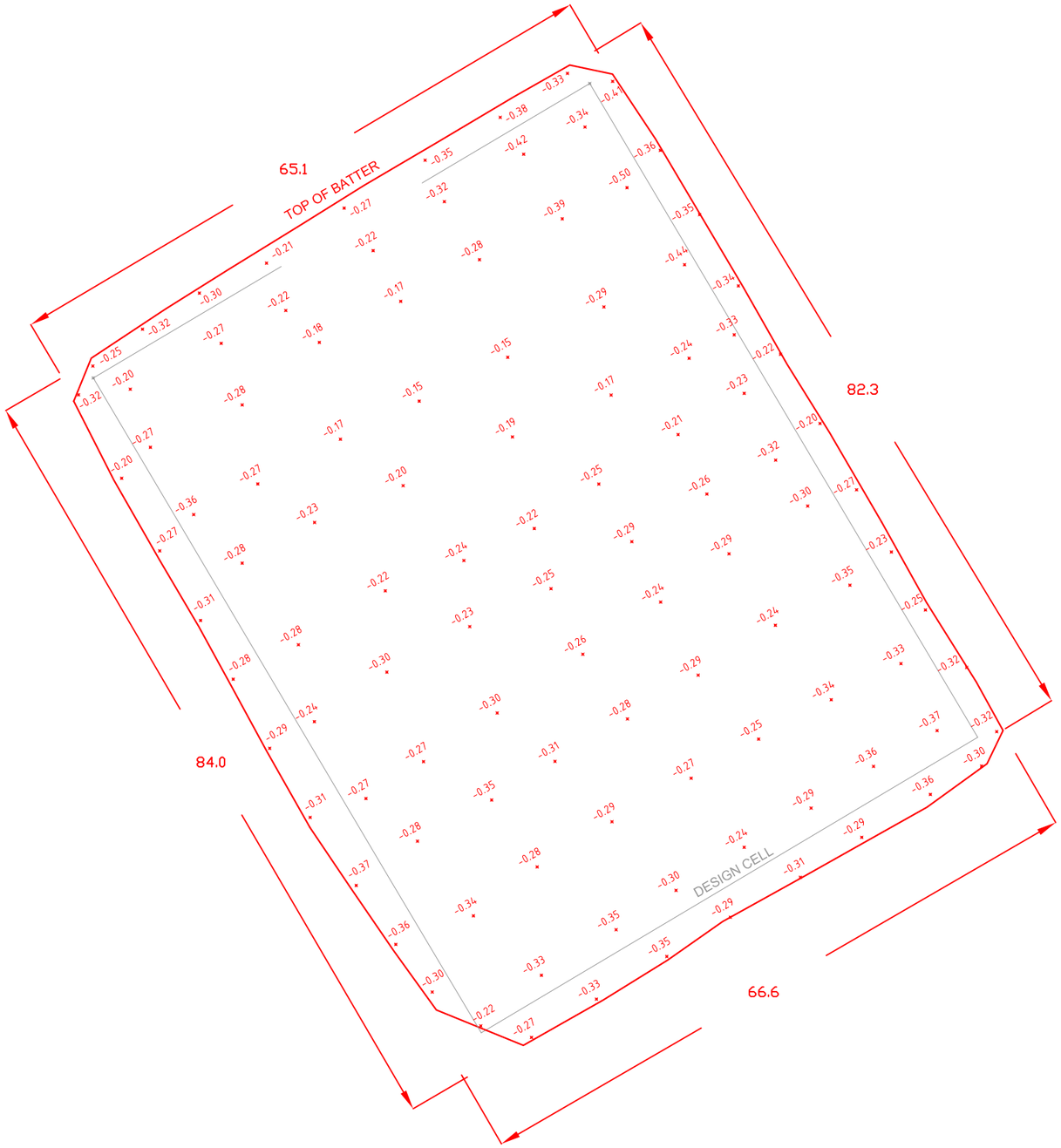
ie excess of fill over cut 7210.464m3

TOTAL SURVEYING SOLUTIONS
SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570
Ph. (02) 4655 4035 Fax. (02) 46 55 7094 Email: tss@totalsurveying.com.au

NOTE:
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DRAWING: Volume of Material in Containment Cell	JOB No.: 170069	LGA:
	PLAN No.: 1010	DATUM: N/A
CLIENT: EnviroPacific	DATE: 22/05/17	SCALE: NTS
PROJECT: Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS: Church St, Rooty Hill	CHK:	SHEET :1 OF 1

PLAN VIEW



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

VOLUME OF EXCAVATED MATERIAL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Cell Floor Pick Up Extension 170508 - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-11350.699
Total fill	0.000
Total balance	-11350.699
ie excess of cut over fill	11350.699m3

VOLUME OF FILLED MATERIAL

Volumes from tin "tin Surveyed Cell Floor Pick Up Extension 170508" to tin "tin Surveyed Cell Fill Material 170602 - (with no plan polygon)

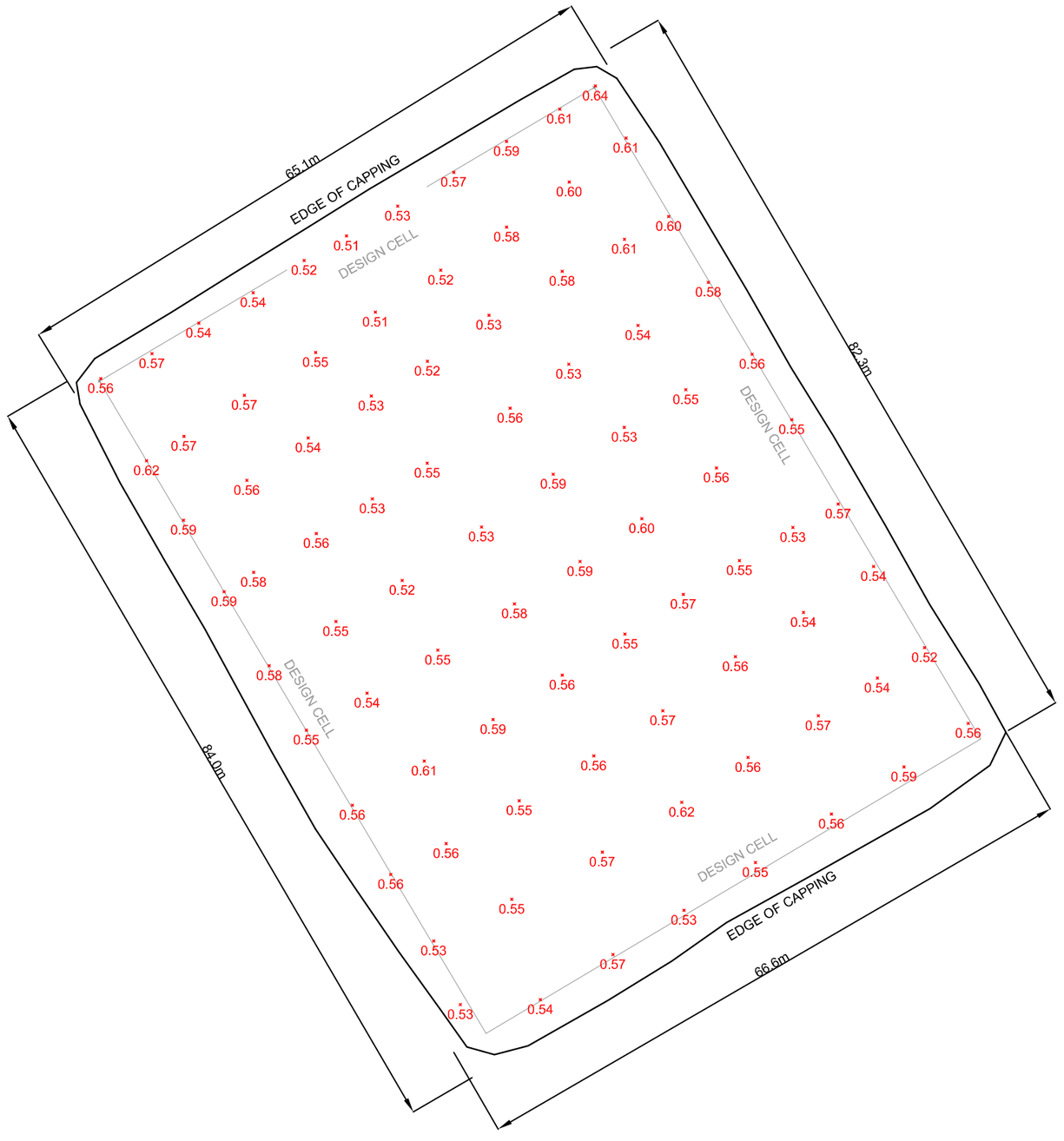
cut volumes are negative
fill volumes are positive

Total cut	- 0.000
Total fill	9813.612
Total balance	- 0.000
ie excess of fill over cut	9813.612m3

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DRAWING: Volume of Material in Containment Cell		JOB No.: 170069	LGA:
		PLAN No.: 1011	DATUM: N/A
CLIENT:	EnviroPacific	DATE: 02/06/17	SCALE: NTS
PROJECT:	Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS:	Church St, Rooty Hill	CHK:	SHEET :1 OF 1



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF SURVEYED FILL TO EXISTING GROUND LEVEL

TOTAL SURVEYING SOLUTIONS

SUITE 5 / 21 ELIZABETH STREET, CAMDEN NSW 2570

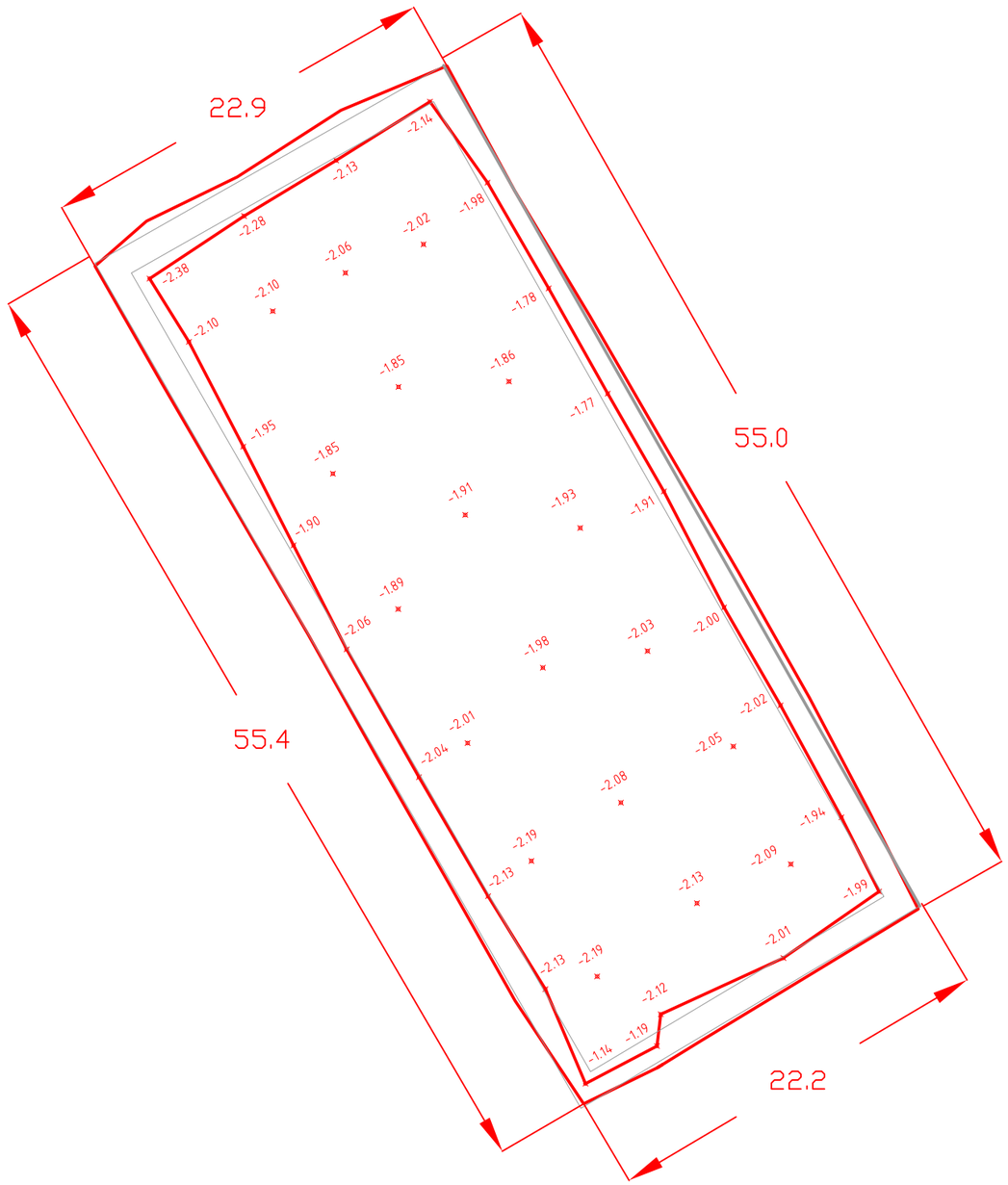
Ph. (02) 4655 4035 Fax. (02) 46 55 7094 Email: tss@totalsurveying.com.au

NOTE:

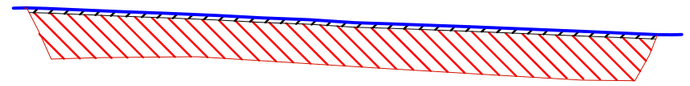
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DRAWING: CELL ONE CAPPING CONFORMANCE	JOB No.: 170069	LGA:
	PLAN No.: 1016	DATUM: N/A
CLIENT: ENVIROPACIFIC	DATE: 27/06/17	SCALE: NTS
PROJECT: ROOTY HILL	DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH STREET, ROOTY HILL	CHK:	SHEET :1 OF 1

PLAN VIEW



SECTION VIEW



Existing Ground Level
Surveyed Excavated Cell
Top of Capping Material
Capping Material
Asbestos Imported Soils

Note: Capping material has minimum 0.200m thickness above Asbestos Imported Soils.
Asbestos Imported Soils volume of 2,011m3 leaves Top of Capping Material 0.200m Below Existing Ground Level.

VOLUME OF EXCAVATED MATERIAL

Volumes from tin "tin Exist Ground Level" to tin "tin Surveyed Second Cell Floor Pick Up 170606" - (with no plan polygon)

cut volumes are negative
fill volumes are positive

Total cut	-2259.616
Total fill	0.000
Total balance	-2259.616
ie excess of cut over fill	2259.616

TOTAL SURVEYING SOLUTIONS
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DRAWING: Containment Cell Volume of Material Removed	JOB No.: 170069	LGA:
	PLAN No.: 1006A	DATUM: N/A
CLIENT: EnviroPacific	DATE: 09/03/17	SCALE: NTS
PROJECT: Rooty Hill	DRAWN: JH	CONT. INTERVAL: NA
ADDRESS: Church St, Rooty Hill	CHK:	SHEET :1 OF 1



RED VALUE ABOVE SHOWS DISTANCE FROM TOP OF IMPORTED FILL TO TOP OF CAPPING LAYER

TOTAL SURVEYING SOLUTIONS

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DRAWING: CELL TWO CAPPING CONFORMANCE		JOB No.: 170069	LGA:
		PLAN No.: 1019	DATUM: N/A
CLIENT: ENVIROPACIFIC		DATE: 03/07/17	SCALE: NTS
PROJECT: ROOTY HILL		DRAWN: JP	CONT. INTERVAL: NA
ADDRESS: CHURCH STREET, ROOTY HILL		CHK:	SHEET :1 OF 1

APPENDIX C

PHOTOGRAPHS

	
Photo 1: Friable asbestos identified in the northern portion of the Site	Photo 2: Asbestos pipe identified in the northern portion of the Site
	
Photo 3: Bonded asbestos identified in the western portion of the Site	Photo 4: Bonded asbestos identified in the northern portion of the Site



Photo 1: Geofabric marker layer over Cell 1



Photo 2: Geofabric Marker layer over Cell 1



Photo 3: Capping layer over Cell 1



Photo 4: Capping layer over Cell 1

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A	Rita Sirianni Andrew Lau	Andrew Lau	Draft for Client Review		11/08/2017

