# Universal Property Group Pty Ltd



Detailed Site Investigation: South Werrington Urban Village Precinct, Lot 102 DP1140594, 16 Chapman Street, Werrington NSW

P1504996JR01V01 October 2015



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### **Head Office**

Suite 201, 20 George Street Hornsby, NSW 2077, Australia ACN 070 240 890 ABN 85 070 240 890 **Phone: +61-2-9476-9999** 

Fax: +61-2-9476-8767 Email: mail@martens.com.au Web: www.martens.com.au

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# 1 Introduction

#### 1.1 Overview

This report prepared by Martens and Associates (MA), for Universal Property Group Pty Ltd documents a Detailed Site Investigation (DSI) completed for 16 Chapman Street, Werrington, NSW (the site).

A Preliminary Environmental Site Assessment (PESA) was previously completed by Douglas Partners (DP, 2014a) and should be read in conjunction with this report.

# 1.2 Objectives

The objective of this report is to assess the potential sources of site contamination identified in the PESA (DP, 2014) and determine site suitability for redevelopment which includes residential land use.

### 1.3 Scope of Works

The scope of works includes:

- Intrusive soil investigation and soil sampling for laboratory analysis of potential areas of environmental concern as identified by DP (2014a).
- Preparation of a report in general accordance with the relevant sections of ASC NEPM (1999, amended 2013), NSW OEH (2011) and DEC (2006).

### 1.4 Reference Guidelines

This assessment is prepared in general accordance with the following guidelines:

- NSW OEH (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.
- NSW DEC (2006) 2<sup>nd</sup> Ed. Contaminated Sites: Guidelines for the NSW Site Auditor Scheme.
- o ASC NEPC (1999, amended 2013) National Environmental Protection Measure, (NEPM 1999, amended 2013).



#### 1.5 Abbreviations

ASC NEPM – Assessment of site contamination (National Environmental Protection Measure)

AEC - Area of environmental concern

ACM – Asbestos containing material

BTEX - Benzene, toluene, ethyl benzene, xylene

BGL - Below ground level

COPC - Chemical of primary concern

CMP – Construction management plan

CSM - Conceptual site model

DEC – NSW Department of Environment and Conservation

DP – Deposited Plan / Douglas Partners

EIL - Ecological investigation level

ESL – Ecological screening level

EPA – NSW Environmental Protection Authority

ESA – Environmental site assessment

HM – Heavy metals

LOR - Limit of reporting

LGA - Local government area

MA – Martens and Associates Pty Ltd

NATA – National Association of Testing Authorities

OCP - Organochloride pesticides

OEH – NSW Office of Environment and Heritage

OPP - Organophosphate pesticides

PAH – Polycyclic aromatic hydrocarbons



PCB - Polychlorinated biphenyl

RPD – Relative percentage difference – difference between two values divided by the average

SAC – Site acceptance criteria

SOP – Standard operating procedure

TPH – Total petroleum hydrocarbons

UST – Underground storage tank



# 2 Site Background Information

# 2.1 Location and Setting

Site information is summarised in Table 1.

**Table 1:** Site background information.

| Item                        | Description/Detail   |  |  |
|-----------------------------|--|--|--|
| Site address                | 16 Chapman Street, Werrington NSW.   |  |  |
| Lot/DP                      | Lot 102 DP 114059.   |  |  |
| Site area                   | Approximately 28 ha.   |  |  |
| Existing site development   | No major existing structures.  A small corrugated iron shed is located towards the centre of the site which appears to have been used as an amenities building (with a composting toilet).   |  |  |
| Aspect                      | Site generally slopes towards the south east with the eastern portion of the site sloes to the north / north east.   |  |  |
| Typical slopes              | Generally slopes between 0 – 15%.  |  |  |
| Existing vegetation         | Generally cleared with low lying grasses and mature bushes. Scattered mature trees located near the centre of the site.  |  |  |
| Neighbouring environments   | The surrounding land use includes:  North: Western railway line and low density residential land use.  East: Low density residential development and vacant former commercial site.  South: Cobham Junvenile Justice Centre.  West: University of Western Sydney (Kingswood Campus). |  |  |
| Local Government Area (LGA) | Penrith City Council.  |  |  |
| Drainage                    | Site drainage The site generally drains via overland flow to the south east / east portions to a large concrete pipe / culvert which leaves the site under to the north under Landers Street and eventually discharges in to South Creek.  |  |  |



| Item                        | Description/Detail  |
|-----------------------------|---|
| Geology and soil landscapes | The Penrith 1:100,000 Geological Series Sheet 9030 (1991) indicates that the site is underlain by Wianamatta Group of Bringelly Shale consisting of carbonaceous claystone.   |
|                             | The Reference to the Penrith 1:100,000 Soil Landscapes Sheet indicates that the northern part of the site is located within the erosional Luddenham soil landscape. This landscape is characterised by shallow (<100 cm) dark podzolic soils or massive earthy clays on crests; moderately deep (70-150 cm) red podzolic soils on upper slopes. |
| Environmental receptors     | South Creek (350 m to the east).  |
| Human receptors             | Existing surrounding residential developments.  Future residents and site workers/ builders.  |

# 2.2 Hydrogeology

Review of NSW Natural Resources Atlas indicated three groundwater bores (with available information) within approximately 1 km of the site. All three bores were recorded as monitoring bores and were all located up gradient of the site. Limited information regarding standing water level was available at the time of preparing this report. Further assessment would be required to characterise site hydrogeology.



# 3 Preliminary Conceptual Site Model

#### 3.1 Overview

The preliminary conceptual site model (CSM) has been developed based on information documented in the PESA (DP, 2014a) and the Geotechnical Assessment (DP, 2014b) which included subsurface investigation.

# 3.2 Summary of Previous Investigations.

- o Historic aerials indicate the site has remained generally undeveloped since 1943. There is some evidence of broad acre farming with evidence of ploughing and or crop lines evident along the eastern and western boundaries in the 1961 aerial. No evidence of large onsite development was found on any reviewed aerial.
- A search of the NSW EPA Record of Notices for Contaminated Land was conducted which found no notice for the site.
- A site walkover conducted on 17 December 2013 by Douglas Partners confirmed a generally vacant site with only a small corrugated iron shed located towards the centre of the site which appears to have been used as an amenities building (with a composting toilet).
- The geotechnical assessment (DP, 2014b) undertook subsurface site testing via 50 test pits excavated across the site. Fill material was identified in several testing locations, predominantly in the eastern portion of the site.

The PESA (DP, 2014a) identified two areas of environmental concern (AEC) and associated chemicals of primary concern (COPC) which are summarised in Table 2.



Table 2: AEC and COPC 16 Chapman Street, Werrington, NSW

| AEC                   | Potential for Contamination   | COPC   | Contamination<br>Likelihood |
|-----------------------|---|--|-----------------------------|
| A - Areas of filling  | Fill from unknown origins.  | TPH / BTEX, PAH, HM,<br>OCP/OPP, phenols<br>and asbestos | Medium - high               |
| B – Composting toilet | Unknown historical use. Unknown construction methodology of toilet. | Faecal coliforms, E.coli<br>and salmonella               | Low                         |

## 3.3 Sensitive Receptors and Exposure Pathways

Table 3 provides a summary of identified sensitive receptors and potential exposure pathways connecting receptors to identified AEC / COPC outlined in Table 2 as presented in the PESA (DP, 2014a).

Table 3: Summary of receptors and potential pathways.

| Pathway   |
|---|
|   |
| o Dermal contact.   |
| <ul> <li>Ingestion of potentially contaminated</li> </ul> |
| soil.   |
| o Inhalation of airborne contaminants.                    |
| o Migration of pollutants via site surface                |
| and groundwater.  |
|   |
| o Migration of pollutants via site surface                |
| and groundwater.  |
| <ul> <li>Direct contact with site flora.</li> </ul>       |
|   |
|   |
|   |

### 3.4 PESA Recommendation

The PESA recommended a targeted intrusive soil investigation to quantify and characters potential contamination risk identified in the CSM.

Testing was recommended in areas of potential site filling and, following removal of the existing site shed, near the former composting toilet. It is noted that the current investigation was not able to target the compost



toilet area as the shed and toilet have not yet been removed. It is proposed that, following site clearing works and removal of waste from the pit, subsurface sampling be completed in this area and the results provided as an addendum to this report.

Additional testing was recommended outside of the AEC to confirm the low risk status of the site.



# 4 Field and Laboratory Investigations

# 4.1 Field Programme overview

Referencing the preliminary CSM (Section 3), a soil investigation program was planned to investigate the areas of potential site filling. Information from previous subsurface investigation in the geotechnical assessment (DP, 2014b) was used to target site areas associated with filling. Based on test pit logs (DP 2014b), subsurface testing was primarily focused in the eastern portion of the site.

While not directly addressed as an AEC in the PESA, there was some evidence, based on the historic aerials, to suggest previous agricultural land use. To address this concern, shallow (0.1 mBGL) surface samples were collected from across the site in a grid pattern and assessed for heavy metal and pesticide contaminants.

## 4.2 Investigation Constraints

As noted in Section 3.4, the existing site shed and composting toilet were intact during the investigation and testing could not be completed. To fully address data gaps in the CSM, further soil investigation is required following demolition of the shed.

# 4.3 Intrusive Investigation Methodology

An overview of site investigation methodology is provided in Table 4.

**Table 4:** Investigation methodology.

| Investigation dates       | 7 October 2015.  |
|---------------------------|--|
| Number of sampling points | 36 surface samples in grid pattern across the site. 12 test pits.                                      |
| Investigation method      | Testpits were excavated using a 5 tonne excavator. Surface samples collected using a small hand spade. |

# 4.4 Sampling Methodology and Quality Assurance / Quality Control

Soil sampling methodology (Table 5) was completed to meet data quality objectives.



Table 5: Soil sampling methodology.

| Activity                              | Detail / Comments   |
|---------------------------------------|---|
| Soil Sampling                         | Soil sampling was completed by an experienced MA environmental engineer.  Each sample was placed into a laboratory-supplied, acid-rinsed 250mL glass jar, labelled with a unique identification number and no headspace to limit volatile loss. A clean pair of disposable gloves was used when handling each sample.   |
|                                       |   |
| Sample Compositing                    | Surface samples collected from across the site were combined to form 12 triple composite samples. Sample compositing was completed by Envirolab Pty Ltd a NATA accredited laboratory at the direction of MA.  |
| QA / QC Sampling                      | Duplicate samples were collected at a rate of approximately 1 in 10 samples for intra-laboratory analysis.  |
| Sample handling and transportation    | Sample collection, storage and transport were conducted according to Martens and Associates SOP.  Collected samples were placed into an ice chilled cooler-box.  Samples were dispatched to NATA-accredited laboratory under chain of custody documentation within holding times.   |
| Decontamination of sampling equipment | Surface sampling equipment (hand spade) was decontaminated between sampling locations by pressurised water spray with a solution of Decon-90 <sup>TM</sup> , a phosphate-free detergent, followed by rinsing with potable water.  Test pit samples were collected directly from the centre of the excavator bucket and a clean pair of disposable gloves were used between each sample collected. |

A review of QA/QC procedure has been completed and is presented in the data validation report (Attachment D). The report concludes that data is suitable for the purposes of the assessment.

# 4.5 Data Quality Objectives (DQO)

Data quality objectives (DQO) have been prepared as statements specifying qualitative and quantitative data required to support project decisions. Data quality indicators (DQI) are presented in the following sections, outlining procedures to achieve DQO for site works. DQO have been prepared in general accordance with NSW DEC (2006) and US EPA (1994) guidelines and are presented in Table 6.



**Table 6:** Data quality objectives for the assessment of soil investigations.

| Table 0. Dala qu  | objectives for the assessifier of soft investigations.  |  |  |
|---|---|--|--|
| Step 1<br>Stating the<br>Problem  | The proposed site development will include residential land use. Therefore the site must be deemed suitable to accommodate residential use (residential with minimal soil access). This DSI is required to assess risk posed by potentially contaminated soil to onsite and offsite sensitive receptors.  |  |  |
| Step 2<br>Identifying the<br>Decision(s)  | Previous suite investigation have identified AECs which may be the source of potential contamination. To assess the suitability of the site for future residential use, decisions are to be made based on the following questions:  o Is site soil quality suitable for the intended residential land use?  o Do site soils require remediation or management to prior to onsite residential land use?  |  |  |
| Step 3<br>Identification<br>of Inputs to the<br>Decision  | The inputs to the assessment of site soil quality will include:  Soil sampling at nominated locations (where access is available) across the site.  Laboratory analytical results for relevant COPC.  Assessment of the suitability of the data obtained from sampling an analyses as measured against DQIs.  Assessment of analytical results against site suitable human health criteria.   |  |  |
| Step 4<br>Study<br>Boundary<br>Definitions  | Study boundaries are as follows:  o Lateral – Lateral boundary of the assessment is defined by the site boundary as indicated in Figure 1 (Attachment A).  o Vertical – Vertical boundary will be governed by the maximum depth reached during subsurface investigations.  It is noted that assessment of site groundwater and soil vapours is outside of the scope of this assessment.   |  |  |
| Step 5 Development of Decision Rules  | The decision rule for this for this investigation area as follows:  If the concentration of contaminants in the soils exceeds the adopted assessment criteria; an assessment of the need to further investigate, remediate and or manage the onsite impacts in relation to the proposed development will be undertaken.   |  |  |
| Specification of<br>Limits on<br>Decision Errors  | Guidance found in ASC NEPM (1999 amended 2013) Schedule B2 regarding 95% upper confidence limit (UCL) states that the 95% UCL of the arithmetic mean provides a 95% confidence level that the true population mean will be less than or equal to this value. Therefore a decision can be made based on a probability that 95% of the data collected will satisfy the site acceptance criteria. A limit on decision error will be 5% that a conclusive statement may be incorrect. |  |  |
| Step 7  Optimisation of Sampling Design  Proposed sampling locations are based on completed Stage 1 investigation of concern. The above achieved by utilisation of MA SOP to achieve DQO. |   |  |  |

# 4.6 Laboratory Analytical Suite

Laboratory analysis was carried out by Envirolab Pty Ltd a NATA accredited laboratory. Laboratory analytical documentation is presented in Attachment C.



**Table 7:** Summary of primary soil laboratory analyses.

| coc                       | Number of Samples Analysed               |
|---------------------------|--|
| BTEX                      | 8  |
| TRH                       | 8  |
| PAH                       | 8  |
| PCB                       | 8  |
| Asbestos in soil          | 8  |
| Heavy metals <sup>1</sup> | 36 in 12 triple composites<br>8 discrete |
| OCP/OPP                   | 36 in 12 triple composites<br>8 discrete |

#### Notes



<sup>&</sup>lt;sup>1</sup> Heavy metals – arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc.

# 5 Assessment Criteria

### 5.1 Overview

The site assessment criteria (SAC) adopted for this DSI has been derived from the following sources:

o ASC NEPM (1999, amended 2013) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM).

Guideline values for individual contaminants are presented in laboratory tables in Attachment B.

Table 7 summarises the applicability of the SAC adopted for this investigation.

**Table 8**: Summary of SAC.

| SAC  | Applicability   |
|--|---|
| Health investigation levels (HIL)                        | Based on the proposed residential site use, HIL – A<br>Residential with soil access (ASC NEPM 1999, amended<br>2013) have been adopted.                                     |
| Health screening levels (HSL) for petroleum hydrocarbons | HSLs A – low density residential for clay (ASC NEPM 1999, amended 2013) have been adopted. Clay has been selected based on encountered lithology at the site.               |
|  | Soil HSL provide a preliminary assessment of human risk via inhalation of vapours from potential contamination. For this purpose HSL A criteria are considered appropriate. |
| TPH Management Limits                                    | Residential land use TPH Management limits have been adopted from ASC NEPM (1999, amended 2013).  |



| SAC                                  | Applicability  |
|--------------------------------------|--|
| Ecological assessment criteria (EAS) | A preliminary assessment of ecological risk has been undertaken with reference to ecological screening levels (ESL) and ecological investigation levels (Els.).  |
|                                      | Ecological assessment criteria applies principally to the top 2m of soil.  |
|                                      | <u>ESLs</u>  |
|                                      | ESLs for fine grained soils in urban residential and open spaces (ASC NEPM 1999, amended 2013) have been adopted based on site lithology.  |
|                                      | <u>Eils</u>  |
|                                      | EILS have been calculated using methodology outlined in ASC NEPM (1999, amended 2013(.   |
|                                      | The most conservative added contaminant levels have been used to develop site ElLs as no physiochemical properties of site soils have been measured. Ambient background concentrations (ABC) have been taken from Olszowy et al (1995) for aged contamination in low traffic areas in NSW. |
| Asbestos in soil / material          | Based on the preliminary nature of this assessment the 'presence/absence' of asbestos in soil / material has been adopted as the SAC.  |



# 6 Results

### **6.1** Field Observations

# 6.1.1 Lithology

A summary of lithology observations compiled during intrusive investigation is presented in Table 9. Detailed test pit logs are presented in Attachment E.

**Table 9:** Summary of site lithology.

| Lithology 1  | Depth Range (mBGL) <sup>2</sup> |
|--|---------------------------------|
| FILL - Generally consisting of silty clays and clay. Anthropogenic inclusions observed included: pieces of tile, glass, concrete and plastics. | 0.0 – 1.1 (variable)            |
| SILTY CLAY / CLAY – Low to medium plasticity, light brown/ brown / grey.   | 0.0 – 1.4 (variable)            |
| SHALE – Assumed low strength, grey / light brown.  | >1.4 (variable)                 |

#### Notes:

# 6.1.2 Visual and Olfactory Evidence of Contamination

Visual or olfactory evidence of gross contamination was not identified during intrusive investigations.



<sup>&</sup>lt;sup>1</sup> See test pit logs for detailed material description.

<sup>&</sup>lt;sup>2</sup> Indicative depth range. Material depth may vary across a site depending on site and local geological conditions, and degree of filling.

# 6.2 Laboratory Analytical Results

### 6.2.1 Test Pit Samples

Comparison of test pit sample results with the relevant SAC is available in the laboratory tables in Attachment B. A summary of results is presented in Table 9.

**Table 10:** Summary of soil laboratory results.

| Analyte          | Results Compared to SAC  |
|------------------|--|
| Heavy Metals     | HILS All results below SAC. EIL All results below SAC.             |
| TPH/BTEX         | HSL All results below SAC. ESL All results below SAC.              |
| OCP/OPP          | HILS All results below SAC.  |
| РСВ              | HILS All results below SAC.  |
| PAH              | HILS All results below SAC. ESL All results below SAC.             |
| Asbestos in soil | All soil samples reported negative for asbestos in soil detection. |

# 6.2.2 Soil Analytical Results for Broad Site Grid Samples

All triple composite samples from broader site grid sampling, reported values below the adopted SAC for OC/OP pesticides and heavy metals.



# 7 Discussion, Recommendations and Conclusion

### 7.1 Site Contamination

A subsurface investigation has been completed by MA targeting areas of site filling identified in the PESA (DP, 2014a). Additional surface samples were collected from across the site to address potential historic agricultural land use. Results of soil sampling found no contaminant level above SAC.

### 7.2 Recommendation

Based on the large site area, there remains a risk that as yet uncovered fill material, which contains contaminant levels above the adopted SAC, shall be discovered during site works. It is therefore recommended that an unexpected finds protocol be developed for the site and implemented as part of a construction management plan (CMP). The unexpected finds protocol should outline all procedures associated with the discovery of any new potentially contaminated material

As noted in Section 3.4, access beneath the existing site shed and composting toilet was not available during this investigation. It is recommended that following the removal of the shed and waste material within the pit, validation testing be conducted which shall include sampling for pathogens as per DP (2014a).

### 7.3 Conclusion

Based on site testing to date, site contamination which would impact the proposed development has not been identified. Therefore following the completion of the above recommendations the site shall be deemed fit for the proposed residential development.



# 8 Limitations

This Stage 2 contamination assessment was undertaken in accordance with current industry standards.

It is important to note that no land contamination study can be considered to be a complete and exhaustive characterisation of a site nor can it be guaranteed that any assessment shall identify and characterise all areas of potential contamination or all past potentially contaminating land-uses. This is particularly the case where site filling has been identified. Therefore, this report should not be read as a guarantee that no contamination shall be found on the site. Should material be exposed in future which appears to be contaminated, additional testing may be required to determine the implications for the site.

Martens & Associates Pty Ltd has undertaken this assessment for the purposes of assessing potential site contamination. No reliance on this report should be made for any other investigation or proposal. Martens & Associates accepts no responsibility, and provides no guarantee regarding the characteristics of areas of the site not specifically studied in this investigation.



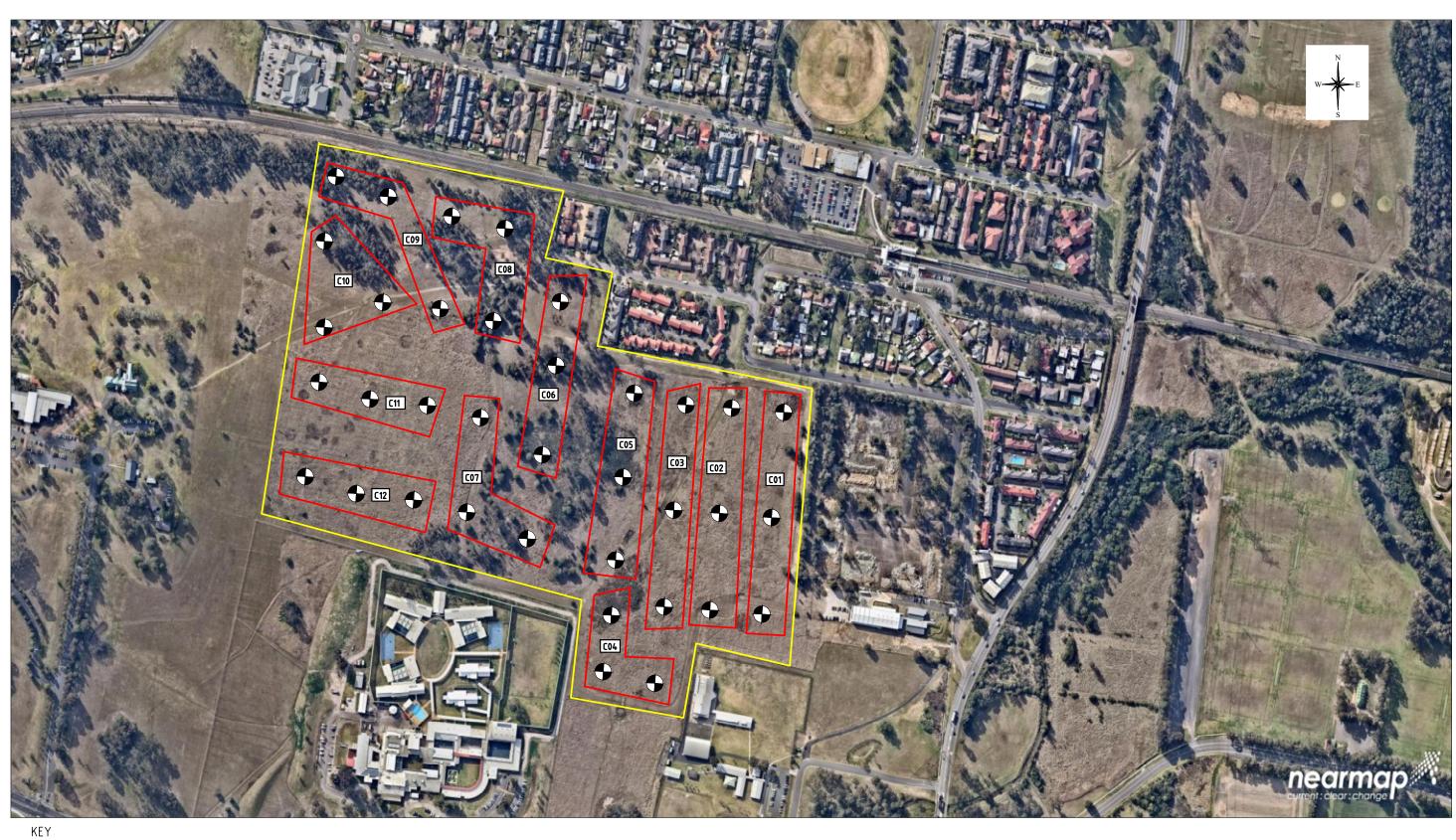
# 9 References

- Chapman and Murphy (1983) Penrith 1:100 000 Soil Landscapes Sheet 9131.
- Department of Mineral Resources (1983) Penrith 1:100,000 Geological Sheet 9131.
- Douglas Partners (2014a) Preliminary Environmental Site Assessment: South Werrington Urban Village Precinct, Lot 102 DP1140594, 16 Chapman Street, Werrington, NSW, ref: 73741.02
- Douglas Partners (2014b) Geotechnical Assessment: South Werrington Urban Village Precinct, Lot 102 DP1140594, 16 Chapman Street, Werrington, NSW, ref: 73741.01
- NEPC (1999, amended 2013) National Environmental Protection (Assessment of Site Contamination) Measure Referred to as ASC NEPM (1999, amended 2013).
- NSW DEC (2006) 2<sup>nd</sup> Ed. Contaminated Sites: Guidelines for the NSW Site Auditor Scheme.
- NSW EPA (2005) Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens
- NSW EPA (1995) Sampling Design Guidelines.
- NSW OEH (2011) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.
- SEPP 55 Remediation of Land.



# 10 Attachment A – Site Plans







SURFACE SAMPLING LOCATION COMPOSITE SAMPLE IDENTIFER

APPROXIMATE SITE BOUNDARY

| Martens & Associates Pt | <b>xy Ltd</b> ABN 85 070 240 890 | Environment   Water   Wastewater   Geotechnical   C  | Civil   Mana         | agemer           | nt        |
|-------------------------|----------------------------------|--|----------------------|------------------|-----------|
| Drawn:                  | ВМ                               | Composite Testing Locations  | Drawing No./I        | ID:              |           |
| Approved:               | JF                               | South Werrington Urban Village<br>16 Chapman Street, Werrington, NSW   | Figure 1             |                  |           |
| Date:                   | 27.10.2015                       | To Ghapman Guod, Wormigton, NOV  |                      |                  |           |
| Scale @A3:              | NA                               | Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767<br>Email: mail@martens.com.au Internet: http://www.martens.com.au | Project:<br>P1504996 | File:<br>JD01V01 | Revision: |

Document Set ID: 9820376 Version: 1, Version Date: 24/11/2021



TP201 APPROXIMATE TESTPIT LOCATION

- APPROXIMATE SITE BOUNDARY

| Martens & Associates Pt | y Ltd ABN 85 070 240 890 | Environment   Water   Wastewater   Geotechnical   C  | ivil   Mana    | agemen           | ıt             |
|-------------------------|--------------------------|--|----------------|------------------|----------------|
| Drawn:                  | ВМ                       | Testpit Locations  | Drawing No./II | D:               |                |
| Approved:               | JF                       | South Werrington Urban Village<br>16 Chapman Street, Werrington, NSW   | Figure 2       |                  |                |
| Date:                   | 27.10.2015               | To Grapman Guest, Wernington, NOW  |                |                  |                |
| Scale @A3:              | NA                       | Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767<br>Email: mail@martens.com.au Internet: http://www.martens.com.au | .,             | File:<br>JD01V01 | Revision:<br>A |

# 11 Attachment B – Laboratory Summary Tables







|  | Lead  |         |         |                   | Metals |         |        |       |
|--|-------|---------|---------|-------------------|--------|---------|--------|-------|
|  | Lead  | Arsenic | Cadmium | Chromium (III+VI) | Copper | Mercury | Nickel | Zinc  |
|  | mg/kg | mg/kg   | mg/kg   | mg/kg             | mg/kg  | mg/kg   | mg/kg  | mg/kg |
| EQL  | 1     | 4       | 0.4     | 1                 | 1      | 0.1     | 1      | 1     |
|  |       |         |         |                   |        |         |        |       |
| NEPM 2013 Table 1A(1) HILs Res A Soil                    | 300   | 100     | 20      | -                 | 6000   | 40      | 400    | 7400  |
| NEPM 2013 Table 1A(1) HILs Res A Soil (Composite Values) | 100   | 33      | 6       | -                 | 2000   | 13      | 133    | 2467  |
| NEPM 2013 EIL  | 1100  | 100     | -       | -                 | 100    | -       | 60     | 210   |
| NEPM 2013 FIL (Composite Values)                         | 366   | 33      | -       | _                 | 33     | _       | 20     | 70    |

| Field_ID   | LocCode    | Sample_Depth_Range | Sampled_Date-Time | Matrix_Description |    |    |       |    |    |      |    |    |
|------------|------------|--------------------|-------------------|--------------------|----|----|-------|----|----|------|----|----|
| 4996/TP201 | 4996/TP201 | 0.5                | 7/10/2015         |                    | 10 | 4  | < 0.4 | 20 | 12 | <0.1 | 5  | 10 |
| 4996/TP202 | 4996/TP202 | 0.15               | 7/10/2015         |                    | 29 | 6  | < 0.4 | 20 | 11 | <0.1 | 5  | 53 |
| 4996/TP203 | 4996/TP203 | 0.15               | 7/10/2015         |                    | 31 | 7  | < 0.4 | 20 | 14 | <0.1 | 7  | 43 |
| 4996/TP204 | 4996/TP204 | 0.15               | 7/10/2015         |                    | 28 | 11 | < 0.4 | 24 | 25 | <0.1 | 6  | 34 |
| 4996/TP207 | 4996/TP207 | 0.15               | 7/10/2015         |                    | 29 | 7  | < 0.4 | 20 | 14 | <0.1 | 7  | 32 |
| 4996/TP208 | 4996/TP208 | 0.15               | 7/10/2015         |                    | 15 | 5  | < 0.4 | 18 | 10 | <0.1 | 7  | 15 |
| 4996/TP210 | 4996/TP210 | 0.15               | 7/10/2015         |                    | 24 | 7  | < 0.4 | 23 | 8  | <0.1 | 5  | 22 |
| 4996/TP212 | 4996/TP212 | 0.15               | 7/10/2015         |                    | 25 | 10 | < 0.4 | 35 | 13 | <0.1 | 8  | 19 |
| C1         | C1         | 0.1                | 7/10/2015         |                    | 33 | 6  | < 0.4 | 19 | 11 | <0.1 | 5  | 44 |
| C10        | C10        | 0.1                | 7/10/2015         |                    | 21 | 7  | < 0.4 | 15 | 26 | <0.1 | 12 | 49 |
| C11        | C11        | 0.1                | 7/10/2015         |                    | 22 | 8  | < 0.4 | 16 | 24 | <0.1 | 16 | 45 |
| C12        | C12        | 0.1                | 7/10/2015         |                    | 24 | 8  | < 0.4 | 19 | 14 | <0.1 | 10 | 27 |
| C2         | C2         | 0.1                | 7/10/2015         |                    | 24 | 8  | < 0.4 | 32 | 9  | <0.1 | 6  | 30 |
| C3         | C3         | 0.1                | 7/10/2015         |                    | 22 | 9  | < 0.4 | 18 | 22 | <0.1 | 12 | 54 |
| C4         | C4         | 0.1                | 7/10/2015         |                    | 18 | <4 | < 0.4 | 16 | 8  | <0.1 | 5  | 19 |
| C5         | C5         | 0.1                | 7/10/2015         |                    | 19 | 5  | < 0.4 | 16 | 14 | <0.1 | 7  | 33 |
| C6         | C6         | 0.1                | 7/10/2015         |                    | 29 | 9  | < 0.4 | 36 | 10 | <0.1 | 7  | 25 |
| C7         | C7         | 0.1                | 7/10/2015         |                    | 25 | 8  | < 0.4 | 23 | 14 | <0.1 | 8  | 28 |
| C8         | C8         | 0.1                | 7/10/2015         |                    | 33 | 16 | < 0.4 | 21 | 32 | <0.1 | 8  | 43 |
| C9         | C9         | 0.1                | 7/10/2015         |                    | 24 | 8  | < 0.4 | 19 | 20 | <0.1 | 11 | 38 |

#### Statistical Summary

| Statistical Salliniary                        |     |     |     |     |     |     |      |     |      |
|---|-----|-----|-----|-----|-----|-----|------|-----|------|
| Number of Results                             | 20  | 20  | ) : | 20  | 20  | 20  | 20   | 20  | 20   |
| Number of Detects                             | 20  | 19  | )   | 0   | 20  | 20  | 0    | 20  | 20   |
| Minimum Concentration                         | 10  | <4  | > ا | 0.4 | 15  | 8   | <0.1 | 5   | 10   |
| Minimum Detect                                | 10  | 4   | 1   | ND  | 15  | 8   | ND   | 5   | 10   |
| Maximum Concentration                         | 33  | 16  | 5 < | 0.4 | 36  | 32  | <0.1 | 16  | 54   |
| Maximum Detect                                | 33  | 16  | 1 6 | ND  | 36  | 32  | ND   | 16  | 54   |
| Average Concentration                         | 24  | 7.6 | 5 ( | ).2 | 22  | 16  | 0.05 | 7.9 | 33   |
| Median Concentration                          | 24  | 7.5 | 5 ( | ).2 | 20  | 14  | 0.05 | 7   | 32.5 |
| Standard Deviation                            | 5.9 | 2.9 | 9   | 0   | 6.1 | 6.9 | 0    | 3   | 13   |
| Number of Guideline Exceedances               | 0   | 0   |     | 0   | 0   | 0   | 0    | 0   | 0    |
| Number of Guideline Exceedances(Detects Only) | 0   | 0   |     | 0   | 0   | 0   | 0    | 0   | 0    |

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| martens  | _ |  |  |  |  |  |   |  |                |  |  |  |  |  |  |  |  |                      |  |  |  |   |   |  |  |  |  |  |  |  |  |                                      |                |   |  |   |
|--|---|--|--|--|--|--|---|--|----------------|--|--|--|--|--|--|--|--|----------------------|--|--|--|---|---|--|--|--|--|--|--|--|--|--------------------------------------|----------------|---|--|---|
| Martons  |   |  |  | ВТ   | EX                                       |  |   |  |                |  |  |  |  |  | PAH/Pł                                       | nenols                                       |  |                      |  |  |  |   | _   |  | Polych   | lorinated  | l Bipheny                                    | ls   |  |  |  |                                      |                | TPH   |  |   |
| consulting enginee   |   | Benzene  | Ethylbenzene                           | . Toluene  | Xylene (m & p)                           | Xylene (o)                               | C6-C10 less BTEX (F1)                   | Acenaphthene                                 | Acenaphthylene | Anthracene                                   | Benz(a)anthracene                            | Benzo(a) pyrene  | Benzo(b+k)fluoranthene                       | Benzo(g,h,i)perylene                         | Chrysene                                     | Dibenz(a,h)anthracene                        | Carcinogenic PAHs (as B(a)P TPE)             | Fluoranthene         | Fluorene                                     | Indeno(1,2,3-c,d)pyrene                      | Naphthalene  | Dyrana  | ryielle   | Arochlor 1221  | Arochlor   | Aro  | Arochlor 1248                                | Arochlor 1254  | Arochlor 1260  | C10-C16  | C16-C34                                      | C34-C40                              | F2-NAPHTHALENE | 6 63  |  | C15 - C28   |
| FOL  |   |  |  |  |  |  |   |  |                |  |  |  |  |  |  |  |  |                      |  |  | ng/kg mg/  |   |   |  |  |  |  |  |  |  |  |                                      |                |   |  |   |
| EQL NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay  | + | 0.2  | 1                                      | 0.5  | 2  | 1  | 25                                      | 0.1  | 0.1            | 0.1  | 0.1  | 0.05   | 0.2  | 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  | 0.1  | 50   | 100  | 100                                  | 50             | 23  | 50 10  | .00   |
| 0-1m   |   | 0.7  | NI                                     | 480  |  |  | 50                                      |  |                |  |  |  |  |  |  |  |  |                      |  |  | 5  |   |   |  |  |  |  |  |  |  |  |                                      | 280            |   |  |   |
| 1-2m   |   |  | NL                                     | NL   |  |  | 90                                      |  |                |  |  |  |  |  |  |  |  |                      |  |  | NL NL  |   |   |  |  |  |  |  |  |  |  |                                      | NL NL          |   |  |   |
| 2-4m   |   | _  | NL                                     | NL   |  |  | 150                                     |  |                |  |  |  |  |  |  |  |  |                      |  |  | NL   |   |   |  |  |  |  |  |  |  |  |                                      | NL             |   |  |   |
| >4m  |   | _  | NL                                     | NL   |  |  | 290                                     |  |                |  |  |  |  |  |  |  |  |                      |  |  | NL   |   |   |  |  |  |  |  |  |  |  |                                      | NL             |   |  |   |
| NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil  |   | 65   | INL                                    | 105  |  |  | 180                                     |  |                |  |  |  |  |  |  |  |  |                      |  |  | INL  |   |   |  |  |  |  |  |  |  | 1300   | 5600                                 |                | $\overline{}$                                     | $\overline{}$  |   |
| 0-2m   |   | 05   | 125                                    | 103  |  |  | 100                                     |  |                |  |  | 0.7  |  |  |  |  |  |                      |  |  |  |   |   |  |  |  |  |  |  |  | 1300   | 3000                                 | 120            |   |  |   |
| NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil  |   |  | 123                                    |  |  |  |   |  |                |  |  | 0.7  |  |  |  |  |  |                      |  |  |  |   |   |  |  |  |  |  |  | 1000   | 5000   | 10000                                |                |   |  |   |
| Field_ID         LocCode         Sample_Depth_Range         Sampled_Date-Popto           4996/TP201         4996/TP201         0.5         7/10/2015           4996/TP202         4996/TP202         0.15         7/10/2015           4996/TP203         4996/TP203         0.15         7/10/2015           4996/TP204         4996/TP204         0.15         7/10/2015           4996/TP207         4996/TP207         0.15         7/10/2015           4996/TP208         4996/TP208         0.15         7/10/2015           4996/TP210         4996/TP210         0.15         7/10/2015           4996/TP212         4996/TP212         0.15         7/10/2015           Statistical Summary         Statistical Summary         Sample_Depth_Range         Sampled_Depth_Range         Sampled_Depth_Range         7/10/2015 |   | <0.2<br><0.2<br><0.2<br><0.2<br><0.2<br><0.2<br><0.2<br><0.2 | <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | <0.5<br><0.5<br><0.5<br><0.5<br><0.5<br><0.5<br><0.5<br><0.5 | <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 <2 < | <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 < | <25 <25 <25 <25 <25 <25 <25 <25 <25 <25 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1           | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.05<br><0.05<br><0.05<br><0.05<br><0.05<br><0.05<br><0.05<br><0.05 | <0.2<br><0.2<br><0.2<br><0.2<br><0.2<br><0.2 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.5<br><0.5<br><0.5<br><0.5<br><0.5<br><0.5 | <0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1 <0.<br><0.1 <0.<br><0.1 <0.<br><0.1 <0.<br><0.1 <0.<br><0.1 <0.<br><0.1 <0.<br><0.1 <0.<br><0.1 <0. | 1 <0.<br>1 <0.<br>1 <0.<br>1 <0.<br>1 <0.<br>1 <0.<br>1 <0. | 1 <0.<br>1 <0.<br>1 <0.<br>1 <0.<br>1 <0.<br>1 <0.<br>1 <0. | 1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1 | 1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1 | 1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1<br>1 <0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1<br><0.1 | <50<br><50<br><50<br><50<br><50<br><50<br><50<br><50 | <100<br><100<br><100<br><100<br><100<br><100 | <100<br><100<br><100<br><100<br><100 | <50            | <25 · <25 · <25 · <25 · <25 · <25 · <25 · <25 · < | <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 <: <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 <: <50 <: <50 <: <50 <: <50 <: <50 <: <50 <: <50 <: <50 <: <50 <: <50 50 <: <50 </</th <th>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100<br/>100</th> | 100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100 |
| Number of Results  |   | 8  | 8                                      | 8  | 8  | 8  | 8                                       | 8  | 8              | 8  | 8  | 8  | 8  | 8  | 8  | 8  | 8  | 8                    | 8  | 8  | 8 8  | 8   | 8   | 8  | 8  | 8  | 8  | 8  | 8  | T 8  | 8  | 8                                    | 8              | 8   | 8 8  | 8   |
| Number of Detects  |   | 0  | 0                                      | 0  | 0  | 0  | 0                                       | 0  | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                    | 0  |  | 0 0  |   |   |  | 0  | 0  | 0  | 0  | 0  | 0  | 0  |                                      | _              |   |  | 0   |
| Minimum Concentration  |   | <0.2   | _                                      | <0.5   | <2                                       | <1                                       | <25                                     | <0.1   | <0.1           |  | _  | <0.05  |  | <0.1   |  |  | -  | -                    | _  |  | 0.1 <0.  | _   | _   |  | -  | _  | <0.1   | <0.1   | <0.1   | <50  | -  |                                      |                |   |  | 100   |
| Minimum Detect   |   | _  |  | ND   | ND                                       | ND                                       | ND                                      | ND   | ND             | ND   | ND   | ND   | ND   | ND   | ND   |  | ND   | _                    |  |  | ND ND  |   | -   |  | _  | _  | ND   | ND   | ND   | ND   |  |                                      | _              |   |  | 1D  |
| Maximum Concentration  |   | <0.2   | $\overline{}$                          | <0.5   | <2                                       | <1                                       | <25                                     |  | _              |  |  |  | <0.2   |  | _  |  | _  |                      |  |  | 0.1 <0.  |   |   | _  | _  |  |  | <0.1   | <0.1   | _  |  |                                      |                |   | _  | 100   |
| Maximum Detect   |   | ND   | ND                                     | ND   | ND                                       | ND                                       | ND                                      | ND   | ND             | ND   | ND   | ND   | ND   | ND   | ND   | ND   | ND   | ND                   | ND   |  | ND ND  | -   |   | _  | ND   |  | ND   | ND   | ND   | ND   | ND   |                                      |                |   |  | 1D  |
| Average Concentration  |   |  |  | 0.25   | 1  | 0.5                                      | 13                                      |  | _              |  |  | 0.025  | _  |  | _  |  | _  |                      |  |  | 0.05 0.0   |   |   | _  | _  |  | 0.05   | 0.05   | 0.05   | 25   |  |                                      |                |   | _  | 50  |
| Median Concentration   |   |  |  | 0.25   | 1  |  | 12.5                                    | 0.05   | _              |  |  | 0.025  | _  | 0.05   |  |  | _  | -                    | -  |  | 0.05 0.0   | -   | -   | _  | -  | _  | 0.05   | 0.05   | 0.05   | 25   | 50   |                                      | _              |   |  | 50  |
| Standard Deviation   |   | 0  | 0                                      | 0  | 0  | 0  | 0                                       | 0  | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                    | 0  |  | 0 0  |   |   | _  | 0  | 0.03   | 0  | 0  | 0  | 0  | 0  |                                      |                |   |  | 0   |
| Number of Guideline Exceedances  |   | 0  | 0                                      | 0  | 0  | 0  | 0                                       | 0  | 0              | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0                    | 0  |  | 0 0  | _   | _   |  | _  | _  | 0  | 0  | 0  | 0  | 0  |                                      |                |   | 0 (  | _   |
| Number of Guideline Exceedances(Detects Only)  |   |  | 0                                      | 0  | 0  | 0  | 0                                       | 0  | 0              | 0  | 0  | 0  | _  | 0  | _  | 0  | 0  | 0                    | 0  |  | 0 0  |   |   | _  | _  |  | 0  | 0  | 0  | 0  |  |                                      |                |   |  | 0   |
| Transper of Guideline Exceedances(Detects Only)  |   | U  | U                                      |  |  |  | _ 0                                     |  | U              |  | U  | U  |  |  | . 0  | U  | 1 0  | U                    | 0  | 0  | 0   0  | 0   | 0   | 0  | 0  | 0  | 0  | 1 0  | 1 0  | 1 0  |  | J                                    | 0              |   |  |   |

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| martens  |         |       |         |                   |         |                 |                   |       |       |          |             |           |              |               |                     |        |                 |                 |            |                    |              |                  |                 |              |                     |          |            |            |        |              |           |        |
|--|---------|-------|---------|-------------------|---------|-----------------|-------------------|-------|-------|----------|-------------|-----------|--------------|---------------|---------------------|--------|-----------------|-----------------|------------|--------------------|--------------|------------------|-----------------|--------------|---------------------|----------|------------|------------|--------|--------------|-----------|--------|
|  |         |       |         |                   |         |                 |                   |       | (     | Organoch | ilorine Pe  | esticides | S            |               |                     |        |                 |                 |            |                    |              |                  |                 |              | Org                 | anopho:  | sphorous   | s Pesticio | des    |              |           |        |
| consulting engineers                                     | 4,4-DDE | а-внс | Aldrin  | Aldrin + Dieldrin | р-внс   | Chlordane (cis) | Chlordane (trans) | д-внс | aga   | DDT      | DDT+DDE+DDD | Dieldrin  | Endosulfan I | Endosulfan II | Endosulfan sulphate | Endrin | Endrin aldehyde | g-BHC (Lindane) | Heptachlor | Heptachlor epoxide | Methoxychlor | Azinophos methyl | Bromophos-ethyl | Chlorpyrifos | Chlorpyrifos-methyl | Diazinon | Dichlorvos | Dimethoate | Ethion | Fenitrothion | Malathion | Ronnel |
|  | mg/kg   | mg/kg | mg/kg m | ıg/kg m           | ng/kg r | ng/kg r         | ng/kg             | mg/kg | mg/kg | mg/kg    | mg/kg       | mg/kg     | mg/kg        | mg/kg         | mg/kg               | mg/kg  | mg/kg           | mg/kg           | mg/kg      | mg/kg              | ng/kg        | mg/kg            | mg/kg           | mg/kg        | mg/kg               | mg/kg    | mg/kg      | mg/kg      | mg/kg  | mg/kg        | mg/kg m   | g/kg   |
| EQL  | 0.1     | 0.1   | 0.1     | C                 | 0.1     | 0.1             | 0.1               | 0.1   | 0.1   | 0.1      |             | 0.1       | 0.1          | 0.1           | 0.1                 | 0.1    | 0.1             | 0.1             | 0.1        | 0.1                | 0.1          | 0.1              | 0.1             | 0.1          | 0.1                 | 0.1      | 0.1        | 0.1        | 0.1    | 0.1          | 0.1       | 0.1    |
| NEPM 2013 Table 1A(1) HILs Res A Soil                    |         |       |         | 6                 |         |                 |                   |       |       |          | 240         |           |              |               |                     | 10     |                 |                 | 6          |                    | 300          |                  |                 | 160          |                     |          |            |            |        |              |           |        |
| NEPM 2013 Table 1A(1) HILs Res A Soil (Composite Values) |         |       |         | 2                 |         |                 |                   |       |       |          | 80          |           |              |               |                     | 3      |                 |                 | 2          |                    | 100          |                  |                 | 53           |                     |          |            |            |        |              |           |        |

| Field_ID   | LocCode    | Sample_Depth_Range | Sampled_Date-Time Matrix_Description |      |       |       |      |       |      |      |      |       |       |      |       |       |      |       |      |       |      |       |       |       |       |      |      |      |      |      |      |       |       |      |       |
|------------|------------|--------------------|--------------------------------------|------|-------|-------|------|-------|------|------|------|-------|-------|------|-------|-------|------|-------|------|-------|------|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|------|-------|
| 4996/TP201 | 4996/TP201 | 0.5                | 7/10/2015                            | <0.1 | <0.1  | <0.1  | <0.2 | <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  |
| 4996/TP202 | 4996/TP202 | 0.15               | 7/10/2015                            | <0.1 | <0.1  | <0.1  | <0.2 | <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  |
| 4996/TP203 | 4996/TP203 | 0.15               | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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 |
| 4996/TP204 | 4996/TP204 | 0.15               | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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  |
| 4996/TP207 | 4996/TP207 | 0.15               | 7/10/2015                            | <0.1 | <0.1  | <0.1  | <0.2 | <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  |
| 4996/TP208 | 4996/TP208 | 0.15               | 7/10/2015                            | <0.1 | <0.1  | <0.1  | <0.2 | <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  |
| 4996/TP210 | 4996/TP210 | 0.15               | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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 |
| 4996/TP212 | 4996/TP212 | 0.15               | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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 |
| C1         | C1         | 0.1                | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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 |
| C10        | C10        | 0.1                | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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 |
| C11        | C11        | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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 |
| C12        | C12        | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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 |
| C2         | C2         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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 |
| C3         | C3         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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 |
| C4         | C4         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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 |
| C5         | C5         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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  |
| C6         | C6         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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  |
| C7         | C7         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | <0.1  | <0.2 | <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  |
| C8         | C8         | 0.1                | 7/10/2015                            | <0.1 | <0.1  | < 0.1 | <0.2 | <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 |
| C9         | C9         | 0.1                | 7/10/2015                            | <0.1 | < 0.1 | < 0.1 | <0.2 | < 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 |

| Statistical Summary   |  |
|-----------------------|--|
| Number of Results     |  |
| Number of Detects     |  |
| Minimum Concentration |  |

| Statistical Sullillary                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Number of Results                             | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   | 20   |
| Number of Detects                             | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Minimum Concentration                         | <0.1 | <0.1 | <0.1 | <0.2 | <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 |
| Minimum Detect                                | ND   |
| Maximum Concentration                         | <0.1 | <0.1 | <0.1 | <0.2 | <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 |
| Maximum Detect                                | ND   |
| Average Concentration                         | 0.05 | 0.05 | 0.05 | 0.1  | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.1  | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Median Concentration                          | 0.05 | 0.05 | 0.05 | 0.1  | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.1  | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| Standard Deviation                            | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Number of Guideline Exceedances               | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Number of Guideline Exceedances(Detects Only) | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

12 Attachment C – Laboratory Analytical Certificates and Chain of Custody Documentation





email: sydney@envirolab.com.au envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 135605

Client:

Martens & Associates Pty Ltd Suite 201, 20 George St Hornsby NSW 2077

Attention: Ben McGiffin

Sample log in details:

Your Reference: P1504996COC01V01, South Werrington

No. of samples: 82 Soils

Date samples received / completed instructions received 08/10/2015 / 08/10/2015

**Analysis Details:** 

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received. Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date: 15/10/15 / 13/10/15

Date of Preliminary Report: Not Issued

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Accredited for compliance with ISO/IEC 17025. Tests not covered by NATA are denoted with \*.

# **Results Approved By:**

Jacinta/Hurst Laboratory Manager

Envirolab Reference: 135605 Revision No: R 00



| VTDH/C6 C10\/DTEVNin Soil      |        |            |            |            |            |            |
|--------------------------------|--------|------------|------------|------------|------------|------------|
| vTRH(C6-C10)/BTEXN in Soil     | LINUTO | 105005 50  | 405005 50  | 105005 50  | 405005.04  | 405005.00  |
| Our Reference:                 | UNITS  | 135605-52  | 135605-56  | 135605-59  | 135605-61  | 135605-63  |
| Your Reference                 |        | 4996/TP201 | 4996/TP202 | 4996/TP203 | 4996/TP204 | 4996/TP207 |
| Depth                          |        | 0.5        | 0.15       | 0.15       | 0.15       | 0.15       |
| Composite Reference            |        | -          | -          | -          | -          | -          |
| Date Sampled                   |        | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                 |        | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date extracted                 | -      | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                  | -      | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 |
| TRHC6 - C9                     | mg/kg  | <25        | <25        | <25        | <25        | <25        |
| TRHC6 - C10                    | mg/kg  | <25        | <25        | <25        | <25        | <25        |
| vTPHC6 - C10 less BTEX (F1)    | mg/kg  | <25        | <25        | <25        | <25        | <25        |
| Benzene                        | mg/kg  | <0.2       | <0.2       | <0.2       | <0.2       | <0.2       |
| Toluene                        | mg/kg  | <0.5       | <0.5       | <0.5       | <0.5       | <0.5       |
| Ethylbenzene                   | mg/kg  | <1         | <1         | <1         | <1         | <1         |
| m+p-xylene                     | mg/kg  | <2         | <2         | <2         | <2         | <2         |
| o-Xylene                       | mg/kg  | <1         | <1         | <1         | <1         | <1         |
| naphthalene                    | mg/kg  | <1         | <1         | <1         | <1         | <1         |
| Surrogate aaa-Trifluorotoluene | %      | 96         | 99         | 94         | 98         | 100        |

| vTRH(C6-C10)/BTEXN in Soil     |       |            |            |            |            |            |
|--------------------------------|-------|------------|------------|------------|------------|------------|
| Our Reference:                 | UNITS | 135605-65  | 135605-69  | 135605-74  | 135605-77  | 135605-78  |
| Your Reference                 |       | 4996/TP208 | 4996/TP210 | 4996/TP212 | TS         | TS         |
| Depth                          |       | 0.15       | 0.15       | 0.15       | -          | -          |
| Composite Reference            |       | -          | -          | -          | -          | -          |
| Date Sampled                   |       | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                 |       | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date extracted                 | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                  | -     | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 |
| TRHC6 - C9                     | mg/kg | <25        | <25        | <25        | [NA]       | [NA]       |
| TRHC6 - C10                    | mg/kg | <25        | <25        | <25        | [NA]       | [NA]       |
| vTPHC6 - C10 less BTEX (F1)    | mg/kg | <25        | <25        | <25        | [NA]       | [NA]       |
| Benzene                        | mg/kg | <0.2       | <0.2       | <0.2       | 99%        | 97%        |
| Toluene                        | mg/kg | <0.5       | <0.5       | <0.5       | 98%        | 97%        |
| Ethylbenzene                   | mg/kg | <1         | <1         | <1         | 97%        | 97%        |
| m+p-xylene                     | mg/kg | <2         | <2         | <2         | 99%        | 96%        |
| o-Xylene                       | mg/kg | <1         | <1         | <1         | 98%        | 98%        |
| naphthalene                    | mg/kg | <1         | <1         | <1         | [NA]       | [NA]       |
| Surrogate aaa-Trifluorotoluene | %     | 98         | 97         | 99         | 101        | 106        |

Envirolab Reference: 135605 Revision No: R 00 Page 2 of 30

# Client Reference: P1504996COC01V01, South Werrington

| svTRH (C10-C40) in Soil                |        |            |            |            |            |            |
|--|--------|------------|------------|------------|------------|------------|
| , ,                                    | LINITO | 40ECOE EO  | 425005 FC  | 425C05 50  | 40EC0E C4  | 105005 00  |
| Our Reference:                         | UNITS  | 135605-52  | 135605-56  | 135605-59  | 135605-61  | 135605-63  |
| Your Reference                         |        | 4996/TP201 | 4996/TP202 | 4996/TP203 | 4996/TP204 | 4996/TP207 |
| Depth                                  |        | 0.5        | 0.15       | 0.15       | 0.15       | 0.15       |
| Composite Reference                    |        | -          | -          | -          | -          | -          |
| Date Sampled                           |        | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                         |        | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date extracted                         | -      | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                          | -      | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| TRHC10 - C14                           | mg/kg  | <50        | <50        | <50        | <50        | <50        |
| TRHC 15 - C28                          | mg/kg  | <100       | <100       | <100       | <100       | <100       |
| TRHC29 - C36                           | mg/kg  | <100       | <100       | <100       | <100       | <100       |
| TRH>C10-C16                            | mg/kg  | <50        | <50        | <50        | <50        | <50        |
| TRH>C10 - C16 less Naphthalene<br>(F2) | mg/kg  | <50        | <50        | <50        | <50        | <50        |
| TRH>C16-C34                            | mg/kg  | <100       | <100       | <100       | <100       | <100       |
| TRH>C34-C40                            | mg/kg  | <100       | <100       | <100       | <100       | <100       |
| Surrogate o-Terphenyl                  | %      | 90         | 91         | 91         | 91         | 92         |

| svTRH (C10-C40) in Soil                |       |            |            |            |
|--|-------|------------|------------|------------|
| Our Reference:                         | UNITS | 135605-65  | 135605-69  | 135605-74  |
| Your Reference                         |       | 4996/TP208 | 4996/TP210 | 4996/TP212 |
| Depth                                  |       | 0.15       | 0.15       | 0.15       |
| Composite Reference                    |       | -          | -          | -          |
| Date Sampled                           |       | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                         |       | Soil       | Soil       | Soil       |
| Date extracted                         | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                          | -     | 09/10/2015 | 09/10/2015 | 10/10/2015 |
| TRHC10 - C14                           | mg/kg | <50        | <50        | <50        |
| TRHC 15 - C28                          | mg/kg | <100       | <100       | <100       |
| TRHC29 - C36                           | mg/kg | <100       | <100       | <100       |
| TRH>C10-C16                            | mg/kg | <50        | <50        | <50        |
| TRH>C10 - C16 less Naphthalene<br>(F2) | mg/kg | <50        | <50        | <50        |
| TRH>C16-C34                            | mg/kg | <100       | <100       | <100       |
| TRH>C34-C40                            | mg/kg | <100       | <100       | <100       |
| Surrogate o-Terphenyl                  | %     | 95         | 92         | 93         |

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# Client Reference: P1504996COC01V01, South Werrington

| PAHs in Soil                   |       |                   |                   |                   |                   |                   |
|--------------------------------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Our Reference:                 | UNITS | 135605-52         | 135605-56         | 135605-59         | 135605-61         | 135605-63         |
| Your Reference                 |       | 4996/TP201        | 4996/TP202        | 4996/TP203        | 4996/TP204        | 4996/TP207        |
| Depth                          |       | 0.5               | 0.15              | 0.15              | 0.15              | 0.15              |
| Composite Reference            |       | -                 | -                 | -                 | -                 | -                 |
| Date Sampled Type of sample    |       | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil |
|                                |       |                   |                   |                   |                   |                   |
| Date extracted                 | -     | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        |
| Date analysed                  | -     | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        |
| Naphthalene                    | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Acenaphthylene                 | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Acenaphthene                   | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Fluorene                       | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Phenanthrene                   | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Anthracene                     | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Fluoranthene                   | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Pyrene                         | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Benzo(a)anthracene             | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Chrysene                       | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Benzo(b,j+k)fluoranthene       | mg/kg | <0.2              | <0.2              | <0.2              | <0.2              | <0.2              |
| Benzo(a)pyrene                 | mg/kg | <0.05             | <0.05             | <0.05             | <0.05             | <0.05             |
| Indeno(1,2,3-c,d)pyrene        | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Dibenzo(a,h)anthracene         | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Benzo(g,h,i)perylene           | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Benzo(a)pyrene TEQ calc (zero) | mg/kg | <0.5              | <0.5              | <0.5              | <0.5              | <0.5              |
| Benzo(a)pyrene TEQ calc(half)  | mg/kg | <0.5              | <0.5              | <0.5              | <0.5              | <0.5              |
| Benzo(a)pyrene TEQ calc(PQL)   | mg/kg | <0.5              | <0.5              | <0.5              | <0.5              | <0.5              |
| Total Positive PAHs            | mg/kg | NIL(+)VE          | NIL(+)VE          | NIL(+)VE          | NIL(+)VE          | NIL(+)VE          |
| Surrogate p-Terphenyl-d14      | %     | 93                | 95                | 95                | 99                | 99                |

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Document Set ID: 9820376 Version: 1, Version Date: 24/11/2021

| PAHs in Soil                   |       |                   |                   |                   |
|--------------------------------|-------|-------------------|-------------------|-------------------|
| Our Reference:                 | UNITS | 135605-65         | 135605-69         | 135605-74         |
| Your Reference                 |       | 4996/TP208        | 4996/TP210        | 4996/TP212        |
| Depth                          |       | 0.15              | 0.15              | 0.15              |
| Composite Reference            |       | -                 | -                 | -                 |
| Date Sampled Type of sample    |       | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil |
|                                |       |                   |                   |                   |
| Date extracted                 | -     | 09/10/2015        | 09/10/2015        | 09/10/2015        |
| Date analysed                  | -     | 09/10/2015        | 09/10/2015        | 09/10/2015        |
| Naphthalene                    | mg/kg | <0.1              | <0.1              | <0.1              |
| Acenaphthylene                 | mg/kg | <0.1              | <0.1              | <0.1              |
| Acenaphthene                   | mg/kg | <0.1              | <0.1              | <0.1              |
| Fluorene                       | mg/kg | <0.1              | <0.1              | <0.1              |
| Phenanthrene                   | mg/kg | <0.1              | <0.1              | <0.1              |
| Anthracene                     | mg/kg | <0.1              | <0.1              | <0.1              |
| Fluoranthene                   | mg/kg | <0.1              | <0.1              | <0.1              |
| Pyrene                         | mg/kg | <0.1              | <0.1              | <0.1              |
| Benzo(a)anthracene             | mg/kg | <0.1              | <0.1              | <0.1              |
| Chrysene                       | mg/kg | <0.1              | <0.1              | <0.1              |
| Benzo(b,j+k)fluoranthene       | mg/kg | <0.2              | <0.2              | <0.2              |
| Benzo(a)pyrene                 | mg/kg | <0.05             | <0.05             | <0.05             |
| Indeno(1,2,3-c,d)pyrene        | mg/kg | <0.1              | <0.1              | <0.1              |
| Dibenzo(a,h)anthracene         | mg/kg | <0.1              | <0.1              | <0.1              |
| Benzo(g,h,i)perylene           | mg/kg | <0.1              | <0.1              | <0.1              |
| Benzo(a)pyrene TEQ calc (zero) | mg/kg | <0.5              | <0.5              | <0.5              |
| Benzo(a)pyrene TEQ calc(half)  | mg/kg | <0.5              | <0.5              | <0.5              |
| Benzo(a)pyrene TEQ calc(PQL)   | mg/kg | <0.5              | <0.5              | <0.5              |
| Total Positive PAHs            | mg/kg | NIL(+)VE          | NIL(+)VE          | NIL(+)VE          |
| Surrogate p-Terphenyl-d14      | %     | 94                | 96                | 86                |

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| Organochlorine Pesticides in soil |            |                   |                   |                   |                   |                   |
|-----------------------------------|------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Our Reference:                    | UNITS      | 135605-37         | 135605-38         | 135605-39         | 135605-40         | 135605-41         |
| Your Reference                    |            | C1                | C2                | C3                | C4                | C5                |
| Depth                             |            | 0.1               | 0.1               | 0.1               | 0.1               | 0.1               |
| Composite Reference               |            | 1+2+3             | 4+5+6             | 7+8+9             | 10+11+12          | 13+14+15          |
| Date Sampled<br>Type of sample    |            | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil |
|                                   |            |                   |                   |                   |                   |                   |
| Date extracted                    | -          | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        |
| Date analysed                     | -          | 10/10/2015        | 10/10/2015        | 10/10/2015        | 10/10/2015        | 10/10/2015        |
| HCB                               | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| alpha-BHC                         | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| gamma-BHC                         | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| beta-BHC                          | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Heptachlor                        | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| delta-BHC                         | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Aldrin                            | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Heptachlor Epoxide                | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| gamma-Chlordane                   | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| alpha-chlordane                   | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endosulfan I                      | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| pp-DDE                            | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Dieldrin                          | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endrin                            | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| pp-DDD                            | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endosulfan II                     | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| pp-DDT                            | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endrin Aldehyde                   | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endosulfan Sulphate               | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Methoxychlor                      | mg/kg      | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Surrogate TCMX                    | <u>9</u> 9 | 93                | 92                | 94                | 97                | 98                |

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| Organochlorine Pesticides in soil |       |                   |                   |                   |                   |                   |
|-----------------------------------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Our Reference:                    | UNITS | 135605-42         | 135605-43         | 135605-44         | 135605-45         | 135605-46         |
| Your Reference                    |       | C6                | C7                | C8                | C9                | C10               |
| Depth                             |       | 0.1               | 0.1               | 0.1               | 0.1               | 0.1               |
| Composite Reference               |       | 16+17+18          | 19+20+21          | 22+23+24          | 25+26+27          | 28+29+30          |
| Date Sampled Type of sample       |       | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/2015<br>Soil |
|                                   |       |                   |                   |                   |                   |                   |
| Date extracted                    | -     | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        | 09/10/2015        |
| Date analysed                     | -     | 10/10/2015        | 10/10/2015        | 10/10/2015        | 10/10/2015        | 10/10/2015        |
| HCB                               | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| alpha-BHC                         | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| gamma-BHC                         | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| beta-BHC                          | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Heptachlor                        | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| delta-BHC                         | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Aldrin                            | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Heptachlor Epoxide                | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| gamma-Chlordane                   | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| alpha-chlordane                   | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endosulfan I                      | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| pp-DDE                            | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Dieldrin                          | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endrin                            | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| pp-DDD                            | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endosulfan II                     | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| pp-DDT                            | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endrin Aldehyde                   | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Endosulfan Sulphate               | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Methoxychlor                      | mg/kg | <0.1              | <0.1              | <0.1              | <0.1              | <0.1              |
| Surrogate TCMX                    | %     | 93                | 97                | 94                | 96                | 93                |

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| Organochlorine Pesticides in soil |       |            |            |            |            |            |
|-----------------------------------|-------|------------|------------|------------|------------|------------|
| Our Reference:                    | UNITS | 135605-47  | 135605-48  | 135605-52  | 135605-56  | 135605-59  |
| Your Reference                    |       | C11        | C12        | 4996/TP201 | 4996/TP202 | 4996/TP203 |
| Depth                             |       | 0.1        | 0.1        | 0.5        | 0.15       | 0.15       |
| Composite Reference               |       | 31+32+33   | 34+35+36   | -          | -          | -          |
| Date Sampled                      |       | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                    |       | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date extracted                    | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                     | -     | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 |
| HCB                               | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| alpha-BHC                         | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| gamma-BHC                         | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| beta-BHC                          | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Heptachlor                        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| delta-BHC                         | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aldrin                            | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Heptachlor Epoxide                | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| gamma-Chlordane                   | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| alpha-chlordane                   | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Endosulfan I                      | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| pp-DDE                            | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Dieldrin                          | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Endrin                            | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| pp-DDD                            | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Endosulfan II                     | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| pp-DDT                            | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Endrin Aldehyde                   | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Endosulfan Sulphate               | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Methoxychlor                      | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Surrogate TCMX                    | %     | 93         | 95         | 95         | 95         | 94         |

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| Organochlorine Pesticides in soil |       |                         |                         |                         |                         |                         |
|-----------------------------------|-------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Our Reference:<br>Your Reference  | UNITS | 135605-61<br>4996/TP204 | 135605-63<br>4996/TP207 | 135605-65<br>4996/TP208 | 135605-69<br>4996/TP210 | 135605-74<br>4996/TP212 |
| Depth                             |       | 0.15                    | 0.15                    | 0.15                    | 0.15                    | 0.15                    |
| Composite Reference               |       | -                       | -                       | -                       | -                       | -                       |
| Date Sampled Type of sample       |       | 7/10/2015<br>Soil       | 7/10/2015<br>Soil       | 7/10/2015<br>Soil       | 7/10/2015<br>Soil       | 7/10/2015<br>Soil       |
|                                   |       |                         |                         |                         |                         |                         |
| Date extracted                    | -     | 09/10/2015              | 09/10/2015              | 09/10/2015              | 09/10/2015              | 09/10/2015              |
| Date analysed                     | -     | 10/10/2015              | 10/10/2015              | 10/10/2015              | 10/10/2015              | 10/10/2015              |
| HCB                               | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| alpha-BHC                         | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| gamma-BHC                         | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| beta-BHC                          | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Heptachlor                        | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| delta-BHC                         | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Aldrin                            | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Heptachlor Epoxide                | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| gamma-Chlordane                   | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| alpha-chlordane                   | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Endosulfan I                      | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| pp-DDE                            | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Dieldrin                          | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Endrin                            | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| pp-DDD                            | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Endosulfan II                     | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| pp-DDT                            | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Endrin Aldehyde                   | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Endosulfan Sulphate               | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Methoxychlor                      | mg/kg | <0.1                    | <0.1                    | <0.1                    | <0.1                    | <0.1                    |
| Surrogate TCMX                    | %     | 94                      | 94                      | 96                      | 94                      | 96                      |

Envirolab Reference: 135605 Revision No: R 00

| Organophosphorus Pesticides         |       |                       |                       |                       |                       |                   |
|-------------------------------------|-------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------|
| Our Reference:                      | UNITS | 135605-37             | 135605-38             | 135605-39             | 135605-40             | 135605            |
| Your Reference                      |       | C1                    | C2                    | C3                    | C4                    | C5                |
| Depth                               |       | 0.1                   | 0.1                   | 0.1                   | 0.1                   | 0.1               |
| Composite Reference<br>Date Sampled |       | 1+2+3<br>7/10/2015    | 4+5+6<br>7/10/2015    | 7+8+9<br>7/10/2015    | 10+11+12<br>7/10/2015 | 13+14+<br>7/10/20 |
| Type of sample                      |       | Soil                  | Soil                  | Soil                  | Soil                  | Soil              |
| Date extracted                      | _     | 09/10/2015            | 09/10/2015            | 09/10/2015            | 09/10/2015            | 09/10/2           |
| Date analysed                       | _     | 10/10/2015            | 10/10/2015            | 10/10/2015            | 10/10/2015            | 10/10/20          |
| Azinphos-methyl (Guthion)           | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Bromophos-ethyl                     | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Chlorpyriphos                       | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Chlorpyriphos-methyl                | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Diazinon                            | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Dichlorvos                          | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Dimethoate                          | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Ethion                              | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Fenitrothion                        | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Malathion                           | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Parathion                           | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Ronnel                              | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Surrogate TCMX                      | %     | 93                    | 92                    | 94                    | 97                    | 98                |
|                                     |       |                       |                       |                       |                       |                   |
| Organophosphorus Pesticides         |       |                       |                       |                       |                       |                   |
| Our Reference:                      | UNITS | 135605-42             | 135605-43             | 135605-44             | 135605-45             | 135605            |
| Your Reference                      |       | C6                    | C7                    | C8                    | C9                    | C10               |
| Depth<br>Composite Reference        |       | 0.1                   | 0.1                   | 0.1                   | 0.1                   | 0.1               |
| Composite Reference Date Sampled    |       | 16+17+18<br>7/10/2015 | 19+20+21<br>7/10/2015 | 22+23+24<br>7/10/2015 | 25+26+27<br>7/10/2015 | 28+29+<br>7/10/20 |
| Type of sample                      |       | Soil                  | Soil                  | Soil                  | Soil                  | Soil              |
| Date extracted                      |       | 09/10/2015            | 09/10/2015            | 09/10/2015            | 09/10/2015            | 09/10/20          |
| Date analysed                       | -     | 10/10/2015            | 10/10/2015            | 10/10/2015            | 10/10/2015            | 10/10/2           |
| Azinphos-methyl (Guthion)           | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Bromophos-ethyl                     | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Chlorpyriphos                       | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Chlorpyriphos-methyl                | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Diazinon                            | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Dichlorvos                          | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Dimethoate                          | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Ethion                              | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Fenitrothion                        | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Malathion                           | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Parathion                           | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
| Ronnel                              | mg/kg | <0.1                  | <0.1                  | <0.1                  | <0.1                  | <0.1              |
|                                     |       | 1                     | 1                     | 1                     |                       | · · · · ·         |

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Surrogate TCMX

%

93

97

94

96

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93

| Organophosphorus Pesticides      |       |                   |                       |                   |                   |                       |
|----------------------------------|-------|-------------------|-----------------------|-------------------|-------------------|-----------------------|
| Our Reference:                   | UNITS | 135605-47         | 135605-48             | 135605-52         | 135605-56         | 135605-5              |
| Your Reference                   |       | C11               | C12                   | 4996/TP201        | 4996/TP202        | 4996/TP20             |
| Depth                            |       | 0.1               | 0.1                   | 0.5               | 0.15              | 0.15                  |
| Composite Reference Date Sampled |       | 31+32+33          | 34+35+36<br>7/10/2015 | -<br>7/10/2015    | -<br>7/10/2015    | -<br>7/10/201         |
| Type of sample                   |       | 7/10/2015<br>Soil | 7/10/2015<br>Soil     | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/201<br>Soil      |
| Date extracted                   | -     | 09/10/2015        | 09/10/2015            | 09/10/2015        | 09/10/2015        | 09/10/201             |
| Date analysed                    | -     | 10/10/2015        | 10/10/2015            | 10/10/2015        | 10/10/2015        | 10/10/201             |
| Azinphos-methyl (Guthion)        | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Bromophos-ethyl                  | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Chlorpyriphos                    | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Chlorpyriphos-methyl             | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Diazinon                         | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Dichlorvos                       | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Dimethoate                       | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Ethion                           | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Fenitrothion                     | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Malathion                        | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Parathion                        | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Ronnel                           | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Surrogate TCMX                   | %     | 93                | 95                    | 95                | 95                | 94                    |
| Ourrogate TOWK                   | 70    |                   |                       |                   |                   | 01                    |
| Organophosphorus Pesticides      |       |                   |                       |                   |                   |                       |
| Our Reference:                   | UNITS | 135605-61         | 135605-63             | 135605-65         | 135605-69         | 135605-7              |
| Your Reference                   |       | 4996/TP204        | 4996/TP207            | 4996/TP208        | 4996/TP210        | 4996/TP2              |
| Depth                            |       | 0.15              | 0.15                  | 0.15              | 0.15              | 0.15                  |
| Composite Reference              |       | -                 | -                     | -<br>7/10/2015    | -                 | -                     |
| Date Sampled Type of sample      |       | 7/10/2015<br>Soil | 7/10/2015<br>Soil     | 7/10/2015<br>Soil | 7/10/2015<br>Soil | 7/10/201<br>Soil      |
| Date extracted                   | -     | 09/10/2015        | 09/10/2015            | 09/10/2015        | 09/10/2015        | 09/10/20 <sup>-</sup> |
| Date analysed                    | -     | 10/10/2015        | 10/10/2015            | 10/10/2015        | 10/10/2015        | 10/10/20              |
| Azinphos-methyl (Guthion)        | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Bromophos-ethyl                  | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Chlorpyriphos                    | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Chlorpyriphos-methyl             | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Diazinon                         | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Dichlorvos                       | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Dimethoate                       | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
|                                  |       |                   |                       |                   |                   |                       |
| Ethion                           | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Fenitrothion                     | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
| Malathion                        | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |
|                                  | I     |                   | · ~0 1                | ı ~0.1            | -0.4              |                       |
| Parathion                        | mg/kg | <0.1              | <0.1                  | <0.1              | <0.1              | <0.1                  |

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Ronnel

Surrogate TCMX

mg/kg

%

<0.1

94

<0.1

94

<0.1

96

<0.1

94

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<0.1

96

| PCBs in Soil        |       |            |            |            |            |            |
|---------------------|-------|------------|------------|------------|------------|------------|
| Our Reference:      | UNITS | 135605-52  | 135605-56  | 135605-59  | 135605-61  | 135605-63  |
| Your Reference      |       | 4996/TP201 | 4996/TP202 | 4996/TP203 | 4996/TP204 | 4996/TP207 |
| Depth               |       | 0.5        | 0.15       | 0.15       | 0.15       | 0.15       |
| Composite Reference |       | -          | -          | -          | -          | -          |
| Date Sampled        |       | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample      |       | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date extracted      | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed       | -     | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 | 10/10/2015 |
| Aroclor 1016        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aroclor 1221        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aroclor 1232        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aroclor 1242        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aroclor 1248        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aroclor 1254        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Aroclor 1260        | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Surrogate TCLMX     | %     | 95         | 95         | 94         | 94         | 94         |

| PCBs in Soil        |       |            |            |            |
|---------------------|-------|------------|------------|------------|
| Our Reference:      | UNITS | 135605-65  | 135605-69  | 135605-74  |
| Your Reference      |       | 4996/TP208 | 4996/TP210 | 4996/TP212 |
| Depth               |       | 0.15       | 0.15       | 0.15       |
| Composite Reference |       | -          | -          | -          |
| Date Sampled        |       | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample      |       | Soil       | Soil       | Soil       |
| Date extracted      | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed       | -     | 10/10/2015 | 10/10/2015 | 10/10/2015 |
| Aroclor 1016        | mg/kg | <0.1       | <0.1       | <0.1       |
| Aroclor 1221        | mg/kg | <0.1       | <0.1       | <0.1       |
| Aroclor 1232        | mg/kg | <0.1       | <0.1       | <0.1       |
| Aroclor 1242        | mg/kg | <0.1       | <0.1       | <0.1       |
| Aroclor 1248        | mg/kg | <0.1       | <0.1       | <0.1       |
| Aroclor 1254        | mg/kg | <0.1       | <0.1       | <0.1       |
| Aroclor 1260        | mg/kg | <0.1       | <0.1       | <0.1       |
| Surrogate TCLMX     | %     | 96         | 94         | 96         |

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| Acid Extractable metals in soil |       |            |            |            |            |            |
|---------------------------------|-------|------------|------------|------------|------------|------------|
|                                 |       |            |            |            |            |            |
| Our Reference:                  | UNITS | 135605-37  | 135605-38  | 135605-39  | 135605-40  | 135605-41  |
| Your Reference                  |       | C1         | C2         | C3         | C4         | C5         |
| Depth                           |       | 0.1        | 0.1        | 0.1        | 0.1        | 0.1        |
| Composite Reference             |       | 1+2+3      | 4+5+6      | 7+8+9      | 10+11+12   | 13+14+15   |
| Date Sampled                    |       | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                  |       | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date prepared                   | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                   | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Arsenic                         | mg/kg | 6          | 8          | 9          | <4         | 5          |
| Cadmium                         | mg/kg | <0.4       | <0.4       | <0.4       | <0.4       | <0.4       |
| Chromium                        | mg/kg | 19         | 32         | 18         | 16         | 16         |
| Copper                          | mg/kg | 11         | 9          | 22         | 8          | 14         |
| Lead                            | mg/kg | 33         | 24         | 22         | 18         | 19         |
| Mercury                         | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Nickel                          | mg/kg | 5          | 6          | 12         | 5          | 7          |
| Zinc                            | mg/kg | 44         | 30         | 54         | 19         | 33         |

| Acid Extractable metals in soil                 |       |                               |                               |                               |                               |                               |
|---|-------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Our Reference:                                  | UNITS | 135605-42                     | 135605-43                     | 135605-44                     | 135605-45                     | 135605-46                     |
| Your Reference                                  |       | C6                            | C7                            | C8                            | C9                            | C10                           |
| Depth   |       | 0.1                           | 0.1                           | 0.1                           | 0.1                           | 0.1                           |
| Composite Reference Date Sampled Type of sample |       | 16+17+18<br>7/10/2015<br>Soil | 19+20+21<br>7/10/2015<br>Soil | 22+23+24<br>7/10/2015<br>Soil | 25+26+27<br>7/10/2015<br>Soil | 28+29+30<br>7/10/2015<br>Soil |
| Date prepared                                   | -     | 09/10/2015                    | 09/10/2015                    | 09/10/2015                    | 09/10/2015                    | 09/10/2015                    |
| Date analysed                                   | -     | 09/10/2015                    | 09/10/2015                    | 09/10/2015                    | 09/10/2015                    | 09/10/2015                    |
| Arsenic   | mg/kg | 9                             | 8                             | 16                            | 8                             | 7                             |
| Cadmium   | mg/kg | <0.4                          | <0.4                          | <0.4                          | <0.4                          | <0.4                          |
| Chromium  | mg/kg | 36                            | 23                            | 21                            | 19                            | 15                            |
| Copper  | mg/kg | 10                            | 14                            | 32                            | 20                            | 26                            |
| Lead  | mg/kg | 29                            | 25                            | 33                            | 24                            | 21                            |
| Mercury   | mg/kg | <0.1                          | <0.1                          | <0.1                          | <0.1                          | <0.1                          |
| Nickel  | mg/kg | 7                             | 8                             | 8                             | 11                            | 12                            |
| Zinc  | mg/kg | 25                            | 28                            | 43                            | 38                            | 49                            |

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| A sid Extrastable restals in sail |       |            |            |            |            |            |
|-----------------------------------|-------|------------|------------|------------|------------|------------|
| Acid Extractable metals in soil   |       |            |            |            |            |            |
| Our Reference:                    | UNITS | 135605-47  | 135605-48  | 135605-52  | 135605-56  | 135605-59  |
| Your Reference                    |       | C11        | C12        | 4996/TP201 | 4996/TP202 | 4996/TP203 |
| Depth                             |       | 0.1        | 0.1        | 0.5        | 0.15       | 0.15       |
| Composite Reference               |       | 31+32+33   | 34+35+36   | -          | -          | -          |
| Date Sampled                      |       | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                    |       | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date prepared                     | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                     | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Arsenic                           | mg/kg | 8          | 8          | 4          | 6          | 7          |
| Cadmium                           | mg/kg | <0.4       | <0.4       | <0.4       | <0.4       | <0.4       |
| Chromium                          | mg/kg | 16         | 19         | 20         | 20         | 20         |
| Copper                            | mg/kg | 24         | 14         | 12         | 11         | 14         |
| Lead                              | mg/kg | 22         | 24         | 10         | 29         | 31         |
| Mercury                           | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Nickel                            | mg/kg | 16         | 10         | 5          | 5          | 7          |
| Zinc                              | mg/kg | 45         | 27         | 10         | 53         | 43         |

| Acid Extractable metals in soil |       |            |            |            |            |            |
|---------------------------------|-------|------------|------------|------------|------------|------------|
| Our Reference:                  | UNITS | 135605-61  | 135605-63  | 135605-65  | 135605-69  | 135605-74  |
| Your Reference                  |       | 4996/TP204 | 4996/TP207 | 4996/TP208 | 4996/TP210 | 4996/TP212 |
| Depth                           |       | 0.15       | 0.15       | 0.15       | 0.15       | 0.15       |
| Composite Reference             |       | -          | -          | -          | -          | -          |
| Date Sampled                    |       | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample                  |       | Soil       | Soil       | Soil       | Soil       | Soil       |
| Date prepared                   | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Date analysed                   | -     | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 | 09/10/2015 |
| Arsenic                         | mg/kg | 11         | 7          | 5          | 7          | 10         |
| Cadmium                         | mg/kg | <0.4       | <0.4       | <0.4       | <0.4       | <0.4       |
| Chromium                        | mg/kg | 24         | 20         | 18         | 23         | 35         |
| Copper                          | mg/kg | 25         | 14         | 10         | 8          | 13         |
| Lead                            | mg/kg | 28         | 29         | 15         | 24         | 25         |
| Mercury                         | mg/kg | <0.1       | <0.1       | <0.1       | <0.1       | <0.1       |
| Nickel                          | mg/kg | 6          | 7          | 7          | 5          | 8          |
| Zinc                            | mg/kg | 34         | 32         | 15         | 22         | 19         |

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| Acid Extractable metals in soil |       |             |             |
|---------------------------------|-------|-------------|-------------|
| Our Reference:                  | UNITS | 135605-79   | 135605-82   |
| Your Reference                  |       | 4996/DUP101 | 4996/DUP104 |
| Depth                           |       | -           | -           |
| Composite Reference             |       | -           | -           |
| Date Sampled                    |       | 7/10/2015   | 7/10/2015   |
| Type of sample                  |       | Soil        | Soil        |
| Date prepared                   | -     | 09/10/2015  | 09/10/2015  |
| Date analysed                   | -     | 09/10/2015  | 09/10/2015  |
| Arsenic                         | mg/kg | 5           | 6           |
| Cadmium                         | mg/kg | <0.4        | <0.4        |
| Chromium                        | mg/kg | 19          | 22          |
| Copper                          | mg/kg | 11          | 14          |
| Lead                            | mg/kg | 19          | 16          |
| Mercury                         | mg/kg | <0.1        | <0.1        |
| Nickel                          | mg/kg | 6           | 7           |
| Zinc                            | mg/kg | 26          | 20          |

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|  | Chefft Refere |   | 4990000011  | o 1, o o a a 11 o 1                                       | 9.0   |   |
|--|---------------|---|---|---|---|---|
| Moisture Our Reference: Your Reference Depth Composite Reference Date Sampled Type of sample | UNITS         | 135605-37<br>C1<br>0.1<br>1+2+3<br>7/10/2015<br>Soil      | 135605-38<br>C2<br>0.1<br>4+5+6<br>7/10/2015<br>Soil      | 135605-39<br>C3<br>0.1<br>7+8+9<br>7/10/2015<br>Soil      | 135605-40<br>C4<br>0.1<br>10+11+12<br>7/10/2015<br>Soil   | 135605-41<br>C5<br>0.1<br>13+14+15<br>7/10/2015<br>Soil   |
| Date prepared  Date analysed  Moisture   | -<br>-<br>%   | 9/10/2015<br>12/10/2015<br>13                             | 9/10/2015<br>12/10/2015<br>14                             | 9/10/2015<br>12/10/2015<br>17                             | 9/10/2015<br>12/10/2015<br>19                             | 9/10/2015<br>12/10/2015<br>26                             |
| Moisture Our Reference: Your Reference Depth Composite Reference Date Sampled Type of sample | UNITS         | 135605-42<br>C6<br>0.1<br>16+17+18<br>7/10/2015<br>Soil   | 135605-43<br>C7<br>0.1<br>19+20+21<br>7/10/2015<br>Soil   | 135605-44<br>C8<br>0.1<br>22+23+24<br>7/10/2015<br>Soil   | 135605-45<br>C9<br>0.1<br>25+26+27<br>7/10/2015<br>Soil   | 135605-46<br>C10<br>0.1<br>28+29+30<br>7/10/2015<br>Soil  |
| Date prepared  Date analysed  Moisture   | -<br>-<br>%   | 9/10/2015<br>12/10/2015<br>13                             | 9/10/2015<br>12/10/2015<br>12                             | 9/10/2015<br>12/10/2015<br>10                             | 9/10/2015<br>12/10/2015<br>9.8                            | 9/10/2015<br>12/10/2015<br>21                             |
| Moisture Our Reference: Your Reference Depth Composite Reference Date Sampled Type of sample | UNITS         | 135605-47<br>C11<br>0.1<br>31+32+33<br>7/10/2015<br>Soil  | 135605-48<br>C12<br>0.1<br>34+35+36<br>7/10/2015<br>Soil  | 135605-52<br>4996/TP201<br>0.5<br>-<br>7/10/2015<br>Soil  | 135605-56<br>4996/TP202<br>0.15<br>-<br>7/10/2015<br>Soil | 135605-59<br>4996/TP203<br>0.15<br>-<br>7/10/2015<br>Soil |
| Date prepared  Date analysed  Moisture   | -<br>-<br>%   | 9/10/2015<br>12/10/2015<br>18                             | 9/10/2015<br>12/10/2015<br>24                             | 9/10/2015<br>12/10/2015<br>19                             | 9/10/2015<br>12/10/2015<br>12                             | 9/10/2015<br>12/10/2015<br>16                             |
| Moisture Our Reference: Your Reference Depth Composite Reference Date Sampled Type of sample | UNITS         | 135605-61<br>4996/TP204<br>0.15<br>-<br>7/10/2015<br>Soil | 135605-63<br>4996/TP207<br>0.15<br>-<br>7/10/2015<br>Soil | 135605-65<br>4996/TP208<br>0.15<br>-<br>7/10/2015<br>Soil | 135605-69<br>4996/TP210<br>0.15<br>-<br>7/10/2015<br>Soil | 135605-74<br>4996/TP212<br>0.15<br>-<br>7/10/2015<br>Soil |
| Date prepared  Date analysed  Moisture   | -<br>-<br>%   | 9/10/2015<br>12/10/2015<br>15                             | 9/10/2015<br>12/10/2015<br>19                             | 9/10/2015<br>12/10/2015<br>19                             | 9/10/2015<br>12/10/2015<br>16                             | 9/10/2015<br>12/10/2015<br>12                             |

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| Moisture            |       |             |             |
|---------------------|-------|-------------|-------------|
| Our Reference:      | UNITS | 135605-79   | 135605-82   |
| Your Reference      |       | 4996/DUP101 | 4996/DUP104 |
| Depth               |       | -           | -           |
| Composite Reference |       | -           | -           |
| Date Sampled        |       | 7/10/2015   | 7/10/2015   |
| Type of sample      |       | Soil        | Soil        |
| Date prepared       | -     | 9/10/2015   | 9/10/2015   |
| Date analysed       | -     | 12/10/2015  | 12/10/2015  |
| Moisture            | %     | 11          | 21          |

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| Asbestos ID - soils |        |                 |                 |                 |                 |                 |
|---------------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                     | LINITO | 40ECOE EO       | 10EC0E EC       | 125005 50       | 105005.01       | 40EC0E C0       |
| Our Reference:      | UNITS  | 135605-52       | 135605-56       | 135605-59       | 135605-61       | 135605-63       |
| Your Reference      |        | 4996/TP201      | 4996/TP202      | 4996/TP203      | 4996/TP204      | 4996/TP207      |
| Depth               |        | 0.5             | 0.15            | 0.15            | 0.15            | 0.15            |
| Composite Reference |        | -               | -               | -               | -               | -               |
| Date Sampled        |        | 7/10/2015       | 7/10/2015       | 7/10/2015       | 7/10/2015       | 7/10/2015       |
| Type of sample      |        | Soil            | Soil            | Soil            | Soil            | Soil            |
| Date analysed       | -      | 13/10/2015      | 13/10/2015      | 13/10/2015      | 13/10/2015      | 13/10/2015      |
| Sample mass tested  | g      | Approx. 35g     | Approx. 35g     | Approx. 35g     | Approx. 45g     | Approx. 35g     |
| Sample Description  | -      | Brown           | Brown           | Brown           | Brown           | Brown           |
|                     |        | coarse grain    |
|                     |        | soil & rocks    |
| Asbestos ID in soil | -      | No asbestos     |
|                     |        | detected at     |
|                     |        | reporting limit |
|                     |        | of 0.1g/kg      |
|                     |        | Organic         | Organic         | Organic         | Organic         | Organic         |
|                     |        | fibres          | fibres          | fibres          | fibres          | fibres          |
|                     |        | detected        | detected        | detected        | detected        | detected        |
| Trace Analysis      | -      | No asbestos     |
|                     |        | detected        | detected        | detected        | detected        | detected        |

| Asbestos ID - soils |       |  |  |  |
|---------------------|-------|--|--|--|
| Our Reference:      | UNITS | 135605-65  | 135605-69  | 135605-74  |
| Your Reference      |       | 4996/TP208   | 4996/TP210   | 4996/TP212   |
| Depth               |       | 0.15   | 0.15   | 0.15   |
| Composite Reference |       | -  | -  | -  |
| Date Sampled        |       | 7/10/2015  | 7/10/2015  | 7/10/2015  |
| Type of sample      |       | Soil   | Soil   | Soil   |
| Date analysed       | -     | 13/10/2015   | 13/10/2015   | 13/10/2015   |
| Sample mass tested  | g     | Approx. 35g  | Approx. 35g  | Approx. 35g  |
| Sample Description  | -     | Brown<br>coarse grain<br>soil & rocks  | Brown<br>coarse grain<br>soil & rocks  | Brown<br>coarse grain<br>soil & rocks  |
| Asbestos ID in soil | -     | No asbestos<br>detected at<br>reporting limit<br>of 0.1g/kg<br>Organic<br>fibres<br>detected | No asbestos<br>detected at<br>reporting limit<br>of 0.1g/kg<br>Organic<br>fibres<br>detected | No asbestos<br>detected at<br>reporting limit<br>of 0.1g/kg<br>Organic<br>fibres<br>detected |
| Trace Analysis      | -     | No asbestos<br>detected  | No asbestos<br>detected  | No asbestos<br>detected  |

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| Method ID              | Methodology Summary   |
|------------------------|---|
| Org-016                | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.   |
| Org-014                | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.  |
| Org-003                | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.  F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater  |
|                        | (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.  |
| Org-012 subset         | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.  For soil results:-   |
|                        | 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <pql actually="" and="" approach="" are="" at="" be="" calculation="" can="" conservative="" contribute="" false="" give="" given="" is="" may="" most="" not="" pahs="" positive="" pql.="" present.<="" td="" teq="" teqs="" that="" the="" this="" to=""></pql> |
|                        | 2. 'TEQ zero' values are assuming all contributing PAHs reported as <pql and="" approach="" are="" below="" but="" calculation="" conservative="" contribute="" false="" is="" least="" more="" negative="" pahs="" pql.<="" present="" susceptible="" td="" teq="" teqs="" that="" the="" this="" to="" when="" zero.=""></pql>      |
|                        | 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <pql a="" above.<="" and="" approaches="" are="" between="" conservative="" half="" hence="" least="" mid-point="" most="" pql.="" stipulated="" td="" the=""></pql>  |
|                        | Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.  |
| Org-005                | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.   |
| Org-008                | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.   |
| Org-006                | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.   |
| Metals-020 ICP-<br>AES | Determination of various metals by ICP-AES.   |
| Metals-021 CV-<br>AAS  | Determination of Mercury by Cold Vapour AAS.  |
| Inorg-008              | Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.  |
| ASB-001                | Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.  |

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| QUALITYCONTROL                     | UNITS | PQL | METHOD            | Blank          | Duplicate        | Duplicate results         | Spike Sm# | Spike %             |
|------------------------------------|-------|-----|-------------------|----------------|------------------|---------------------------|-----------|---------------------|
| vTRH(C6-C10)/BTEXNin<br>Soil       |       |     |                   |                | Sm#              | Base II Duplicate II %RPD |           | Recovery            |
| Date extracted                     | -     |     |                   | 09/10/2<br>015 | 135605-52        | 09/10/2015    09/10/2015  | LCS-1     | 09/10/2015          |
| Date analysed                      | -     |     |                   | 10/10/2<br>015 | 135605-52        | 10/10/2015  10/10/2015    | LCS-1     | 10/10/2015          |
| TRHC6 - C9                         | mg/kg | 25  | Org-016           | <25            | 135605-52        | <25  <25                  | LCS-1     | 103%                |
| TRHC6 - C10                        | mg/kg | 25  | Org-016           | <25            | 135605-52        | <25  <25                  | LCS-1     | 103%                |
| Benzene                            | mg/kg | 0.2 | Org-016           | <0.2           | 135605-52        | <0.2  <0.2                | LCS-1     | 97%                 |
| Toluene                            | mg/kg | 0.5 | Org-016           | <0.5           | 135605-52        | <0.5  <0.5                | LCS-1     | 104%                |
| Ethylbenzene                       | mg/kg | 1   | Org-016           | <1             | 135605-52        | <1  <1                    | LCS-1     | 103%                |
| m+p-xylene                         | mg/kg | 2   | Org-016           | <2             | 135605-52        | <2  <2                    | LCS-1     | 106%                |
| o-Xylene                           | mg/kg | 1   | Org-016           | <1             | 135605-52        | <1  <1                    | LCS-1     | 106%                |
| naphthalene                        | mg/kg | 1   | Org-014           | <1             | 135605-52        | <1  <1                    | [NR]      | [NR]                |
| Surrogate aaa-<br>Trifluorotoluene | %     |     | Org-016           | 91             | 135605-52        | 96    97    RPD: 1        | LCS-1     | 105%                |
| QUALITYCONTROL                     | UNITS | PQL | METHOD            | Blank          | Duplicate        | Duplicate results         | Spike Sm# | Spike %             |
| svTRH (C10-C40) in Soil            |       |     |                   |                | Sm#              | Base II Duplicate II %RPD |           | Recovery            |
| Date extracted                     | -     |     |                   | 09/10/2<br>015 | 135605-52        | 09/10/2015    09/10/2015  | LCS-1     | 09/10/2015          |
| Date analysed                      | -     |     |                   | 09/10/2<br>015 | 135605-52        | 09/10/2015  09/10/2015    | LCS-1     | 09/10/2015          |
| TRHC 10 - C14                      | mg/kg | 50  | Org-003           | <50            | 135605-52        | <50  <50                  | LCS-1     | 130%                |
| TRHC 15 - C28                      | mg/kg | 100 | Org-003           | <100           | 135605-52        | <100  <100                | LCS-1     | 114%                |
| TRHC29 - C36                       | mg/kg | 100 | Org-003           | <100           | 135605-52        | <100  <100                | LCS-1     | 116%                |
| TRH>C10-C16                        | mg/kg | 50  | Org-003           | <50            | 135605-52        | <50  <50                  | LCS-1     | 130%                |
| TRH>C16-C34                        | mg/kg | 100 | Org-003           | <100           | 135605-52        | <100  <100                | LCS-1     | 114%                |
| TRH>C34-C40                        | mg/kg | 100 | Org-003           | <100           | 135605-52        | <100  <100                | LCS-1     | 116%                |
| Surrogate o-Terphenyl              | %     |     | Org-003           | 100            | 135605-52        | 90  90  RPD:0             | LCS-1     | 115%                |
| QUALITYCONTROL                     | UNITS | PQL | METHOD            | Blank          | Duplicate<br>Sm# | Duplicate results         | Spike Sm# | Spike %<br>Recovery |
| PAHs in Soil                       |       |     |                   |                |                  | Base II Duplicate II %RPD |           |                     |
| Date extracted                     | -     |     |                   | 09/10/2<br>015 | 135605-52        | 09/10/2015  09/10/2015    | LCS-1     | 09/10/2015          |
| Date analysed                      | -     |     |                   | 09/10/2<br>015 | 135605-52        | 09/10/2015  09/10/2015    | LCS-1     | 09/10/2015          |
| Naphthalene                        | mg/kg | 0.1 | Org-012<br>subset | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 102%                |
| Acenaphthylene                     | mg/kg | 0.1 | Org-012           | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |

subset Org-012

subset Org-012

subset Org-012

subset Org-012

subset

Org-012

subset

<0.1

<0.1

<0.1

<0.1

<0.1

135605-52

135605-52

135605-52

135605-52

135605-52

<0.1||<0.1

<0.1||<0.1

<0.1||<0.1

<0.1||<0.1

<0.1||<0.1

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mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

0.1

0.1

0.1

0.1

0.1

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[NR]

108%

105%

[NR]

92%

[NR]

LCS-1

LCS-1

[NR]

LCS-1

Acenaphthene

Fluorene

Phenanthrene

Anthracene

Fluoranthene

| QUALITYCONTROL                       | UNITS | PQL  | METHOD            | Blank          | Duplicate | 01V01, South Werring      | Spike Sm#   | Spike %      |
|--------------------------------------|-------|------|-------------------|----------------|-----------|---------------------------|-------------|--------------|
| QUALITICONTROL                       | OINIO | r √L | INETUOD           | DIALIK         | Sm#       | Duplicate results         | Spike Sifi# | Recovery     |
| PAHs in Soil                         |       |      |                   |                |           | Base II Duplicate II %RPD |             |              |
| Pyrene                               | mg/kg | 0.1  | Org-012<br>subset | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 94%          |
| Benzo(a)anthracene                   | mg/kg | 0.1  | Org-012<br>subset | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Chrysene                             | mg/kg | 0.1  | Org-012<br>subset | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 92%          |
| Benzo(b,j+k)<br>fluoranthene         | mg/kg | 0.2  | Org-012<br>subset | <0.2           | 135605-52 | <0.2  <0.2                | [NR]        | [NR]         |
| Benzo(a)pyrene                       | mg/kg | 0.05 | Org-012<br>subset | <0.05          | 135605-52 | <0.05  <0.05              | LCS-1       | 116%         |
| Indeno(1,2,3-c,d)pyrene              | mg/kg | 0.1  | Org-012<br>subset | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Dibenzo(a,h)anthracene               | mg/kg | 0.1  | Org-012<br>subset | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Benzo(g,h,i)perylene                 | mg/kg | 0.1  | Org-012<br>subset | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Surrogate p-Terphenyl-<br>d14        | %     |      | Org-012<br>subset | 94             | 135605-52 | 93    100    RPD: 7       | LCS-1       | 110%         |
| QUALITYCONTROL                       | UNITS | PQL  | METHOD            | Blank          | Duplicate | Duplicate results         | Spike Sm#   | Spike %      |
| Organochlorine<br>Pesticides in soil |       |      |                   |                | Sm#       | Base II Duplicate II %RPD |             | Recovery     |
| Date extracted                       | -     |      |                   | 09/10/2<br>015 | 135605-52 | 09/10/2015  09/10/2015    | LCS-1       | 09/10/2015   |
| Date analysed                        | -     |      |                   | 10/10/2<br>015 | 135605-52 | 10/10/2015    10/10/2015  | LCS-1       | 10/10/2015   |
| HCB                                  | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| alpha-BHC                            | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 101%         |
| gamma-BHC                            | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| beta-BHC                             | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 88%          |
| Heptachlor                           | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 90%          |
| delta-BHC                            | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Aldrin                               | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 92%          |
| Heptachlor Epoxide                   | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 90%          |
| gamma-Chlordane                      | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| alpha-chlordane                      | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Endosulfan I                         | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| pp-DDE                               | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 87%          |
| Dieldrin                             | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 119%         |
| Endrin                               | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 105%         |
| pp-DDD                               | ŀ     | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 97%          |
| рр-ооо<br>Endosulfan II              | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                |             | 97 %<br>[NR] |
|                                      | mg/kg |      | _                 |                |           |                           | [NR]        |              |
| pp-DDT                               | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Endrin Aldehyde                      | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Endosulfan Sulphate                  | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | LCS-1       | 102%         |
| Methoxychlor                         | mg/kg | 0.1  | Org-005           | <0.1           | 135605-52 | <0.1  <0.1                | [NR]        | [NR]         |
| Surrogate TCMX                       | %     |      | Org-005           | 99             | 135605-52 | 95  95  RPD:0             | LCS-1       | 118%         |

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|--|-------|-----|---------|----------------|------------------|---------------------------|-----------|---------------------|
| QUALITYCONTROL                                       | UNITS | PQL | METHOD  | Blank          | Duplicate<br>Sm# | Duplicate results         | Spike Sm# | Spike %<br>Recovery |
| Organophosphorus<br>Pesticides                       |       |     |         |                |                  | Base II Duplicate II %RPD |           |                     |
| Date extracted                                       | -     |     |         | 09/10/2<br>015 | 135605-52        | 09/10/2015   09/10/2015   | LCS-1     | 09/10/2015          |
| Date analysed  | -     |     |         | 10/10/2<br>015 | 135605-52        | 10/10/2015  10/10/2015    | LCS-1     | 10/10/2015          |
| Azinphos-methyl<br>(Guthion)                         | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 96%                 |
| Bromophos-ethyl                                      | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Chlorpyriphos  | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 98%                 |
| Chlorpyriphos-methyl                                 | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Diazinon   | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Dichlorvos   | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 107%                |
| Dimethoate   | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Ethion   | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 101%                |
| Fenitrothion   | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 120%                |
| Malathion  | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 129%                |
| Parathion  | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 72%                 |
| Ronnel   | mg/kg | 0.1 | Org-008 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Surrogate TCMX                                       | %     |     | Org-008 | 99             | 135605-52        | 95  95  RPD:0             | LCS-1     | 118%                |
| QUALITYCONTROL                                       | UNITS | PQL | METHOD  | Blank          | Duplicate<br>Sm# | Duplicate results         | Spike Sm# | Spike %<br>Recovery |
| PCBs in Soil   |       |     |         |                |                  | Base II Duplicate II %RPD |           |                     |
| Date extracted                                       | -     |     |         | 09/10/2<br>015 | 135605-52        | 09/10/2015   09/10/2015   | LCS-1     | 09/10/2015          |
| Date analysed  | -     |     |         | 10/10/2<br>015 | 135605-52        | 10/10/2015  10/10/2015    | LCS-1     | 10/10/2015          |
| Aroclor 1016   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Aroclor 1221   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Aroclor 1232   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Aroclor 1242   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Aroclor 1248   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Aroclor 1254   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | LCS-1     | 108%                |
| Aroclor 1260   | mg/kg | 0.1 | Org-006 | <0.1           | 135605-52        | <0.1  <0.1                | [NR]      | [NR]                |
| Surrogate TCLMX                                      | %     |     | Org-006 | 99             | 135605-52        | 95  95  RPD:0             | LCS-1     | 118%                |

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| QUALITYCONTROL                     | UNITS | PQL | METHOD                | Blank          | Duplicate<br>Sm#    | Duplicate results         | Spike Sm# | Spike %<br>Recovery |
|------------------------------------|-------|-----|-----------------------|----------------|---------------------|---------------------------|-----------|---------------------|
| Acid Extractable metals in soil    |       |     |                       |                | <i></i>             | Base II Duplicate II %RPD |           |                     |
| Date prepared                      | -     |     |                       | 09/10/2<br>015 | 135605-52           | 09/10/2015  09/10/2015    | LCS-4     | 09/10/2015          |
| Date analysed                      | -     |     |                       | 09/10/2<br>015 | 135605-52           | 09/10/2015  09/10/2015    | LCS-4     | 09/10/2015          |
| Arsenic                            | mg/kg | 4   | Metals-020<br>ICP-AES | <4             | 135605-52           | 4  5  RPD:22              | LCS-4     | 105%                |
| Cadmium                            | mg/kg | 0.4 | Metals-020<br>ICP-AES | <0.4           | 135605-52           | <0.4  <0.4                | LCS-4     | 98%                 |
| Chromium                           | mg/kg | 1   | Metals-020<br>ICP-AES | <1             | 135605-52           | 20  22  RPD:10            | LCS-4     | 102%                |
| Copper                             | mg/kg | 1   | Metals-020<br>ICP-AES | <1             | 135605-52           | 12  12  RPD:0             | LCS-4     | 106%                |
| Lead                               | mg/kg | 1   | Metals-020<br>ICP-AES | <1             | 135605-52           | 10  11  RPD:10            | LCS-4     | 103%                |
| Mercury                            | mg/kg | 0.1 | Metals-021<br>CV-AAS  | <0.1           | 135605-52           | <0.1  <0.1                | LCS-4     | 91%                 |
| Nickel                             | mg/kg | 1   | Metals-020<br>ICP-AES | <1             | 135605-52           | 5  6  RPD:18              | LCS-4     | 99%                 |
| Zinc                               | mg/kg | 1   | Metals-020<br>ICP-AES | <1             | 135605-52           | 10  10  RPD:0             | LCS-4     | 100%                |
| QUALITYCONTROL                     | UNITS | 3   | Dup. Sm#              |                | Duplicate           |                           | 1         | •                   |
| vTRH(C6-C10)/BTEXNin<br>Soil       |       |     |                       | Base+[         | Ouplicate+%RP       | D                         |           |                     |
| Date extracted                     | _     | ,   | 135605-74             | 09/10/2        | 015  09/10/201      | 5                         |           |                     |
| Date analysed                      | _     |     | 135605-74             |                | <br>:015  10/10/201 |                           |           |                     |
| TRHC6 - C9                         | mg/kg |     | 135605-74             |                | <25  <25            |                           |           |                     |
| TRHC6 - C10                        | mg/kg |     | 135605-74             |                | <25  <25            |                           |           |                     |
| Benzene                            | mg/kg |     | 135605-74             |                | ···<br><0.2  <0.2   |                           |           |                     |
| Toluene                            | mg/kg |     | 135605-74             |                | <0.5  <0.5          |                           |           |                     |
| Ethylbenzene                       | mg/kg |     | 135605-74             | <1  <1         |                     |                           |           |                     |
| m+p-xylene                         | mg/kg |     | 135605-74             |                | <2  <2              |                           |           |                     |
| o-Xylene                           | mg/kg |     | 135605-74             |                | <1  <1              |                           |           |                     |
| naphthalene                        | mg/kg |     | 135605-74             |                | ''<br><1  <1        |                           |           |                     |
| Surrogate aaa-<br>Trifluorotoluene | %     |     | 135605-74             | 99             | <br>  95  RPD:4     |                           |           |                     |

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|                           |       | Client Reference | e: P1504996COC01V        |
|---------------------------|-------|------------------|--------------------------|
| QUALITYCONTROL            | UNITS | Dup.Sm#          | Duplicate                |
| svTRH (C10-C40) in Soil   |       |                  | Base + Duplicate + %RPD  |
| Date extracted            | -     | 135605-74        | 09/10/2015  09/10/2015   |
| Date analysed             | -     | 135605-74        | 10/10/2015    10/10/2015 |
| TRHC 10 - C14             | mg/kg | 135605-74        | <50  <50                 |
| TRHC 15 - C28             | mg/kg | 135605-74        | <100  <100               |
| TRHC29 - C36              | mg/kg | 135605-74        | <100  <100               |
| TRH>C10-C16               | mg/kg | 135605-74        | <50  <50                 |
| TRH>C16-C34               | mg/kg | 135605-74        | <100  <100               |
| TRH>C34-C40               | mg/kg | 135605-74        | <100  <100               |
| Surrogate o-Terphenyl     | %     | 135605-74        | 93  94  RPD:1            |
| QUALITYCONTROL            | UNITS | Dup.Sm#          | Duplicate                |
| PAHs in Soil              |       |                  | Base + Duplicate + %RPD  |
| Date extracted            | -     | 135605-74        | 09/10/2015  09/10/2015   |
| Date analysed             | -     | 135605-74        | 09/10/2015  09/10/2015   |
| Naphthalene               | mg/kg | 135605-74        | <0.1  <0.1               |
| Acenaphthylene            | mg/kg | 135605-74        | <0.1  <0.1               |
| Acenaphthene              | mg/kg | 135605-74        | <0.1  <0.1               |
| Fluorene                  | mg/kg | 135605-74        | <0.1  <0.1               |
| Phenanthrene              | mg/kg | 135605-74        | <0.1  <0.1               |
| Anthracene                | mg/kg | 135605-74        | <0.1  <0.1               |
| Fluoranthene              | mg/kg | 135605-74        | <0.1  <0.1               |
| Pyrene                    | mg/kg | 135605-74        | <0.1  <0.1               |
| Benzo(a)anthracene        | mg/kg | 135605-74        | <0.1  <0.1               |
| Chrysene                  | mg/kg | 135605-74        | <0.1  <0.1               |
| Benzo(b,j+k)fluoranthene  | mg/kg | 135605-74        | <0.2  <0.2               |
| Benzo(a)pyrene            | mg/kg | 135605-74        | <0.05  <0.05             |
| Indeno(1,2,3-c,d)pyrene   | mg/kg | 135605-74        | <0.1  <0.1               |
| Dibenzo(a,h)anthracene    | mg/kg | 135605-74        | <0.1  <0.1               |
| Benzo(g,h,i)perylene      | mg/kg | 135605-74        | <0.1  <0.1               |
| Surrogate p-Terphenyl-d14 | %     | 135605-74        | 86  84  RPD:2            |

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|                                   |       | Client Reference | e: P1504996COC01V       |
|-----------------------------------|-------|------------------|-------------------------|
| QUALITYCONTROL                    | UNITS | Dup. Sm#         | Duplicate               |
| Organochlorine Pesticides in soil |       |                  | Base + Duplicate + %RPD |
| Date extracted                    | -     | 135605-74        | 09/10/2015  09/10/2015  |
| Date analysed                     | -     | 135605-74        | 10/10/2015  10/10/2015  |
| HCB                               | mg/kg | 135605-74        | <0.1  <0.1              |
| alpha-BHC                         | mg/kg | 135605-74        | <0.1  <0.1              |
| gamma-BHC                         | mg/kg | 135605-74        | <0.1  <0.1              |
| beta-BHC                          | mg/kg | 135605-74        | <0.1  <0.1              |
| Heptachlor                        | mg/kg | 135605-74        | <0.1  <0.1              |
| delta-BHC                         | mg/kg | 135605-74        | <0.1  <0.1              |
| Aldrin                            | mg/kg | 135605-74        | <0.1  <0.1              |
| Heptachlor Epoxide                | mg/kg | 135605-74        | <0.1  <0.1              |
| gamma-Chlordane                   | mg/kg | 135605-74        | <0.1  <0.1              |
| alpha-chlordane                   | mg/kg | 135605-74        | <0.1  <0.1              |
| Endosulfan I                      | mg/kg | 135605-74        | <0.1  <0.1              |
| pp-DDE                            | mg/kg | 135605-74        | <0.1  <0.1              |
| Dieldrin                          | mg/kg | 135605-74        | <0.1  <0.1              |
| Endrin                            | mg/kg | 135605-74        | <0.1  <0.1              |
| pp-DDD                            | mg/kg | 135605-74        | <0.1  <0.1              |
| Endosulfan II                     | mg/kg | 135605-74        | <0.1  <0.1              |
| pp-DDT                            | mg/kg | 135605-74        | <0.1  <0.1              |
| Endrin Aldehyde                   | mg/kg | 135605-74        | <0.1  <0.1              |
| Endosulfan Sulphate               | mg/kg | 135605-74        | <0.1  <0.1              |
| Methoxychlor                      | mg/kg | 135605-74        | <0.1  <0.1              |
| Surrogate TCMX                    | %     | 135605-74        | 96  96  RPD:0           |

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|                                     |       | Client Reference | e: P1504996COC01V                  | or, South Werring | gton             |
|-------------------------------------|-------|------------------|------------------------------------|-------------------|------------------|
| QUALITY CONTROL<br>Organophosphorus | UNITS | Dup. Sm#         | Duplicate  Base + Duplicate + %RPD |                   |                  |
| Pesticides                          |       |                  |                                    |                   |                  |
| Date extracted                      | -     | 135605-74        | 09/10/2015  09/10/2015             |                   |                  |
| Date analysed                       | _     | 135605-74        | 10/10/2015  10/10/2015             |                   |                  |
| Azinphos-methyl (Guthion)           | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Bromophos-ethyl                     | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Chlorpyriphos                       | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Chlorpyriphos-methyl                | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Diazinon                            | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Dichlorvos                          | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Dimethoate                          | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Ethion                              | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Fenitrothion                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Malathion                           | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Parathion                           | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Ronnel                              | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Surrogate TCMX                      | %     | 135605-74        | "<br>96  96  RPD:0                 |                   |                  |
| QUALITYCONTROL                      | UNITS | Dup. Sm#         | <br>Duplicate                      |                   |                  |
| PCBs in Soil                        |       | ·                | Base + Duplicate + %RPD            |                   |                  |
| Date extracted                      | -     | 135605-74        | 09/10/2015  09/10/2015             |                   |                  |
| Date analysed                       | -     | 135605-74        | 10/10/2015  10/10/2015             |                   |                  |
| Aroclor 1016                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Aroclor 1221                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Aroclor 1232                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Aroclor 1242                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Aroclor 1248                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Aroclor 1254                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Aroclor 1260                        | mg/kg | 135605-74        | <0.1  <0.1                         |                   |                  |
| Surrogate TCLMX                     | %     | 135605-74        | 96  96  RPD:0                      |                   |                  |
| QUALITYCONTROL                      | UNITS | Dup. Sm#         | Duplicate                          | Spike Sm#         | Spike % Recovery |
| Acid Extractable metals in soil     |       |                  | Base + Duplicate + %RPD            |                   |                  |
| Date prepared                       | -     | 135605-74        | 09/10/2015  09/10/2015             | LCS-5             | 09/10/2015       |
| Date analysed                       | -     | 135605-74        | 09/10/2015  09/10/2015             | LCS-5             | 09/10/2015       |
| Arsenic                             | mg/kg | 135605-74        | 10  11  RPD:10                     | LCS-5             | 106%             |
| Cadmium                             | mg/kg | 135605-74        | <0.4  <0.4                         | LCS-5             | 100%             |
| Chromium                            | mg/kg | 135605-74        | 35  45  RPD:25                     | LCS-5             | 102%             |
| Copper                              | mg/kg | 135605-74        | 13  13  RPD:0                      | LCS-5             | 106%             |
| Lead                                | mg/kg | 135605-74        | 25  27  RPD:8                      | LCS-5             | 100%             |
| Mercury                             | mg/kg | 135605-74        | <0.1  <0.1                         | LCS-5             | 89%              |
| Nickel                              | mg/kg | 135605-74        | 8  9  RPD:12                       | LCS-5             | 98%              |
| Zinc                                | mg/kg | 135605-74        | 19  20  RPD:5                      | LCS-5             | 99%              |
| L                                   | 1     | ıl               |                                    | I.                | L                |

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|   |       | Client Reference | e: P1504996COC01V                    | 01, South Werrin | gton             |
|---|-------|------------------|--------------------------------------|------------------|------------------|
| QUALITY CONTROL Acid Extractable metals in soil   | UNITS | Dup.Sm#          | Duplicate<br>Base + Duplicate + %RPD | Spike Sm#        | Spike % Recovery |
| Date prepared                                     | -     | [NT]             | [NT]                                 | LCS-6            | 09/10/2015       |
| Date analysed                                     | -     | [NT]             | [NT]                                 | LCS-6            | 09/10/2015       |
| Arsenic   | mg/kg | [NT]             | [NT]                                 | LCS-6            | 104%             |
| Cadmium   | mg/kg | [NT]             | [NT]                                 | LCS-6            | 98%              |
| Chromium  | mg/kg | [NT]             | [NT]                                 | LCS-6            | 100%             |
| Copper  | mg/kg | [NT]             | [NT]                                 | LCS-6            | 105%             |
| Lead  | mg/kg | [NT]             | [NT]                                 | LCS-6            | 99%              |
| Mercury   | mg/kg | [NT]             | [NT]                                 | LCS-6            | 94%              |
| Nickel  | mg/kg | [NT]             | [NT]                                 | LCS-6            | 98%              |
| Zinc  | mg/kg | [NT]             | [NT]                                 | LCS-6            | 100%             |
| QUALITY CONTROL Organochlorine Pesticides in soil | UNITS | Dup.Sm#          | Duplicate<br>Base + Duplicate + %RPD | Spike Sm#        | Spike % Recovery |
| Date extracted                                    | -     | [NT]             | [NT]                                 | 135605-56        | 09/10/2015       |
| Date analysed                                     | -     | [NT]             | [NT]                                 | 135605-56        | 10/10/2015       |
| HCB   | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| alpha-BHC   | mg/kg | [NT]             | [NT]                                 | 135605-56        | 98%              |
| gamma-BHC   | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| beta-BHC  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 84%              |
| Heptachlor  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 84%              |
| delta-BHC   | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| Aldrin  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 89%              |
| Heptachlor Epoxide                                | mg/kg | [NT]             | [NT]                                 | 135605-56        | 86%              |
| gamma-Chlordane                                   | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| alpha-chlordane                                   | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| Endosulfan I                                      | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| pp-DDE  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 85%              |
| Dieldrin  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 116%             |
| Endrin  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 100%             |
| pp-DDD  | mg/kg | [NT]             | [NT]                                 | 135605-56        | 94%              |
| Endosulfan II                                     | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| pp-DDT  | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| Endrin Aldehyde                                   | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| Endosulfan Sulphate                               | mg/kg | [NT]             | [NT]                                 | 135605-56        | 87%              |
| Methoxychlor                                      | mg/kg | [NT]             | [NT]                                 | [NR]             | [NR]             |
| Surrogate TCMX                                    | %     | [NT]             | [NT]                                 | 135605-56        | 94%              |

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|---|-------|-----------------|--------------------------------------|------------------|------------------|
| QUALITY CONTROL Organophosphorus Pesticides     | UNITS | Dup. Sm#        | Duplicate<br>Base + Duplicate + %RPD | SpikeSm#         | Spike % Recovery |
| - r esticides                                   |       |                 |                                      |                  |                  |
| Date extracted                                  | -     | [NT]            | [NT]                                 | 135605-56        | 09/10/2015       |
| Date analysed                                   | -     | [NT]            | [NT]                                 | 135605-56        | 10/10/2015       |
| Azinphos-methyl (Guthion)                       | mg/kg | [NT]            | [NT]                                 | 135605-56        | 70%              |
| Bromophos-ethyl                                 | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Chlorpyriphos                                   | mg/kg | [NT]            | [NT]                                 | 135605-56        | 91%              |
| Chlorpyriphos-methyl                            | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Diazinon  | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Dichlorvos                                      | mg/kg | [NT]            | [NT]                                 | 135605-56        | 96%              |
| Dimethoate                                      | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Ethion  | mg/kg | [NT]            | [NT]                                 | 135605-56        | 91%              |
| Fenitrothion                                    | mg/kg | [NT]            | [NT]                                 | 135605-56        | 105%             |
| Malathion                                       | mg/kg | [NT]            | [NT]                                 | 135605-56        | 80%              |
| Parathion                                       | mg/kg | [NT]            | [NT]                                 | 135605-56        | 69%              |
| Ronnel  | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Surrogate TCMX                                  | %     | [NT]            | [NT]                                 | 135605-56        | 94%              |
| QUALITYCONTROL                                  | UNITS | Dup. Sm#        | Duplicate                            | Spike Sm#        | Spike % Recovery |
| PCBs in Soil                                    |       |                 | Base + Duplicate + %RPD              |                  |                  |
| Date extracted                                  | -     | [NT]            | [NT]                                 | 135605-56        | 09/10/2015       |
| Date analysed                                   | -     | [NT]            | [NT]                                 | 135605-56        | 10/10/2015       |
| Aroclor 1016                                    | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Aroclor 1221                                    | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Aroclor 1232                                    | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Aroclor 1242                                    | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Aroclor 1248                                    | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Aroclor 1254                                    | mg/kg | [NT]            | [NT]                                 | 135605-56        | 101%             |
| Aroclor 1260                                    | mg/kg | [NT]            | [NT]                                 | [NR]             | [NR]             |
| Surrogate TCLMX                                 | %     | [NT]            | [NT]                                 | 135605-56        | 94%              |
| QUALITY CONTROL Acid Extractable metals in soil | UNITS | Dup.Sm#         | Duplicate Base + Duplicate + %RPD    | Spike Sm#        | Spike % Recovery |
| Date prepared                                   | -     | [NT]            | [NT]                                 | 135605-56        | 09/10/2015       |
| Date analysed                                   | -     | [NT]            | [NT]                                 | 135605-56        | 09/10/2015       |
| Arsenic   | mg/kg | [NT]            | [NT]                                 | 135605-56        | 92%              |
| Cadmium   | mg/kg | [NT]            | [NT]                                 | 135605-56        | 87%              |
| Chromium  | mg/kg | [NT]            | [NT]                                 | 135605-56        | 95%              |
| Copper  | mg/kg | [NT]            | [NT]                                 | 135605-56        | 109%             |
| Lead  | mg/kg | [NT]            | [NT]                                 | 135605-56        | ##               |
| Mercury   | mg/kg | [NT]            | [NT]                                 | 135605-56        | 92%              |
| Nickel  | mg/kg | [NT]            | [NT]                                 | 135605-56        | 86%              |
| Zinc  | mg/kg | [NT]            | [NT]                                 | 135605-56        | 109%             |
|   |       |                 |                                      |                  | <u> </u>         |

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#### **Report Comments:**

METALS\_S: ## Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Note: Samples 135605-52, 56, 59, 61, 63, 65, 69, 74 were sub-sampled from jars provided by the client.

Asbestos ID was analysed by Approved Identifier: Paul Ching Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test PQL: Practical Quantitation Limit NT: Not tested

NA: Test not required RPD: Relative Percent Difference NA: Test not required

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#### **Quality Control Definitions**

**Blank**: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

**Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

**Matrix Spike**: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

**LCS (Laboratory Control Sample)**: This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

**Surrogate Spike:** Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

#### **Laboratory Acceptance Criteria**

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Envirolab Reference: 135605 Revision No: R 00

# SOIL ANALYSIS CHAIN OF CUSTODY FORM



|                           |               |                                     |                  | <b>Additional Testing</b>        | ō                       |   |                          |                               |   |
|---------------------------|---------------|-------------------------------------|------------------|----------------------------------|-------------------------|---|--------------------------|-------------------------------|---|
| Name                      | P150499       | P1504996 – Detailed Site Assessment |                  | – South Werrington Urban Village | Village                 |   |                          |                               |   |
| Martens Contact Officer   | Ben McGiffin  | Siffin                              |                  |                                  | Contact Email           | bmcgiffin@r                                     | bmcgiffin@martens.com.au |                               |   |
|                           | Sample Date   |                                     | 7.10.2015        | Dispatch Date                    | 8.10.2015               | Turnaround Time                                 | ime                      | standard                      |   |
| Sampling and Shipping     | Our Reference |                                     | P1504996COC01V01 |                                  | Shipping Method (X)     |   | Hand                     | Courier                       | × |
|                           | On Ice (X)    | (x                                  | No Ice (X)       | × Other (X)                      | (x)                     |   |                          |                               |   |
|                           |               |                                     |                  | Laboratory                       |                         |   |                          |                               |   |
| Name                      | EnviroLab     | qp                                  |                  |                                  | -                       |   |                          |                               |   |
| Sample Delivery Address   | 12 Ashle      | 12 Ashley Street, Chatswood         | pooms            |                                  |                         |   |                          |                               |   |
| Delivery Contact          | Name          | Aileen                              | Phone            | 9910 6200                        | Fax                     | Email   |                          | ahie@envirolabservices.com.au | n |
| Please Send Report By (X) | Post          | Fax                                 | Email            | X Reportin                       | Reporting Email Address | bmcgiffin@martens.com.au jfulton@martens.com.au | s.com.au jfulton@        | martens.com.au                |   |

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Suite 201, 20 George St Hornsby NSW 2077, Australia **Ph** 02 9476 9999 **Fax** 02 9476 8767 Head Office

> www.martens.com.au MARTENS & ASSOCIATES P/L ABN 85 070 240 890 ACN 070 240 890 > mail@martens.com.au

| Sample ID            | Depth  | OCP/OPP | 8 HW | 6A | Hold                     |
|----------------------|--------|---------|------|----|--------------------------|
| Cl                   | 0.1    | ×       | ×    |    |                          |
| C2                   | 0.1    | ×       | ×    |    |                          |
| C3                   | 0.1    | ×       | ×    |    |                          |
| C4                   | 0.1    | ×       | ×    | 14 |                          |
| C5                   | 0.1    | ×       | ×    |    |                          |
| C6                   | 0.1    | ×       | ×    |    |                          |
| C7                   | 0.1    | ×       | ×    |    |                          |
| 83                   | 0.1    | ×       | ×    |    |                          |
| 60                   | 0.1    | ×       | ×    |    |                          |
| C10                  | 0.1    | ×       | ×    |    |                          |
| CII                  | 0.1    | ×       | ×    |    |                          |
| C12                  | 0.1    | ×       | ×    |    |                          |
| 4996/SS37/0.1        | 0.1    |         |      | ,  | ×                        |
| 4996/5538/0.1        | 0.1    |         |      |    | ×                        |
|                      |        |         |      |    |                          |
| 4996/TP201/0.15      | 0.15   |         |      |    |                          |
| 4996/TP201/0.5       | 0.5    |         |      | ×  |                          |
| 4996/TP201/1.0       | 1.0    |         |      |    |                          |
| 4996/TP201/1.5       | 1.5    |         |      |    |                          |
| 4996/TP201/2.0       | 2.0    |         |      |    |                          |
| 4996/TP 202/0.15     | 0.15   |         |      | ×  |                          |
| 4996/TP202/0.5       | 0.5    |         |      |    |                          |
| 4996/TP202/1.0       | 1.0    |         |      |    |                          |
| 4996/TP 203/0.15     | 0.15   |         |      | ×  |                          |
| 4996/TP203/0.5       | 0.5    |         |      |    |                          |
| 4996/TP 204/0.15     | 0.15   |         |      | ×  |                          |
| 4996/TP204/0.5       | 0.5    |         |      |    |                          |
| 4996/TP 207/0.15     | 0.15   |         |      | ×  |                          |
| 4996/TP 207/0.75     | 0.75   |         |      |    |                          |
| 4996/TP 208/0.15     | 0.15   |         |      | ×  |                          |
| 4996/TP 208/0.65     | 0.65   |         |      |    |                          |
| 4996/TP 209/0.15     | 0.15   |         |      |    |                          |
| 4996/TP209/0.5       | 0.5    |         |      |    |                          |
| 4996/TP210/0.15      | 0,015  |         |      | ×  |                          |
| 4996/TP210/0.65 (Lic | 0.65   |         |      |    |                          |
| 4996/TP210/1.5 (I'd  | m. 1.5 |         |      |    |                          |
| 4996/TP211/0.2       | 0.5    |         |      |    |                          |
| 4996/TP211/1.0       | 1.0    |         |      |    |                          |
| 4996/TP212/0.15      | 0.15   |         |      | ×  |                          |
| 4996/TP212/0.65      | 0.65   |         |      |    |                          |
| 4996/TP212/1.0       | 1.0    |         |      |    |                          |
| u c                  |        |         |      |    |                          |
| the the              |        |         |      |    |                          |
|                      |        |         |      |    | The second second second |

## SOIL ANALYSIS CHAIN OF CUSTODY

|             | ×           | ×           |             |
|-------------|-------------|-------------|-------------|
|             |             |             |             |
| ×           |             |             | ×           |
|             | 20          |             |             |
|             |             |             | 2           |
|             |             |             |             |
| 4996/DUP101 | 4996/DUP102 | 4996/DUP103 | 4996/DUP104 |
| 7           | Z           | 2           | 23          |

NOTE: SOME SAMPLES JARS HAVE BEEN LABELED AS 4946/## PLEASE REPORT ALL AS 4996

#### 13 Attachment D – Data Validation Report





| 1. | Sample Handling   |     |                  |
|----|---|-----|------------------|
|    |   | Yes | No               |
|    |   |     | (Comments below) |
| a. | Were sample holding times met?  | ✓   |                  |
| b. | Were samples in proper custody between the field and reaching the laboratory? | ✓   |                  |
| c. | Were the samples properly and adequately preserved?                           | ✓   |                  |
| d. | Were the samples received by the laboratory in good condition?                | ✓   |                  |
| CC | DMMENTS   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
|    |   |     |                  |
| Sa | mple handling is:   |     |                  |
|    | Partially   |     |                  |
|    | Satisfactory  |     |                  |

Unsatisfactory





#### 2. Precision / Accuracy Statement

|  | 103 | (Comments below) |
|--|-----|------------------|
| a. Was a NATA registered laboratory used?          | ✓   |                  |
| b. Did the laboratory perform the requested tests? | ✓   |                  |
| c. Were laboratory methods adopted NATA endorsed?  | ✓   |                  |
| d. Were appropriate test procedures followed?      | ✓   |                  |
| e. Were reporting limits satisfactory?             | ✓   |                  |
| f. Was the NATA Seal on the reports?               | ✓   |                  |
| g. Were reports signed by an authorised person?    | ✓   |                  |
| COMMENTS   |     |                  |
|  |     |                  |
|  |     |                  |
|  |     |                  |
| Precision / Accuracy of the Laboratory Report:     |     |                  |
| Partially<br>Satisfactory                          |     |                  |
| Unsatisfactor                                      | y   |                  |





#### 3. Field Quality Assurance / Quality Control (QA/QC)

- a. Number of Primary Samples analysed (does not include duplicates)
- b. Number of days of sampling
- c. Number and Type of QA/QC Samples analysed

Intra-Laboratory Field Duplicates

Inter-Laboratory Field triplicates

Trip Blanks

Wash Blanks

Other (Field Blanks, Spikes, Trip Blanks, etc.)

| Media    | Number |
|----------|--------|
| Soil:    | 20     |
| Water:   | -      |
| Material | -      |
|          | 1      |
| Soil     | Water  |
| 2        |        |

| Soil | Water |
|------|-------|
| 2    |       |
|      |       |
| 1    |       |
|      |       |
| 1    |       |

#### **Field Duplicates**

Adequate Numbers of intra-laboratory field duplicates analysed?

Adequate Numbers of inter-laboratory field duplicates analysed?

Were RPDs within Control Limits?

- i. Organics (+ 30%)
- ii. Metals / Inorganics (+ 30%)
- iii. Nutrients (+ 50%)

## 

#### **COMMENTS**

RPD for metals is above ASC NEPM criteria for the following samples:

4996/TP208 and DUP101 - Zinc 53%

4996/TP204 and DUP104 - Lead 55 %

4996/TP204 and DUP 104 - Arsenic 59%





| 4996/TP204 and DUP 104 Copper 54%  |
|--|
| 4996/TP204 and DUP 101 Zinc 52%  |
| These results are all below the adopted SAC and considered 'natural' variations in the fill material. These results do not impact the usability of the data set. |
|  |
|  |
|  |
|  |

#### Summary of Quality Assurance / Quality Control (QA/QC)

| QA/QC Type                                       | Satisfactory | Partially Satisfactory | Unsatisfactory |
|--|--------------|------------------------|----------------|
| Sample handling                                  | ✓            |                        |                |
| Precision / Accuracy of the<br>Laboratory Report | ✓            |                        |                |
| Field QA / QC                                    | ✓            |                        |                |
| Laboratory Internal QA /<br>QC                   | ✓            |                        |                |

| QC  |   |
|---|---|
| Data Usability  |   |
| 1. Data directly usable   | / |
| 2. Data usable with the following corrections/modifications (see comment below) |   |
| 3. Data not usable.   |   |
| COMMENTS  |   |
|   |   |
| ·   |   |
|   |   |
|   |   |
|   |   |
|   |   |







#### 14 Attachment E – Test Pit Logs



|                  | O IE                       |                     | +             |                     |                                  | erty Grou                             |                 | y Liu   | LOGGED                                  | 7.10.15                                       | CHECKED                   | JF                                   | :      |          |  | KEF                              | 1 P201                                      | i   |
|------------------|----------------------------|---------------------|---------------|---------------------|----------------------------------|---------------------------------------|-----------------|---|---|---|---------------------------|--------------------------------------|--------|----------|--|----------------------------------|---|-----|
| SIT              | OJE                        | :01                 |               |                     |                                  | vestigatio<br>on Urban                |                 | 200   | GEOLOGY                                 | BM<br>Bringelly Shale                         | VEGETATION                |                                      | ass    |          |  | Sheet 1 of<br>PROJECT NO.        |   |     |
| _                | IPME                       | NT                  | 30            | Julii VV            |                                  | excavator                             | VIII            | age   | EASTING                                 | -   | RL SURFAC                 | _                                    | 433    |          |  | ROSECT NO.                       | F 1304990                                   |     |
| EXC              | AVAT                       | ION E               | DIMEN         | ISIONS              | 600mm                            | X 2.3m depth                          |                 |   | NORTHING                                | -   | ASPECT                    | Ea                                   | st     |          | SI   | LOPE                             | <5%   |     |
| ╙                | EX                         | CA                  | /AT           | ION DA              | _                                |                                       |                 | MAT   | ERIAL DAT                               | ΓΑ  |                           |                                      |        | SAI      | MPLING   | & TESTI                          | NG  |     |
| METHOD           | SUPPORT                    | WATER               | MOISTURE      | DEPTH (M)           | DRILLING H RESISTANCE            |                                       | CLASSIFICATION  | SOIL NAME, plastic<br>colour, secondal<br>moisture condition,<br>ROCK NAME, gra | ry and minor comp<br>consistency/relati | racteristics,<br>conents,<br>ve density,      | CONSISTENCY               | DENSITY INDEX                        | TYPE   | DEPTH(M) | ADI  | RESUL <sup>.</sup><br>DITIONAL O | TS AND<br>BSERVATIONS                       | 3   |
|                  |                            |                     |               | _                   |                                  | × × × × × × × × × × × × × × × × × × × |                 |   |   |   |                           |                                      | E      | 0.15     | 4996/TP20  | 01 /0.15                         | - Fill                                      |     |
| E                | Nil                        | N                   | М             |                     |                                  | * * * * * * * * * * * * * * * * * * * | xx              | Fill: Silty CLAY - L<br>grey/ orange and<br>and gravels (:                      | brown, fine g                           | rained sand                                   |                           |                                      | E      | 0.5      | 4996/TP20  | )1/0.5                           | nclusions from 0.2 i                        |     |
|                  |                            |                     |               | 1.1                 |                                  | × × × ×                               |                 |   |   |   |                           |                                      |        |          |  |                                  |   | 1.0 |
| E                | Nil                        | N                   | D             |                     |                                  |                                       | CL              | CLAY - low to medi<br>trace f   | ium plasticity<br>fine gravels.         | grey / white,                                 | S-F                       |                                      | Е      | 1.5      | 4996/TP2(  | 01/1.5                           | - Residual                                  |     |
|                  |                            |                     |               | 2.3                 |                                  |                                       |                 |   | ninated at 2.3                          |   |                           |                                      |        |          |  |                                  |   |     |
|                  |                            |                     |               | 3.0                 |                                  |                                       |                 | Clay / row  | strength sha                            | ile.  |                           |                                      |        |          |  |                                  |   | 3.0 |
| N<br>X           | Na<br>E:                   | atural e<br>xisting | expos<br>exca | ure SI<br>vation S0 | UPPORT<br>H Shoring<br>C Shotore | ete X Not                             | e obse<br>measi | ured M Moist M Mod  | erate S S                               | STENCY DENSITY ery Soft VL Very I oft L Loose | Loose A A                 | uger sam<br>ulk sampl                | e      | pp<br>S  |  | enetration test                  | CLASSIFICATI<br>SYMBOLS AND<br>SOIL DESCRIF | D   |
| S<br>C<br>V<br>T | Sp<br>C Co<br>V-E<br>C Tur | ngsten              | Core Carbi    | Ni<br>r<br>de Bit   | B Rock B<br>I No sup             |                                       |                 | Wp Plastic limit R Refu<br>flow Wl Liquid limit                                 | sal St St<br>VSt V<br>H Ha              | iff D Dense<br>ery Stiff VD Very D            | D D<br>Dense M M<br>Ux Ti | isturbed s<br>oisture co<br>ube samp |        | DC<br>FD | S Vane shear<br>CP Dynamic<br>penetromo<br>Field densit<br>S Water sam | cone<br>eter<br>y                | Y USCS<br>N Agricultur                      | al  |
| E                | Exca                       | avator              | back          | noe bucket          |                                  | EXCAVATI                              | ON L            | OG TO BE READ IN CONJUN   | ICTION WITH A                           | ACCOMPANYING R                                | EPORT NOTF                | S AND                                | ABBRF\ | VIATIO   | )NS  |                                  |   |     |
| et No. 4         |                            |                     | )             |                     |                                  | 2                                     |                 |   | MARTENS &                               | ASSOCIATES PTY I<br>, 20 George Street        |                           |                                      |        |          |  | erina                            | Log -                                       |     |

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Suite 201, 20 George Street
Hornsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

|                            | O IL   |  | +                              |                                  |   |                        | ty Grou            |                             | y Liu  | LOGGED                                  | 7.10.15                                   |  | CHECKED                                    | JF  | ,. 10  |                     |         | KEF                          | 1 P202   |
|----------------------------|--|--|--------------------------------|----------------------------------|---|------------------------|--------------------|-----------------------------|--|---|---|--|--|---|--|---------------------|---------|------------------------------|--|
| PR                         | OJE  | :CT  |                                |                                  |   |                        | estigatio          |                             | 200  | GEOLOGY                                 | BM<br>Bringelly S                         | tholo  | VEGETATION                                 | -   | nee  |                     |         | Sheet 1 of PROJECT NO.       | F 1  |
| -                          | IPME   | NT   | 30                             | outh we                          | _   |                        | n Urban<br>cavator | VIII                        | age  | EASTING                                 | - Bringelly S                             | naie   | RL SURFAC                                  |   | 155  |                     |         | PROJECT NO.                  | P1504996   |
| -                          |  |  | DIMEN                          | SIONS                            | _   |                        | I.4 m depth        |                             |  | NORTHING                                | -   |  | ASPECT                                     | Eas   | st   |                     |         | SLOPE                        | <5%  |
|                            | ΕX   | CA\  | /AT                            | ION DA                           | TA  |                        |                    |                             | MAT  | ERIAL DA                                | Γ <b>A</b>                                |  |  |   |  | SA                  | MPLIN   | G & TESTI                    | NG   |
| МЕТНОВ                     | SUPPORT  | WATER  | MOISTURE                       | DEPTH (M)                        | L DRILLING                                    |                        | GRAPHIC LOG        | CLASSIFICATION              | SOIL NAME, plasti<br>colour, seconda<br>moisture condition,<br>ROCK NAME, gra            | ry and minor comp<br>consistency/relati | racteristics,<br>ponents,<br>ive density, |  | CONSISTENCY                                | DENSITY INDEX   | TYPE   | DEPTH (M)           | А       |                              | TS AND<br>BSERVATIONS  |
| E                          | Nil  | N  | М                              | _                                |   |                        | × × × × × × ×      | xx                          | Fill: Silty CLAY - L<br>dark brown/browi   | n, with fine gr                         | ained san                                 | ty,<br>nd  |  |   | E  | 0.15                | 4996/TP | 202/0.15                     | - Fill   |
|                            |  |  |                                | 0.3                              |   |                        | × × × ×            |                             | and gravels  | (5-10 mm, 10                            | -20%).                                    |  |  |   |  |                     |         | - Brick and tile i           | inclusions.  |
|                            |  |  |                                |                                  |   |                        |                    |                             |  |   |   |  |  |   | E  | 0.5                 | 4996/TF | 2202/0.5                     | - Residual   |
| Е                          | Nil  | N  | D                              | _<br>_<br>                       |   |                        |                    | CL                          | CLAY - low to medi<br>trace t  | ium plasticity<br>fine gravels.         | , grey / wh                               | nite,  | S-F  |   | E  | 1.0                 | 4996/TF | <sup>2</sup> 202/1.0         | 1  |
|                            |  |  |                                | 1.4                              |   |                        |                    |                             |  | ninated at 1.4                          |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             | clay/low   | strength sha                            | e.  |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | -                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              | 2  |
|                            |  |  |                                | 2.0                              |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              | 2  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | 2.5                              |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | 3.0                              |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              | 3  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                |                                  |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | 4.0                              |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              | 4  |
|                            |  |  |                                | -                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _                                |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              |  |
|                            |  |  |                                | _<br><u>4</u> .5                 |   |                        |                    |                             |  |   |   |  |  |   |  |                     |         |                              | 4  |
| N<br>X<br>H<br>S<br>C<br>V | Na<br>E:<br>A Ha<br>Sp<br>C Co<br>V-E<br>C Tur | atural oxisting<br>and au<br>bade<br>ncrete<br>Bit<br>ngsten | exposi<br>ger<br>Core<br>Carbi | ure SF<br>vation SC<br>RE<br>Nii | JPPOR<br>H Shor<br>C Shor<br>B Rock<br>I No s | ing<br>crete<br>k Bolt | ts  Wat            | e obse<br>measu<br>ter leve | ıred M Moist M Mod<br>el W Wet H High<br>Wp Plastic limit R Refu<br>flow WI Liquid limit | VS V erate S S F F sal St St VSt V H H  | ery Soft \ oft                            | DENSITY /L Very Loo Loose MD Medium D Dense /D Very Dens | Se A Au B Bu Dense U Ui D Di se M Mo Ux Tu | PLING & T<br>uger sample<br>ulk sample<br>ndisturbed<br>sturbed si<br>bisture co<br>ube sample<br>vironment | elle<br>I sample<br>ample<br>ntent<br>e (x mm) | pr<br>S<br>V:<br>D: |         | nic cone<br>ometer<br>onsity | CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION  Y USCS N Agricultural |
| Ë                          |  |  | Jaon                           | o Duonet                         |   | E                      | XCAVATI            | ON L                        | OG TO BE READ IN CONJUN  | ICTION WITH                             | ACCOMPAI                                  | NYING REP  | ORT NOTES                                  | S AND A   | BBRE   | VIATIO              | ONS     |                              |  |
| et No. 4                   |  |  | )                              |                                  |   |                        |                    |                             |  | MARTENS & .<br>Suite 201                | ASSOCIAT<br>I, 20 Georg                   |  | )  |   | F  | nc                  | nine    | erina                        | Loa -  |

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|                    | EN  |   | +        |                                     |                               |                  | y Grou                                   |                              | Lta                       |   |   | +                                       | ENCED   | 7.10.15                               |                                | -    | COMPLET                            |   | 0.15   |               |   | REF   | TP203  | •                       |
|--------------------|---|---|----------|-------------------------------------|-------------------------------|------------------|--|------------------------------|---------------------------|---|---|---|---|---------------------------------------|--------------------------------|------|------------------------------------|---|--|---------------|---|---|--|-------------------------|
|                    | OJECT Detailed Site  South Werring    5 To  |   |          |                                     |                               |                  |  |                              |                           |   |   | LOGGI                                   | ED  | BM                                    |                                |      | CHECKED                            | ) JF  |  |               |   | Sheet 1 o                                   | f <b>1</b>   |                         |
| SIT                | South Werring  JIPMENT 5 Ton  AVATION DIMENSIONS 600mm  EXCAVATION DATA   |   |          |                                     |                               |                  |  | Villa                        | ge                        |   |   | GEOL                                    |   | Bringelly                             | / Shale                        |      | VEGETAT                            |   | ass  |               | !   | PROJECT NO                                  | P1504996   |                         |
|                    | UIPMENT 5 Tonne excavator CAVATION DIMENSIONS 600mm X 1.0 m depth  EXCAVATION DATA                                    |   |          |                                     |                               |                  |  |                              |                           |   |   | EASTI                                   |   | -                                     |                                |      | RL SURFA                           |   |  |               |   |   |  |                         |
| EXC                |   |   |          |                                     |                               | ım X 1           | .0 m depth                               |                              |                           |   | 84.67   | NORTI                                   |   | -<br>·^                               |                                |      | ASPECT                             | Ea  | st   | C A           |   | LOPE  | <5%  |                         |
| МЕТНОО             | SUPPORT   | WATER   | MOISTURE | DEPTH (M)                           | DRILLING                      | RESISTANCE       | GRAPHIC LOG                              | CLASSIFICATION               |                           | cold<br>moistu                                      | MATERIA<br>NAME, plasti<br>our, seconda<br>ure condition<br>K NAME, gra | icity or pa<br>ary and mi<br>, consiste | rticle char<br>nor comp<br>ncy/relativexture/fabi | acteristics<br>onents,<br>ve density, |                                |      | CONSISTENCY                        | DENSITY INDEX   | ТУРЕ   | DEPTH (M)     |   |   | TS AND<br>DBSERVATIONS                                 |                         |
| Е                  | Nil   | N   | М        | -                                   |                               |                  | * * * *<br>* * * *<br>* * * *<br>* * * * | xx                           |                           | dark bro  | CLAY - lown/brow<br>I gravels   | n, with                                 | fine gra  | ained sa                              | city,<br>and                   |      |                                    |   | Е  | 0.15          | 4996/TP2  | 03 /0.15<br>- Brick and tile                | - Fill inclusions.                                     | -                       |
| E                  | Nil   | N   | D        | 0.3<br>-<br>-<br>-<br>-<br>-<br>1.0 |                               |                  |  | CL                           | C                         | :LAY - Io   | w to med<br>trace   | ium pla                                 |   | grey / \                              | vhite,                         |      | S-F                                |   | E  | 0.5           | 4996/TP2  |   | - Residual   | -<br>-<br>-<br>-<br>1.0 |
|                    |   |   |          |                                     | JPPOF                         |                  | WATER                                    |                              |                           | Te  | PENETF  | clay.                                   |   | m on                                  | DENSIT                         |      |                                    | PLING &   |  |               |   |   | CLASSIFICATIO  |                         |
| S<br>C(<br>V<br>T( | Ha<br>Sp<br>Coo<br>V-E<br>Tun   | xisting<br>and aug<br>adde<br>ncrete<br>Bit<br>agsten | Corer    | ation SC<br>RE<br>Nil               | H Sho<br>Sho<br>B Roo<br>I No | tcrete<br>k Bolt | s 🅎 Wat                                  | measu<br>er leve<br>er outfl | red M<br>W<br>Wp<br>ow WI | Dry<br>Moist<br>Wet<br>Plastic limi<br>Liquid limit | L Low<br>M Mod<br>H High<br>it R Refu                                   | lerate                                  | S So<br>F Fir<br>St Stir                          | m<br>ff<br>ry Stiff<br>rd             | L Loc                          |      | B I<br>nse U I<br>D I<br>M I<br>Ux | Auger sam<br>Bulk sample<br>Undisturbe<br>Disturbed s<br>Moisture co<br>Tube samp<br>Environmen | e<br>d sample<br>sample<br>ontent<br>le (x mm) | S<br>VS<br>DO | Standard p | enetration test<br>r<br>cone<br>leter<br>ty | SYMBOLS AND<br>SOIL DESCRIP<br>Y USCS<br>N Agricultura | TION                    |
|                    | E Excavator backhoe bucket  EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS |   |          |                                     |                               |                  |  |                              |                           |   |   |   |   |                                       |                                |      |                                    |   |  |               |   |   |  |                         |
| et No. 4           |   |   | )        |                                     |                               | Е                | XCAVATI                                  | ON LO                        | OG TO BE                  | READ IN   | I CONJUN  | MART                                    | ENS & A   | SSOCIA                                | ANYING<br>ATES PT<br>rge Stree | YLTD | RT NOTI                            | ES AND A  |  |               |   | erina                                       | Log -  |                         |

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| CL                    | IEN   | Т  | U                            | niversal   | Pro                      | per                     | ty Grou                           | p Pt                                  | y Ltd  | COMMENCED  | 7.10.15  | COMPLET                                    | ED 7  | .10.15                             |                     |         | REF                           | <b>TP204</b>  |
|-----------------------|---|--|------------------------------|--|--------------------------|-------------------------|-----------------------------------|---------------------------------------|--|--|--|--|---|------------------------------------|---------------------|---------|-------------------------------|---|
| PR                    | OJE   | СТ   | De                           | etailed S  | lte l                    | Inve                    | estigatio                         | n                                     |  | LOGGED   | ВМ   | CHECKED                                    | ,   | IF                                 |                     |         | Sheet 1                       | of <b>1</b>   |
| SI                    |   |  | S                            |  |                          | _                       | n Urban                           | Villa                                 | age  | GEOLOGY  | Bringelly Shale  | VEGETAT                                    | _   | Grass                              |                     |         | PROJECT NO                    | D. P1504996   |
| -                     | IPME  |  | DIMEN                        |  |                          |                         | cavator<br>1.1 m depth            |                                       |  | EASTING<br>NORTHING  | -  | RL SURFA<br>ASPECT                         |   | ast                                |                     |         | SLOPE                         | <5%   |
| <u> </u>              |   |  |                              | ION DAT  |                          |                         |                                   |                                       | M.A  | TERIAL DAT   |  | 7.0. 20.                                   |   |                                    | SA                  |         | G & TEST                      |   |
| МЕТНОВ                | SUPPORT   | WATER  | MOISTURE                     | DEPTH(M)   |                          | RESISTANCE              | GRAPHIC LOG                       | CLASSIFICATION                        | MATER SOIL NAME, plat colour, second moisture condition ROCK NAME, p | IAL DESCRIPTIO<br>sticity or particle cha<br>lary and minor comp<br>n, consistency/relati<br>rain size, texture/fab<br>ngth, weathering.   | pn<br>racteristics,<br>ionents,<br>we density,                             | CONSISTENCY                                | DENSITY INDEX   | TYPE                               | DEPTH (M)           | A       |                               | LTS AND<br>OBSERVATIONS   |
| Е                     | Nil   | N  | М                            | -<br>-<br>0.3  |                          |                         | × × × × × × × × × × × × × × × × × | xx                                    |  | Low to mediung the contract of | ained sand   |  |   | E                                  | 0.15                | 4996/Ti | 204 /0.15<br>- Brick and tile | - Fill<br>e inclusions.   |
| Е                     | Nil   | N  | D                            | -<br>-<br>-<br>-<br>-<br>1.0   |                          |                         |                                   | CL                                    | CLAY - low to me<br>trace  | dium plasticity,<br>fine gravels.  | grey / white,  | S-F  |   | Е                                  | 0.5                 | 4996/TF | 2204/0.5                      | - Residual  |
|                       |   |  |                              | 1.1<br>-<br>-<br>-<br>-  |                          |                         |                                   |                                       | Testpit te   | minated at 1.1<br>clay.  | m on   |  |   |                                    |                     |         |                               |   |
|                       |   |  |                              |  |                          |                         |                                   |                                       |  |  |  |  |   |                                    |                     |         |                               | 21  |
|                       |   |  |                              | 3.0<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |                          |                         | WATER                             |                                       |  | TRATION CONSI  | STENCY DENSITY   | SAN  | IDI INC S   | , TESTING                          |                     |         |                               | 4.  |
| N<br>X<br>S<br>C<br>V | A Ha<br>Sp<br>C Co<br>V-E<br>C Tur  | atural existing and au ade ncrete Bit ngsten | expos<br>ger<br>Core<br>Carb | ure SH<br>vation SC<br>RB<br>Nil                                     | PPOF<br>Sho<br>Sho<br>No | ring<br>tcrete<br>k Bol | N None<br>≥ X Note<br>ts          | e obse<br>measu<br>er leve<br>er outf | erved D Dry L Lo ured M Moist M M. el W Wet H Hig                    | w VS Venderate S S ph F Fi fusal St St VSt Ven   | ery Soft VL Very Loft L Loose rm MD Medium ff D Dense ery Stiff VD Very De | Dose A A B B B B B B B B B B B B B B B B B | Auger san<br>Bulk sam<br>Undisturb<br>Disturbed<br>Moisture<br>Tube sam | mple<br>ole<br>ed sample<br>sample | pp<br>S<br>VS<br>D( |         | ic cone<br>meter<br>sity      | CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION  Y USCS  N Agricultural |
|                       | EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS |  |                              |  |                          |                         |                                   |                                       |  |  |  |  |   |                                    |                     |         |                               |   |
| t No. 4               |   |  | )                            |  |                          |                         |                                   |                                       |  |  | ASSOCIATES PTY LT  | D  |   | F                                  | nc                  | nine    | erinc                         | Log -   |

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| _                          | IEN   |  | _                              |                                 |                                      |                          | ty Grou                   |                             | y Lta   | COMMENCED  | 7.10.15                                  |                                     | COMPLETE    | _   | 1.15                                 |  | _ RE   | F      | TP2                 | :05                                      |
|----------------------------|---|--|--------------------------------|---------------------------------|--------------------------------------|--------------------------|---------------------------|-----------------------------|---|--|--|-------------------------------------|-------------|---|--------------------------------------|--|--|--------|---------------------|--|
| -                          | OJE   | СТ   | +                              |                                 |                                      |                          | stigatio                  |                             |   | LOGGED   | BM                                       |                                     | CHECKED     | JF  |                                      |  |  |        | 1                   |  |
| SIT                        | JIPME   | NT   | S                              | outh We                         |                                      |                          | urban<br>cavator          | VIII                        | age   | GEOLOGY<br>EASTING   | Bringelly Sh                             | nale                                | RL SURFA    |   | ISS                                  |  | PROJE  | CT NO. | P1504996            |  |
| _                          |   |  | IMEN                           | SIONS                           | _                                    |                          | .1 m depth                |                             |   | NORTHING   | -  |                                     | ASPECT      | Eas   | st .                                 |  | SLOPE  | <      | 5%                  |  |
|                            | EX  | CA   | /AT                            | ON DA                           | TA                                   |                          |                           |                             | MAT   | ERIAL DAT  | Ά  |                                     |             |   |                                      | SAMP                                   | LING & T   | ESTIN  | G                   |  |
| METHOD                     | SUPPORT                                       | WATER  | MOISTURE                       | DEPTH (M)                       | L DRILLING                           |                          | GRAPHIC LOG               | CLASSIFICATION              | MATERIA  SOIL NAME, plastic colour, secondal moisture condition ROCK NAME, gra                                | L DESCRIPTION City or particle charty and minor complete consistency/relati                                    | racteristics,<br>conents,<br>ve density, |                                     | CONSISTENCY | DENSITY INDEX   | TYPE                                 | DEPTH (M)                              | F  | RESULT |                     | IONS                                     |
| Е                          | Nil   | N  | М                              | -<br>0.2                        |                                      |                          | × × ×<br>× × ×<br>× × ×   | OL                          | Silty SAND - Fine g   | ırained, light   | orown/brov                               | vn.                                 |             |   |                                      |  |  |        | - Topso             | oil<br>-                                 |
| Е                          | Nil   | N  | М                              | 0.4                             |                                      |                          |                           | CL                          | Silty CLAY - Low to m   | edium plastic  | city, light b                            | rown.                               | S-F         |   |                                      |  |  |        | - Resid             | ual                                      |
| Е                          | Nil   | N  | D                              |                                 |                                      |                          |                           | CL                          | CLAY - Low to med<br>trace f  | lium plasticit<br>ine gravels.   | /, grey/whi                              | te,                                 | S-F         |   |                                      |  |  |        | - Resid             | ual -<br>-<br>-<br>-<br>-<br>1 <u>.0</u> |
|                            |   |  |                                | 1.1                             |                                      |                          |                           |                             | Testpit tern  | ninated at 1.1   | m on                                     |                                     |             |   |                                      |  |  |        |                     |  |
| E                          | QUIP  | MENT   | /ME                            |                                 | JPPOR                                |                          | WATER                     |                             | MOISTURE PENETR   | ATION CONSI  | STENCY D                                 | ENSITY                              |             | PLING & T   |                                      |  |  |        | CLASSIFI            | 2.0<br>                                  |
| N<br>X<br>F<br>S<br>C<br>V | I Na<br>EIA Ha<br>Sp<br>CC Co<br>V-E<br>C Tur | atural oxisting<br>and au<br>bade<br>ncrete<br>Bit<br>ngsten | exposi<br>excar<br>ger<br>Core | ure St<br>vation SC<br>RE<br>Ni | H Shor<br>C Shot<br>B Rock<br>I No s | ring<br>tcrete<br>k Bolt | N Non<br>X Not<br>s W Wat | e obse<br>measu<br>ter leve | erved D Dry L Low<br>ured M Moist M Mod<br>el W Wet H High<br>Wp Plastic limit R Refu<br>flow WI Liquid limit | VS Volumerate S S F Fi Sal St St VSt Volumerate S S St St VSt Volumerate S S S S S S S S S S S S S S S S S S S | ery Soft VI<br>oft L<br>rm M<br>iff D    | L Very Loos<br>Loose<br>D Medium De | e M M       | uger samp ulk sample ndisturbed isturbed sa oisture con ube sample nvironment | sample<br>ample<br>ntent<br>e (x mm) | S Sta<br>VS Va<br>DCP D<br>p<br>FD Fie | cket penetrome<br>indard penetrati<br>ne shear<br>dynamic cone<br>enetrometer<br>Id density<br>ater sample |        | SYMBOL:<br>SOIL DES | S AND<br>SCRIPTION                       |
| $\vdash$                   |   |  |                                |                                 |                                      | -                        | Χ. Δ. / Λ.Τ.              | ON 1                        | OG TO BE READ IN CONJUN   | CTION WITH A   | CCOMPAN                                  | IVING REDO                          | DRT NOT⊏    | SANDA   | BBBEV                                | ΊΔΤΙΩΝΙς                               |  |        |                     |  |
| et No. 4                   |   |  | )                              |                                 |                                      |                          | -NOAVAII                  | OIN L                       | CO TO BE READ IN CONJUN   | MARTENS &  |  | S PTY LTD                           |             | J AND A   |                                      |  | neeri  | na     | l on                | · -                                      |

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|                       | IEIN                                  |  | _                                  |                            |                  |                  | ıy Grou                       |                   | y Liu  | LOGGED  | 7.10.15                                   |  | CHECKED                           | _  | IF                         |               | KE   |         | 1 P206   | ,                  |
|-----------------------|---------------------------------------|--|------------------------------------|----------------------------|------------------|------------------|-------------------------------|-------------------|--|---|---|--|-----------------------------------|--|----------------------------|---------------|--|---------|--|--------------------|
| -                     |                                       | Detailed Site Investigation  South Werrington Urban Village  TION DIMENSIONS  Site Investigation  5 Tonne excavator  600mm X 1.0 m depth |                                    |                            |                  |                  |                               |                   |  | 1   | BM  |  |                                   |  |                            |               |  |         | 1  |                    |
| SIT                   |                                       | NT   | S                                  | outh We                    | _                |                  |                               | Villa             | age  | GEOLOGY<br>EASTING  | Bringelly                                 | Shale  | VEGETAT                           |  | Brass                      |               | PROJI  | ECT NO. | P1504996   |                    |
| _                     |                                       |  | DIMEN                              | ISIONS                     | +                |                  |                               |                   |  | NORTHING  | -   |  | RL SURFA                          |  | ast                        |               | SLOPE  |         | :5%  |                    |
|                       |                                       |  |                                    | ION DA                     | _                |                  | io iii dopiii                 |                   | MAT  | ERIAL DA  | ГА  |  | 7.0. 20.                          |  |                            | SA            | MPLING & 1   |         |  |                    |
| METHOD                | SUPPORT                               | WATER  |                                    | DEPTH (M)                  | L DRILLING       |                  | GRAPHIC LOG                   | CLASSIFICATION    | MATERIA SOIL NAME, plastic colour, secondal moisture condition, ROCK NAME, gra           | L DESCRIPTION  city or particle chary and minor components consistency/relate | racteristics,<br>ponents,<br>ive density, |  | CONSISTENCY                       | DENSITY INDEX  | TYPE                       | DEPTH (M)     |  | RESULT  |  | ;                  |
| E                     | Nil                                   | N  | М                                  | _                          |                  |                  | × × ×<br>× × ×<br>× × ×       | OL                | Silty SAND - Fine g  | grained, light  | brown/br                                  | own.   |                                   |  |                            |               |  |         | - Topsoil  |                    |
| E                     | Nil                                   | N  | М                                  | 0.2                        |                  |                  |                               | CL                | Silty CLAY - Low to m  | edium plasti  | city, light                               | brown.   | S-F                               |  |                            |               |  |         | - Residual   |                    |
| E   Nil   N   M   D   |                                       |  |                                    |                            |                  |                  |                               |                   | CLAY - Low to med<br>trace f   |   | y, grey/wl                                |  | S-F                               |  |                            |               |  |         | - Residual   | - 1.0<br>- 1.0<br> |
|                       |                                       |  |                                    | THOD SI                    |                  |                  |                               |                   |  |   |   | DENSITY  |                                   | IPLING &   | TESTING                    |               | Pocket nenetra   | eter    | CLASSIFICATION SYMBOLS AND                         |                    |
| X<br>H<br>S<br>C<br>V | E E E E E E E E E E E E E E E E E E E | xisting<br>and au<br>pade<br>oncrete<br>Bit<br>ngster  | g exca<br>uger<br>e Core<br>n Carb | vation S0<br>Ri<br>Ni<br>r | C Shot<br>B Rock | tcrete<br>k Bolt | X Not<br>s <u>Ψ</u> Wat<br>rt | measu<br>ter leve | rred M Moist M Mod<br>el W Wet H High<br>Wp Plastic limit R Refu<br>llow WI Liquid limit | erate S S<br>F F<br>sal St Si<br>VSt V<br>H H                                 | oft<br>irm<br>iff                         | VL Very Loo<br>L Loose<br>MD Medium D<br>D Dense<br>VD Very Dens | B E<br>Dense U I<br>D I<br>se M M | Bulk sam<br>Undisturb<br>Disturbed<br>Moisture<br>Tube san | ole<br>ed sample<br>sample | S<br>VS<br>DC | Pocket penetrome<br>Standard penetra<br>Standard penetra<br>Standard penetro<br>CP Dynamic cone<br>penetrometer<br>Field density<br>S Water sample |         | SYMBOLS AND<br>SOIL DESCRIP  Y USCS  N Agricultura | TION               |
| 40.4                  |                                       |  | _                                  |                            |                  | Е                | XCAVATI                       | ON LO             | OG TO BE READ IN CONJUN  | MARTENS &   | ASSOCIAT                                  | TES PTY LTC  |                                   | ES AND   |                            |               |  | !.a ==  | 1  |                    |
| E                     | -                                     |  |                                    |                            |                  |                  |                               |                   |  |   | 1 20 Georg                                |  |                                   | - 1  | <b>—</b>                   | nn            | nineer   | ma      | 1 00 -   |                    |

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|--|---------------------------------------|---|-------------------------|--|---|--------------------------|---------------------------------------|----------------------------|--|--|---|-------------------------------------|--|---------------------------------------|---------------------|---|--------------------------------|---|
| -  | OJE                                   | СТ  | D                       | etailed S  | ite l                                       | nve                      | stigatio                              | n                          |  | LOGGED   | ВМ  | CHECKE                              | ) J  | F                                     |                     |   | Sheet 1                        | of <b>1</b>   |
| _  | ΓΕ                                    |   | S                       | outh We  |   | _                        |                                       | Villa                      | age  | GEOLOGY  | Bringelly Shale                                 | VEGETAT                             |  | irass                                 |                     |   | PROJECT NO                     | D. P1504996   |
| -  | JIPME                                 |   | DIME                    | ISIONS   |   |                          | .0 m depth                            |                            |  | EASTING<br>NORTHING  | -   | ASPECT                              |  | ast                                   |                     |   | SLOPE                          | <5%   |
|  |                                       |   |                         | ION DA   |   |                          | .o m dopan                            |                            | MAT  | ERIAL DAT  |   | 7.0. 20.                            |  |                                       | SA                  |   | G & TEST                       |   |
| METHOD   | SUPPORT                               | WATER   | MOISTURE                | DEPTH(M)   | DRILLING                                    |                          | GRAPHIC LOG                           | CLASSIFICATION             | MATERIA<br>SOIL NAME, plasti<br>colour, seconda<br>moisture condition,<br>ROCK NAME, gra | AL DESCRIPTIC<br>city or particle char<br>ry and minor comp<br>consistency/relativ | racteristics,<br>onents,<br>ve density,         | CONSISTENCY                         | DENSITY INDEX  | TYPE                                  | DEPTH (M)           | А   |                                | LTS AND<br>OBSERVATIONS   |
| Е  | Nil                                   | N   | М                       |  |   |                          | × × × × × × × × × × × × × × × × × × × | xx                         | Fill: Silty CLAY - L<br>dark brown/brow<br>and gravels                                   | ow to mediur<br>n, with fine gr<br>(5-10 mm, 10                                    | ained sand                                      |                                     |  | E                                     | 0.15                | 4996/7  | P207 /0.15<br>- Brick and tile | - Fill -<br>-<br>e inclusions<br>-  |
| E  |                                       |   |                         |  |   |                          |                                       | CL                         | CLAY - low to medi<br>trace t  | um plasticity,<br>fine gravels.  | grey / white,                                   | S-F                                 |  | Е                                     | 0.75                | 4996/T  | P207/0.75                      | - Residual -<br>-<br>-<br>-<br>-<br>1 <u>.0</u>   |
|  |                                       |   |                         |  |   |                          |                                       |                            | Testpit tern   | ninated at 1.2<br>clay.  | m on  |                                     |  |                                       |                     |   |                                | -<br>-<br>-<br>-<br>-   |
|  |                                       |   |                         |  |   |                          |                                       |                            |  |  |   |                                     |  |                                       |                     |   |                                | -<br>2.0<br>-<br>-<br>-<br>-<br>-<br>-  |
|  |                                       |   |                         | -<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |   |                          |                                       |                            |  |  |   |                                     |  |                                       |                     |   |                                | -<br>3.0<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| 1<br>(<br>)<br>(   | I Na<br>C E<br>IA Ha<br>S Sp<br>CC Co | atural<br>xisting<br>and au<br>bade<br>ncrete | expos<br>g exca<br>iger | ure SH<br>vation SC<br>RE<br>Nil   | JPPOR<br>I Shor<br>C Shot<br>B Rock<br>No s | ring<br>crete<br>k Bolts | s <u>▼</u> Wat<br>rt                  | e obse<br>measu<br>er leve | ured M Moist M Mod<br>el W Wet H High<br>Wp Plastic limit R Refu                         | VS Ve<br>erate S Se<br>F Fii<br>sal St Sti<br>VSt Ve                               | m MD Mediu<br>ff D Dense<br>ery Stiff VD Very D | Loose A B I m Dense U D I lense M M | Auger san<br>Bulk samp<br>Undisturb<br>Disturbed<br>Moisture o | ile<br>ed sample<br>sample<br>content | pr<br>S<br>V:<br>D: | Standard<br>S Vane she<br>CP Dynam<br>penetro | ic cone<br>meter               | Y USCS  |
| CC Concrete Corer  V V-Bit  TC Tungsten Carbide Bit  E Excavator backhoe bucket  Water outflow WI Liquid limit  H Hard  F Friable  EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPA |                                       |   |                         |  |   |                          |                                       |                            |  |  |   | E E                                 | nvironme   | ple (x mm<br>ntal samp                | e w                 | O Field der<br>/S Water sa<br>ONS             |                                | N Agricultural  |
| t No. 4  |                                       |   | )                       |  |   |                          |                                       |                            |  | MARTENS & A  | ASSOCIATES PTY L<br>, 20 George Street          |                                     |  |                                       |                     |   | erinc                          | a Loa -   |

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MARTENS & ASSOCIATES PTY LTD
Suite 201, 20 George Street
Hornsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

| CL  | IEN                                | Т  | Uı                           | niversal                                    | Pro                      | per                                 | ty Group                                | Pt  | y Ltd  | COMMENCED  | 7.10.15  | COMPLET                                     | ED 7.1   | 0.15  |                                      |  | REF                                | <b>TP208</b>   |
|---|------------------------------------|--|------------------------------|---|--------------------------|-------------------------------------|---|---|--|--|--|---|--|---|--------------------------------------|--|------------------------------------|--|
| PROJECT Detailed Site Investigat SITE South Werrington Urba |                                    |  |                              |   |                          |                                     |   |   |  | LOGGED   | ВМ   | CHECKED                                     | JF   |   |                                      |  | Sheet 1                            | of <b>1</b>  |
| -   |                                    |  | S                            |   | _                        | _                                   |   | Villa   | age  | GEOLOGY  | Bringelly Shale                                    | VEGETATI                                    |  | ass   |                                      |  | PROJECT                            | NO. P1504996   |
| -   | IPME                               |  | IMEN                         |   |                          |                                     | cavator<br>1.7 m depth                  |   |  | EASTING<br>NORTHING  | -  | RL SURFA<br>ASPECT                          | CE -<br>Ea   | st  |                                      |  | SLOPE                              | <5%  |
|   |                                    |  |                              | ION DAT                                     | _                        |                                     | III III GOPIII                          |   | MAT  | ERIAL DAT  |  | 17.0. 20.                                   |  |   | SA                                   |  | G & TES                            |  |
| МЕТНОВ  | SUPPORT                            | WATER  | MOISTURE                     | DEPTH(M)                                    |                          | RESISTANCE                          | GRAPHIC LOG                             | CLASSIFICATION                                    | MATERIA SOIL NAME, plastic colour, secondar moisture condition, ROCK NAME, grai          | L DESCRIPTIO<br>city or particle char<br>y and minor comp<br>consistency/relativ | on<br>racteristics,<br>onents,<br>we density,      | CONSISTENCY                                 | DENSITY INDEX  | TYPE  | DEPTH (M)                            | A  |                                    | ULTS AND<br>L OBSERVATIONS   |
| E   | Nil                                | N  | М                            | -   |                          |                                     | × × × × × × × × × × × × × × × × × × ×   | XX  | Fill: Silty CLAY - L<br>dark brown/browr<br>and gravels (                                | n, with fine gra   | ained sand   |   |  | Е   | 0.15                                 | 4996/TF  | 208/0.15<br>- Brick and            | - Fill<br>tile inclusions.   |
| E   | Nil                                | N  | D                            | 0.5<br>-<br>-<br>-<br>1.0                   |                          |                                     | × ^ × ^ × ^ × ^ · · · · · · · · · · · · | CL  | CLAY - low to medi<br>trace f  | um plasticity,<br>îne gravels.   | grey / white,                                      | S-F   |  | Е   | 0.65                                 | 4996/TF  | 208/0.65                           | - Residual   |
| Е   | Nil                                | N  | D                            | -<br>-<br>-<br>1.7                          |                          |                                     |   |   | SHALE - very low st  | rength, light l  | brown/ grey.                                       |   |  |   |                                      |  |                                    | - Residual   |
|   |                                    |  |                              | -   |                          |                                     |   |   |  | ninated at 1.7<br>strength shal  |  |   |  |   |                                      |  |                                    |  |
|   |                                    |  |                              |   |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    | 2  |
|   |                                    |  |                              | -   |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    |  |
|   |                                    |  |                              |   |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    | 3  |
|   |                                    |  |                              | -<br>-<br>-                                 |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    |  |
|   |                                    |  |                              | -<br>-<br>-                                 |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    |  |
|   |                                    |  |                              | <u>4.0</u><br>_<br>_<br>_                   |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    | 4  |
|   |                                    |  |                              | _<br><u>4</u> .5                            |                          |                                     |   |   |  |  |  |   |  |   |                                      |  |                                    | 4  |
| N<br>H<br>S<br>C  | A Ha<br>Sp<br>C Co<br>V-E<br>C Tur | atural e<br>xisting<br>and au<br>pade<br>ncrete<br>Bit<br>ngsten | expos<br>exca<br>ger<br>Core | THOD SU<br>ure SH<br>vation SC<br>RB<br>Nil | PPOF<br>Sho<br>Sho<br>No | oring<br>otcrete<br>ck Bol<br>suppo | lts <u>▼</u> Wate<br>ort <u></u>        | e obse<br>measu<br>er leve<br>er outf<br>er inflo | red M Moist M Mode<br>el W Wet H High<br>Wp Plastic limit R Refus<br>low WI Liquid limit | VS Ve erate S Sc F Fi sal St Sti VSt Ve H Ha F Fri CTION WITH A                  | ff D Dense<br>rry Stiff VD Very Der<br>ord<br>able | Dense A A B B B B B B B B B B B B B B B B B | PLING & - Luger sample  Julk sa | ble d sample ample intent le (x mm) tal sampl | PF<br>S<br>VS<br>DO<br>DO<br>FE<br>W | Standard<br>S Vane she<br>CP Dynam<br>penetro<br>D Field der<br>S Water sa | ic cone<br>ometer<br>sity<br>ample | CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION  Y USCS N Agricultural |
| E   |                                    |  |                              |   |                          |                                     |   |   |  |  | , 20 George Street                                 |   | - 1  | F   | nc                                   | anır   | erin                               | a Loa -  |

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MARTENS & ASSOCIATES PTY LTD
Suite 201, 20 George Street
Hornsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

| CI       | IEN   | T  | U                      | niversal                   | Pro                    | per              | ty Grou                 | p Pt           | y Ltd   | COMMENCED  | 7.10.15                                       | COMPLET                  | 7.1  | 10.15                                       |  | REF  | TP209                                      |
|----------|---|--|------------------------|----------------------------|------------------------|------------------|-------------------------|----------------|---|--|---|--------------------------|--|---|--|--|--|
| _        | ROJE  | СТ   | De                     | etailed S                  | Site                   | Inve             | estigatio               | n              |   | LOGGED   | ВМ  | CHECKE                   | ) JF   |   |  | Sheet 1 o  |  |
| _        | TE  |  | S                      | outh We                    | _                      | _                | n Urban                 | Vill           | age   | GEOLOGY  | Bringelly Shale                               | VEGETAT                  |  | rass  |  | PROJECT NO.  | P1504996                                   |
| _        | UIPME   |  | NIME N                 | ISIONS                     | _                      |                  | cavator<br>1.1 m depth  |                |   | EASTING<br>NORTHING  | -   | RL SURF                  | ACE -  | not   |  | SLOPE  | <5%  |
| Ë        |   |  |                        | ION DA                     |                        | ım X             | 1.1 m deptn             |                | МАТ   | ERIAL DAT  | · <b>A</b>                                    | ASPECT                   | E  | ası   | SAMPLI                                     | NG & TESTI   |  |
| METHOD   | _   | WATER  | MOISTURE               | DEPTH (M)                  | DRILLING               | RESISTANCE       | GRAPHIC LOG             | CLASSIFICATION | SOIL NAME, plasticolour, seconda moisture condition, ROCK NAME, gra | AL DESCRIPTIC<br>city or particle char<br>ry and minor comp<br>consistency/relativ | en<br>racteristics,<br>onents,<br>ve density, | CONSISTENCY              | DENSITY INDEX  | TYPE  | H (M)                                      | RESUL  | TS AND<br>DBSERVATIONS                     |
| Е        | Nil   | N  | М                      | 0.2                        |                        |                  | × × ×<br>× × ×<br>× × × | OL             | Silty SAND - Fine g   | grained, light l   | prown/brown.                                  |                          |  | E   | 0.15 4996                                  | /TP209/0.15  | - Topsoil<br>-                             |
| E        | Nil   | N  | D                      | -<br>0.5<br>-<br>0.6       |                        |                  | <br>                    | CL             | Silty CLAY - Low to m   | nedium plastic   | ity, light brown.                             | S-F                      |  | E   | 0.5 4996                                   | TP209/0.5  | - Residual -<br>-<br>-<br>-                |
| Е        | Nil   | N  | D                      | 1.0                        |                        |                  |                         | CL             | CLAY - Low to med trace t   | ium plasticity<br>fine gravels.  | grey / white,                                 | S-F                      |  |   |  |  | - Residual<br>-<br>-<br>-<br>1 <u>.0</u>   |
|          |   |  | ī / ME                 |                            | JPPOI                  | RT               | WATER                   |                | MOISTURE PENETR   |  | STENCY DENSITY Pry Soft VL Very Lo            |                          | /PLING &   |   |  | penetrometer   | 2.0 2.0 3.0 4.5 CLASSIFICATION SYMBOLS AND |
| 1        | K E<br>HA Ha<br>S S <sub>I</sub><br>CC Co<br>/ V-I<br>FC Tu | xisting<br>and au<br>bade<br>ncrete<br>Bit<br>ngster | g exca<br>iger<br>Core | vation SC<br>RE<br>Ni<br>r | C Sho<br>B Roo<br>I No | tcrete<br>ck Bol | ts 🅎 Wat                |                | el W Wet H High<br>Wp Plastic limit R Refu<br>tflow WI Liquid limit | F Fii<br>sal St Sti<br>VSt Ve<br>H Ha  | ff D Dense<br>ery Stiff VD Very De            | Dense U<br>Dense M<br>Ux | Bulk sampl Undisturbe Disturbed s Moisture co Tube samp Environmer | ed sample<br>sample<br>ontent<br>ole (x mm) | S Standa<br>VS Vane s<br>DCP Dyna<br>penel | rd penetration test<br>hear<br>mic cone<br>rometer<br>ensity | SOIL DESCRIPTION  Y USCS  N Agricultural   |
| st No. 4 |   |  | )                      |                            |                        | E                | EXCAVATI                | ON L           | OG TO BE READ IN CONJUN   | MARTENS & A  | ASSOCIATES PTY LT                             |                          | ES AND   |   |  | eerina   | Log -                                      |

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Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

| CLI                                | EN  | Т  | Ur                              | nivers        | al Pro <sub>l</sub>                                 | pert                      | y Grou                                | p Pt                       | y Ltd   | COMMENCED   | 7.10.15   | со                                      | MPLETE   | 7.10.   | 15                                    |                   |   | REF                          | TP210   |                    |
|------------------------------------|---|--|---------------------------------|---------------|---|---------------------------|---------------------------------------|----------------------------|---|---|---|---|--|---|---------------------------------------|-------------------|---|------------------------------|---|--------------------|
| PR                                 | OJE   | СТ   | De                              | tailed        | I SIte I  | nve                       | stigatio                              | n                          |   | LOGGED  | BM  | СН                                      | ECKED  | JF  |                                       |                   |   | Sheet 1 o                    | f <b>1</b>  |                    |
| SIT                                |   |  | Sc                              | outh V        |   |                           | Urban                                 | Villa                      | age   | GEOLOGY   | Bringelly Shale   |   | GETATIO  |   | ss                                    |                   |   | PROJECT NO.                  | P1504996  |                    |
| EQUI                               |   |  |                                 |               |   |                           | avator                                |                            |   | EASTING   | -   |   | SURFAC   | _   |                                       |                   |   |                              |   |                    |
| EXC                                |   |  |                                 | SIONS         |   | m X 2.                    | 3 m depth                             |                            | МАТ   | NORTHING<br>ERIAL DAT   |   | ASI                                     | PECT   | East  |                                       | S/                |   | SLOPE  G & TESTI             | <5%   | —                  |
| МЕТНОБ                             | SUPPORT   | WATER  | MOISTURE                        | DEPTH (M)     | L DRILLING  |                           | GRAPHIC LOG                           | CLASSIFICATION             | MATERIA SOIL NAME, plastic colour, secondar moisture condition, ROCK NAME, grai           | L DESCRIPTION city or particle charactery and minor comports consistency/relative | N<br>acteristics,<br>onents,<br>e density,  |   | CONSISTENCY                                      | DENSITY INDEX   | TYPE                                  | DEPTH (M)         |   | RESUL                        | TS AND<br>DBSERVATIONS  |                    |
| Е                                  | Nil   | N  | М                               | -             |   |                           | × × × × × × × × × × × × × × × × × × × | xx                         | Fill: Silty CLAY - L<br>dark brown/browr<br>and gravels (                                 | ow to medium, with fine gra<br>5-10 mm, 10-                                       | ined sand   |   |  |   | Е                                     | 0.15              | 4996/TI   | P210 /0.15  - Brick and tile | - Fill inclusions.  | -                  |
| Е                                  | Nil   | N  | D                               | 0.5           |   |                           |                                       | - CL                       | CLAY - low to medi  | um plasticity,  | grey /brown.  | \$                                      | S-F  |   | Е                                     | 0.65              | 4996/TF   | 210 <b>/0.65</b>             | - Residual  | -<br>-<br>-<br>1.0 |
| E                                  | Nil   | N  | D                               |               |   |                           |                                       |                            | SHALE - very low st   | trength, light b  | orown/ grey.  |   |  |   | E                                     | 1.5               | 4996/TF   | 210/1.5                      | - Weathered ro  |                    |
|                                    |   |  |                                 | 2.3<br>-<br>- |   |                           |                                       |                            |   | ninated at 2.3 strength shale   |   |   |  |   |                                       |                   |   |                              |   | <del></del>        |
| N<br>X<br>HA<br>S<br>CO<br>V<br>TO | Na<br>E:<br>A Ha<br>Sp<br>C Coi<br>V-E<br>C Tur | atural oxisting<br>and au<br>bade<br>ncrete<br>Bit<br>ngsten | exposi<br>ger<br>Corei<br>Carbi | ure<br>vation | SUPPOR<br>SH Shot<br>SC Shot<br>RB Roci<br>Nil No s | ring<br>tcrete<br>k Bolts | s                                     | e obse<br>measu<br>er leve | red M Moist M Mode<br>el W Wet H High<br>Wp Plastic limit R Refus<br>flow WI Liquid limit | VS Ver<br>erate S So<br>F Firn<br>sal St Stif                                     | y Soft VL Ve<br>ft L Lo<br>m MD Me<br>f D De<br>y Stiff VD Ver                            | ery Loose<br>ose<br>edium Dense<br>ense | A Au<br>B Bul<br>U Un<br>D Dis<br>M Mo<br>Ux Tub | LING & Ti<br>ger sample<br>k sample<br>disturbed sa<br>sture con<br>e sample<br>ironmenta | e<br>sample<br>mple<br>tent<br>(x mm) | PI<br>S<br>V<br>D | p Pocket p<br>Standard<br>S Vane sh<br>CP Dynam<br>penetr<br>D Field der<br>/S Water sa | ic cone<br>meter<br>sity     | CLASSIFICATION SYMBOLS AND SOIL DESCRIPT  Y USCS N Agricultural | ION                |
|                                    |   |  |                                 |               |   | F.                        | XCAVATI                               | ON L                       | OG TO BE READ IN CONJUN   | CTION WITH A  | CCOMPANYING   | REPORT                                  | NOTES  | AND AI  | BBRF                                  | VIATI             | ONS   |                              |   |                    |
| Quality Sheet No. 4                |   |  |                                 |               | ens   | 3                         |                                       |                            | Ph  | MARTENS & A<br>Suite 201,<br>Hornsby, N<br>one: (02) 9476 9                       | SSOCIATES PT<br>20 George Stree<br>SW 2077 Austra<br>1999 Fax: (02) 9<br>/EB: http://www. | Y LTD<br>et<br>alia<br>476 8767         |  |   |                                       |                   | -   |                              |   |                    |

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|---------|---|--|-----------------------------------|----------------------------------|---------------------------------|----------------------------|---------------------------------------|---|-------------------------------------|---------------------|------------------------|--|--|---|---|-------------------------------|---|--|---------------------------------|---------------|---|-----------------------------|---------------|---|-----------------------------|
| _       | ROJI  | ECT  | D                                 | etailed S                        | Site                            | Inve                       | estigatio                             | n                                       |                                     |                     |                        |  | LOGGED   | ВМ  |   | CHECK                         | ED  | JF   |                                 |               |   | Sheet 1                     | of 1          | Ì   |                             |
| -       | TE  |  | S                                 | outh We                          | _                               | _                          | n Urban                               | Vill                                    | age                                 |                     |                        | _  | GEOLOGY  |   | jelly Shale                                 | VEGET                         |   | Gras   | s                               |               |   | PROJECT N                   | <b>10</b> . P | 1504996   |                             |
| _       | CAVA  |  | DIMEN                             | ISIONS                           | _                               |                            | cavator<br>1.1 m depth                |   |                                     |                     |                        |  | EASTING<br>NORTHING                                  |   |   | RL SUF                        |   | -<br>East  |                                 |               |   | SLOPE                       | <5%           |   |                             |
| ٣       |   |  |                                   | ION DA                           |                                 | IIII X                     | 1.1 III deptil                        |   |                                     |                     |                        |  | RIAL [   |   |   | AOFEC                         |   | Lust   |                                 | SA            |   | G & TES                     |               |   |                             |
| METHOD  |   | WATER  | MOISTURE                          | DEPTH(M)                         | DRILLING                        | RESISTANCE                 | GRAPHIC LOG                           | CLASSIFICATION                          |                                     | moi                 | MA IL NAME colour, se  | TERIAL  E, plasticit econdary endition, co | DESCRII<br>y or particle<br>and minor<br>onsistency/ | PTION e characteris components frelative dens re/fabric, colo | ity,  | CONSISTENCY                   |   | DENSITY INDEX  | TYPE                            | DEPTH(M)      |   | RES                         | ULTS A        |   | ;                           |
| Е       | . Nil   | N  | М                                 |                                  |                                 |                            | × × × × × × × × × × × × × × × × × × × | ×<br>×<br>×<br>×                        |                                     | dark b              | brown/                 | brown,                                     | with fine  | dium pla:<br>e grained<br>, 10-20%                            | sand  |                               |   |  | Е                               | 0.15          | 4996/T  | P211 /0.15<br>- Brick and t | tile inclus   | - Fill<br>sions.                                    | -                           |
| E       | : Nil   | N  | D                                 |                                  |                                 |                            |                                       | - CL                                    |                                     | CLAY -              | low to                 | mediu                                      | m plastio  | city, grey  | /brown.                                     | S-F                           |   |  | E                               | 1.0           | 4996/TP:  | 211/1.0                     |               | - Residual  | -<br>-<br>-<br>1 <u>.0</u>  |
|         | FQUIFF  | MENT   | T/ME                              | 1.1                              | JPPO                            | RT                         | WATER                                 |   |                                     | <i>I</i> OISTURE    |                        |  | Clay.  | 1.1m on   |   | s                             | AMPLIN                                      | JG & TE  | STING                           |               |   |                             | C             | :LASSIFICATI  | 2.C. 2.C. 3.0.0 4.0 4.0 0 N |
|         | N N<br>X E<br>HA H<br>S S<br>CC Co<br>V V-<br>TC Tu | atural<br>existing<br>and au<br>pade<br>oncrete<br>Bit<br>ngster | expos<br>g exca<br>uger<br>e Core | ure SF<br>vation SC<br>RE<br>Nil | H Sho<br>C Sho<br>B Roo<br>I No | oring<br>otcrete<br>ck Bol | N Nor<br>e X Not<br>lts ∇ Wa          | ne obso<br>measo<br>ter levo<br>ter out | erved D<br>ured M<br>el W<br>flow W | Dry<br>Moist<br>Wet | L<br>M<br>H<br>limit R | Low<br>Moder                               | VS<br>ate S<br>F                                     | S Very Soft<br>Soft<br>Firm<br>Stiff                          | VL Very L<br>L Loose<br>MD Mediu<br>D Dense | m Dense U<br>D<br>ense M<br>U | Bulk s<br>Undis<br>Distu<br>Moist<br>x Tube | r sample<br>sample<br>sturbed s<br>rbed san<br>ure cont<br>sample<br>nmental | sample<br>nple<br>ent<br>(x mm) | S<br>V:<br>D: | Pocket po<br>Standard<br>S Vane sho<br>CP Dynam<br>penetro<br>D Field der<br>S Water sa | ic cone<br>meter<br>sity    | est S         | YMBOLS AND<br>OIL DESCRIP<br>Y USCS<br>N Agricultur | O<br>NOIT                   |
| t No. 4 |   |  | )                                 |                                  |                                 | E                          | EXCAVATI                              | ON L                                    | OG TO                               | BE READ             | ) IN CO                |  | MARTENS  | S & ASSO  | MPANYING RI<br>CIATES PTY L<br>eorge Street |                               | TES A                                       | ND AE  |                                 |               |   | erin                        | n I           | 00 -  |                             |

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Suite 201, 20 George Street
Hornsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au

| CI                          | IEN  | Т  | U                                 | niversal                         | Prop  | erty Grou                             | p Pt                        | y Ltd   | COMMENCED  | 7.10.15                                       | COMPLETE                                      | <b>D</b> 7.10   | .15                                    |                     |                      | REF                        | TP212   |
|-----------------------------|--|--|-----------------------------------|----------------------------------|---|---------------------------------------|-----------------------------|---|--|---|---|---|--|---------------------|----------------------|----------------------------|---|
| PF                          | ROJE   | JECT Detailed Site Investigation LOGGED BM CHECKED JF  South Werrington Urban Village GEOLOGY Bringelly Shale VEGETATION Grass |                                   |                                  |   |                                       |                             |   |  |   |   |   |  | Sheet 1             | of <b>1</b>          |                            |   |
| EQUIPMENT 5 Tonne excavator |  |  |                                   |                                  |   |                                       |                             | age   |  | Bringelly Shale                               | +   |   | SS                                     |                     |                      | PROJECT NO                 | D. P1504996   |
| -                           |  |  | DIMEN                             |                                  |   | X 1.5 m depth                         |                             |   | EASTING<br>NORTHING  | -   | ASPECT  | E -   | t                                      |                     |                      | SLOPE                      | <5%   |
| <u> </u>                    |  |  |                                   | ION DAT                          |   | / no m dopar                          |                             | MAT   | ERIAL DAT  |   | 17.0. 20.                                     |   |  | SA                  |                      | G & TEST                   |   |
| METHOD                      | SUPPORT  | WATER  | MOISTURE                          | DEPTH(M)                         | L DRILLING H RESISTANCE                       |                                       | CLASSIFICATION              | MATERIA SOIL NAME, plastic colour, secondal moisture condition ROCK NAME, gra           | AL DESCRIPTIC<br>city or particle char<br>ry and minor comp<br>consistency/relativ | on<br>racteristics,<br>onents,<br>we density, | CONSISTENCY                                   | DENSITY INDEX   | TYPE                                   | DEPTH (M)           | A                    |                            | LTS AND<br>OBSERVATIONS   |
| Е                           | Nil  | N  | М                                 | -                                |   | × × × × × × × × × × × × × × × × × × × | XX                          | Fill: Silty CLAY - L<br>dark brown/browi<br>and gravels (                               |  | ained sand                                    |   |   | Е                                      | 0.15                | 4996/TP2             | 12/0.15<br>- Brick and tik | - Fill<br>e inclusions.   |
| E                           | Nil  | N  | D                                 |                                  |   |                                       | CL                          | CLAY - low to medi  | um plasticity,   | grey /brown.                                  | S-F   |   | E                                      | 0.65                | 4996/TP2<br>4996/TP2 |                            | - Residual  |
|                             |  |  |                                   | 1.5                              |   |                                       | -                           |   |  |   |   |   |  |                     |                      |                            |   |
|                             |  |  |                                   | _<br>_<br>_<br>_<br>_<br>2.0     |   |                                       |                             | Testpit termina   | ated at 1.5m o   | on clay.                                      |   |   |  |                     |                      |                            | 2.  |
|                             |  |  |                                   | -                                |   |                                       |                             |   |  |   |   |   |  |                     |                      |                            | -   |
|                             |  |  |                                   | -                                |   |                                       |                             |   |  |   |   |   |  |                     |                      |                            |   |
|                             |  |  |                                   | 3.0                              |   |                                       |                             |   |  |   |   |   |  |                     |                      |                            | 3 <u>.</u>  |
|                             |  |  |                                   | -<br>-<br>-                      |   |                                       |                             |   |  |   |   |   |  |                     |                      |                            |   |
|                             |  |  |                                   |                                  |   |                                       |                             |   |  |   |   |   |  |                     |                      |                            | 4_  |
|                             |  |  |                                   | _<br>_<br>_<br>_<br><u>4</u> .5  |   |                                       |                             |   |  |   |   |   |  |                     |                      |                            | 4.  |
| 1                           | N N<br>K E<br>HA Ha<br>S S <sub>I</sub><br>CC Co<br>V V-I<br>TC Tu | atural<br>existing<br>and au<br>pade<br>oncrete<br>Bit<br>ngster   | expos<br>g exca<br>uger<br>e Core | ure SH<br>vation SC<br>RB<br>Nil | PPORT<br>Shorin<br>Shoter<br>Rock E<br>No sup | rete X Not<br>Bolts ∇ Wa              | e obse<br>measu<br>ter leve | red M Moist M Mod<br>el W Wet H High<br>Wp Plastic limit R Refu<br>flow WI Liquid limit | VS Verate S So F Fin Sal St Sti VSt Ve H Ha  | ff D Dense<br>ery Stiff VD Very Den           | Dose A Au B Bu Dense U Ur D Di nse M Mo Ux Tu | LING & Ti<br>ger sample<br>llk sample<br>ndisturbed<br>sturbed sa<br>bisture cor<br>be sample<br>vironmenta | e<br>sample<br>mple<br>itent<br>(x mm) | pp<br>S<br>VS<br>DO |                      | ic cone<br>meter<br>sity   | CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION  Y USCS  N Agricultural |
| t No. 4                     |  |  | )                                 |                                  |   | EXCAVATI                              | ON L                        | OG TO BE READ IN CONJUN   | MARTENS & A  | ACCOMPANYING REF                              |   | S AND A   |  |                     |                      | erino                      | Log -   |

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Suite 201, 20 George Street
Hornsby, NSW 2077 Australia
Phone: (02) 9476 9999 Fax: (02) 9476 8767
mail@martens.com.au WEB: http://www.martens.com.au